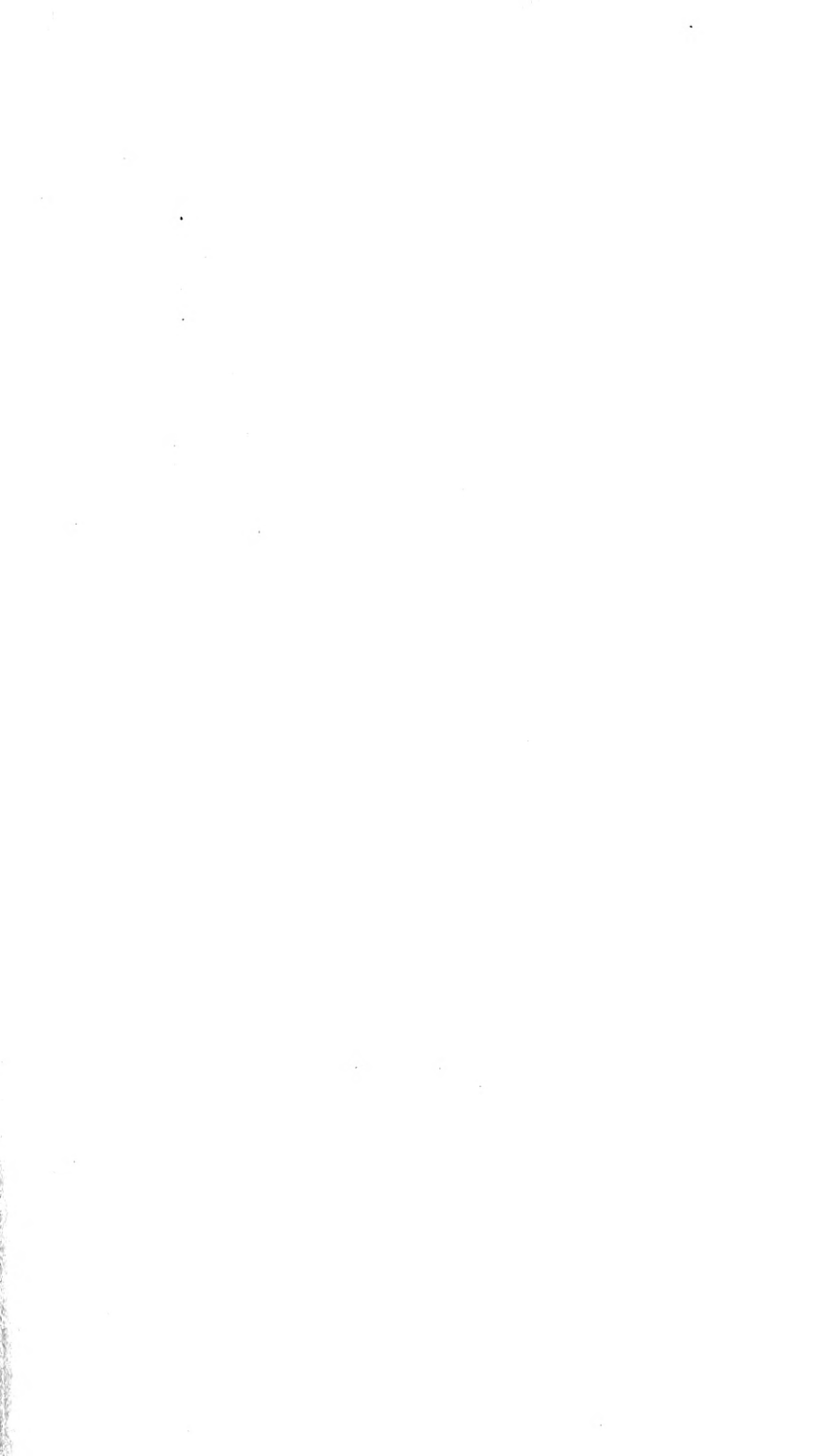


Septemb 1899

R. W. Gibson - Invt





THE

Literary Record and Journal

OF THE

LINNÆAN ASSOCIATION OF PENNSYLVANIA COLLEGE.

CONDUCTED BY A COMMITTEE OF THE ASSOCIATION.

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VOLUME III.

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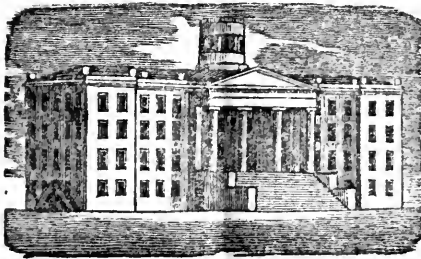
VOLUME III.]

[NUMBER 1.

THE  
**LITERARY RECORD AND JOURNAL**

Of the Linnaean Association of Pennsylvania College.

NOVEMBER, 1846.



CONDUCTED  
By a Committee of the Association.

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# Pennsylvania College, Gettysburg, Pa.

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There are two vacations in the year, commencing on the third Thursdays of April and September, each of five weeks continuance.

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We have taken the liberty of sending this number of the Journal to a few of our friends, who have not forwarded their names. We have supposed that they would be pleased to become subscribers, and would be glad to encourage the Association under whose auspices the Journal is published. If such persons do not desire it continued to them, they will be kind enough to fold it up in a wrapper, as they received it, with their names on the envelop, and return it to the Editors. In every instance in which it is not returned the subsequent numbers will be regularly sent.



THE LITERARY

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## PHILOSOPHY OF STORMS. NO. IV.

BY PROF. WASHINGTON L. ATLEE, M. D. PHILADELPHIA, PA.

As I am now approaching that part of the subject which requires a frequent use of the thermometer, I will give a general idea of its construction in order to make all acquainted with this invaluable little instrument. It consists of a glass tube, not often exceeding twelve inches in length, of very uniform and small bore, one end of which is blown into a spherical cavity, and the other end hermetically sealed after it has been partly filled with quicksilver, and all aqueous vapor and air have been expelled by boiling. Heat applied to the spherical cavity, or bulb, now filled with mercury as just stated, will cause the narrow column of fluid within the tube, or stem, to rise, and cold will cause it to fall, and by means of a scale attached, we are enabled to read off the degrees of variation. The scale used in this country is that proposed by Fahrenheit, and is graduated into  $180^{\circ}$  between two fixed points—called freezing and boiling points—obtained by immersing the bulb, in melting ice and in boiling water. The first point is marked  $32^{\circ}$ , the other  $212^{\circ}$ , the graduation being extended both below and above these numbers to a certain extent. This instrument differs in the object of its construction from the barometer already described—the former determining the temperature of bodies, the latter the weight of air.

The *dew-point* may be ascertained, according to the method first introduced by M. Le Roi, by cooling a vessel of thin glass or metal until moisture begins to settle on the outside, and noting the *highest* temperature at which the deposit takes place. In warm weather cold spring water poured into the vessel will cause the moisture to collect on the outside. In cool weather it will require the addition of ice, or a mixture of saltpetre and sal ammoniac; and in very cold weather, to this mixture should be added table salt and snow or pounded ice. So soon

as a deposit of moisture on the glass is effected, immerse the bulb of a thermometer in the contents of the vessel, and, after wiping off the outside of the vessel, observe if the moisture again settles. Should it settle, wipe off again, and continue to do so, until it scarcely collects any more, being careful to stir the solution with the thermometer during the observation, so that the vessel, its contents, and the bulb may acquire the same temperature. *Now observe—the moment that this thin film begins to dry, note the degree of the thermometer in the vessel, and that is the temperature of the dew-point.* This is the highest point on the thermometric scale at which moisture will settle at that time, and it may always be anticipated by the thin film of moisture on the vessel assuming all the colors of the rainbow. The temperature of the dew-point never can exceed that of the air; sometimes it is as high, as when the air is saturated with moisture, and during rain; but generally it is lower and always diminishes in proportion to the dryness of the air.

This method of taking the dew-point is susceptible of great precision. I will observe, however, that it may be obtained indirectly by two thermometers as follows:—cover the bulb of one thermometer with a wet rag; then swing both briskly in the air until they become stationary; *note the difference, multiply this by 103, and divide the product by the wet-bulb temperature, subtract the quotient from the dry-bulb temperature, and the remainder will be the dew-point.* Thus:—

<i>Dry-bulb.</i>	<i>Wet-bulb.</i>	<i>Wet-bulb.</i>	<i>Dry-bulb.</i>	<i>Dew-point.</i>
70°	— 64°	= 6° x 103 =	618°	÷ 64° = 9.°656
				— 70° = 60.°344.

This method will answer when the wet-bulb temperature ranges between 20° and 75°.

My next object will be to explain the method of ascertaining the temperature and elevation of forming-cloud. As the temperature of the dew-point is the only point at which vapor loses its gaseous form, and as cloud is only vapor condensed, it follows that allowing for elevation, *the temperature of the dew-point and that of forming-cloud must always be the same.* Assuming the dew-point at the earth's surface to be 60°, and the temperature of the air 70°, the temperature of the forming-cloud, at its base, will, in consequence of its height, as I will soon show, be 57.°5. Now as respects the height of the base of the cloud. This can also be ascertained by the thermometer, as correctly perhaps as by the sextant. I have already stated that in ascending into the atmosphere the temperature diminishes at the rate of one degree for about every 352 feet. It appears, however, from experiments, at least for small elevations, that *when air ascends*, it becomes colder about 1¼° for every

100 yards; and that the dew-point falls about one quarter of a degree, on account of the greater space occupied by the air and vapor, for every hundred yards of ascent. Now suppose the temperature of the air upon the surface of the earth to be  $70^{\circ}$ , the dew-point being  $60^{\circ}$ , there will then be a difference of  $10^{\circ}$  between the temperature of the dew-point and that of the air. This difference is called the *complement of the dew-point*. The temperature of an ascending column of air, therefore, cooling  $1\frac{1}{4}^{\circ}$  for every 300 feet of its ascent, and the dew-point falling one quarter of a degree under the same circumstances, it follows that one degree is equivalent to every hundred yards, and that such a column will begin to form cloud when it rises about as many times 300 feet as there are degrees in the complement of the dew-point. Now the complement of the dew-point at the surface of the earth being  $10^{\circ}$ , the ascending column of air, after it has gone up 3000 feet, will have cooled  $12\frac{1}{2}^{\circ}$ , and will thereby be reduced to  $57\frac{1}{2}^{\circ}$ , or the estimated dew-point at that elevation. At this temperature and height, vapors cannot at this time exist in a gaseous form in the air, and, therefore, must be condensed into cloud. Hence the height of the base of a cloud, forming under these circumstances, must be 3000 feet, and its temperature  $57\frac{1}{2}^{\circ}$ . That this calculation is correct, has been proved by a number of gentlemen in Philadelphia, who instituted a series of experiments for this and other purposes. They raised kites ten feet in diameter, and attached them to wires three miles long, wound upon a reel. While the kites were hovering in the base of a cloud their height was taken by one set of men by means of the sextant, while another set took the height of the base of the cloud with the thermometer. The results of both observations were put down separately, and, when compared, were found to agree, far within the limits of the errors of observation. It may, therefore, be considered as established *that the difference between the temperature of the dew-point, and that of the air, (the complement of the dew-point,) multiplied by 300 will always give the height, in feet, of the base of a cloud.*

In accordance with my promise in the last number, I will now explain the manner of calculating the quantity of vapor in a given amount of air, although it will considerably lengthen this communication. This discovery was made almost simultaneously by Dalton and Gay Lussac, and afterwards was more fully investigated by Dulong and Petit. I may here pause to observe that the principles, upon which Professor Espy establishes his theory, were discovered by other philosophers without any reference, even the most remote, to their bearing upon storms, and that he is merely applying them to the explanation of certain natural

phenomena, whose operations, as well as the laws upon which they are founded, were not, until recently, revealed to man. This circumstance certainly gives peculiar force and character to his theory, as it indicates a spirit of inquiry purely inductive. The experiments of Dalton prove that heat is the true and only cause of the formation of vapor. He found that the actual quantity of vapor, which can exist in a given space, is dependent solely upon the temperature. This is a most beautiful circumstance, that the thermometer, which was invented merely for ascertaining the relative quantity of caloric in bodies, should now likewise be employed, not only in estimating the height of clouds, but in determining the absolute quantity of vapor in the air! As the quantity of vapor is always proportionate to the temperature, so if we have a low or high dew-point we have a small or larger quantity of vapor. When the dew-point is given, therefore, we can always ascertain the exact amount of vapor. In order, however, to understand this part of the subject, it will be necessary first to refer to several propositions:

1. All gases expand alike for equal increments of heat; and all vapors, when remote from their condensing points, follow the same law.

2. The rate of expansion is uniform for all degrees of heat.

3. The rate of expansion is not altered by a change in the state of compression, or elastic force of the gas itself.

4. The actual amount of expansion is equal to  $\frac{1}{460}$ th part of the volume of the gas at  $0^\circ$ , for each degree of the same scale.

Now to discover how much the volume of a gas or vapor would be increased or diminished by a particular change of temperature, let it be required, for example, to find the volume which 100 cubic inches of gas at  $60^\circ$  would become on the temperature rising at  $70^\circ$ .

The rate of expansion is  $\frac{1}{460}$ th part of the volume at  $0^\circ$  for each degree; or 460 measures at  $0^\circ$  become 461 at  $1^\circ$ , 462 at  $2^\circ$ ,  $460+60=520$  at  $60^\circ$ , and  $460+70=530$  at  $70^\circ$ . Hence

<i>Meas. at 60°</i>	:	<i>Meas. at 70°</i>	::	<i>Meas. at 60°</i>	:	<i>Meas. at 70°</i>
520		530		100		101.92

Again:—If a barometer-tube filled with mercury be inverted, and a few drops of water be passed up the tube into the vacuum above, the mercury will be depressed to a small extent, and this depression will increase with the increase of temperature. This depression depends upon the vapor which instantaneously rises from the water into the vacuum. Now the same power which forces the mercurial column down one inch against the pressure of the atmosphere outside the tube would of course *elevate* the column to the same height against a vacu-

um, and in this way the tension may be very conveniently expressed. Dalton, to whom we owe this method of investigation, has constructed a table exhibiting this elastic force of vapor, and which may be found in any of the recent works on chemistry. The following are a few of the results :—

<i>Temperature.</i>	<i>Tension in inches of mercury.</i>	<i>Temperature.</i>	<i>Tension in inches of mercury.</i>
32°	0.200	70°	0.721
40°	.263	80°	1.000
50°	.375	80°	1.360
60°	.524	212°	30.000

Again:—The point of maximum density of a vapor is dependent upon the temperature; it increases rapidly as the temperature rises.—Thus, taking the specific gravity of atmospheric air, at 212° = 1000, that of aqueous vapor in its greatest possible state of compression for the temperature will be as follows :

<i>Temperature.</i>	<i>Specific Gravity.</i>	<i>Weight of 100 cubic inches.</i>
32°	5.690	.136 grains
50°	10.293	.247
60°	14.108	.338
100°	46.500	1.113
150°	170.293	4.076
212°	625.000	14.962

Evaporation into a space filled with air or gas follows the same law as evaporation into a vacuum; as much vapor rises, and the condition of maximum density is assumed in the same manner as if the space were perfectly empty.

Now let us apply the foregoing principles to determine the quantity of aqueous vapor in the air :

Suppose the temperature of the air to be 70°, and that of the dew-point 60°, as we have assumed above; the elasticity of the watery vapor would correspond to a maximum density proper to 60°, and would support a column of mercury .521 inch high. Therefore, if the barometer on the spot stood at 30 inch, 29.479 inches would be supported by the pressure of the dry air, and the remaining .521 inch by the vapor. Now a cubic foot, or 1728 cubic inches of vapor at 70° would become reduced by contraction, according to the above law, to 1695.4 cubic inches at 60°. Thus :

<i>Meas. at 70°</i>	<i>Meas. at 60°</i>	<i>Meas. at 70°</i>	<i>Meas. at 60°</i>
530	520	1728	1695.4

This vapor would be at its maximum density, having the specific gravity 14.108, pointed out in the table above. Hence 1695.4 cubic inches would weigh 5.73 grains. Thus :

<i>Measures.</i>	:	<i>Grains.</i>	::	<i>Measures.</i>	:	<i>Grains.</i>
100	:	0.338	::	1695.4	:	5.73

The weight of the aqueous vapor contained in a cubic foot of air at any temperature will thus be ascertained.

By such calculation it is found that if the temperature of the dew-point be  $32^{\circ}$ , the quantity of vapor will be  $\frac{1}{40}$ th of the whole weight of the air. If  $52^{\circ}$ , it will be just double, or  $\frac{1}{20}$ th; if  $73^{\circ}$ , it will be double again, or  $\frac{1}{10}$ th; and at the dew-point above assumed, or  $60^{\circ}$ , it will be  $\frac{1}{8}$ th of the weight of the air. These tables not only furnish us with the means of ascertaining the quantity of vapor, but also its tension or elasticity, or, in more common phrase, its steam power. All vapor, existing in the air in a gaseous state, is steam, and the phenomena of a storm are intimately connected with this steam power, which, varying from day to day, continues to rise until it is discharged in the form of rain. Thus a dew-point of  $32^{\circ}$  indicates an elastic force of 0.200; one of  $52^{\circ}$ , a force of 0.401; of  $73^{\circ}$ , 0.796; and our dew-point  $60^{\circ}$ , a force of 0.521. So that we are enabled to calculate the force of a storm in the same way that we estimate the power of a locomotive engine. These results, so easily obtained through that admirable little instrument, the thermometer, are considered by Professor Espy as the corner-stone of his theory.

#### EARLY LITERATURE OF THE GERMANS.

##### THE UNLIKE CHILDREN OF EVE.

BY PROF. H. L. SMITH, A. M. OF HARTWICK SEMINARY, N. Y.

Among the contemporaries of Luther, and holding high rank among the Master-singers, was Hans Sachs, the shoemaker of Nuremberg, who was born A. D. 1494, and died 1576. I have, on one of my shelves, a volume of his minor productions, and I esteem him one of my pleasantest acquaintances among the earlier poets and writers of Germany.—Goethe, who thoroughly appreciated his poetical merits, most earnestly called the reverent attention of his countrymen, to their all-but forgotten, burgher-poet and moralist. His character is one that wins the respect and admiration of all: his life was one of unwearied and most honorable activity, devoted to the beautiful, as well as the useful—employed in promoting the important interests, and the lighter, but innocent enjoyments of his fellow-men. He was a most devoted friend of Luther

and the Reformation, and rendered the great cause of truth and piety no small service in his native land. In his character were united an unbending integrity and a straight-forward frankness and sincerity, with the most beautiful and unassuming simplicity: a healthy philanthropy, a genuine brotherly love, with an unaffected cheerfulness, and a rich vein of artless humor, that never forgot the respect due to the true and the good.

Among his numerous writings, that of which the title stands at the head of this article, is strongly illustrative of the simplicity, and artless *naïveté* of his own character. The subject seems to have been a favorite one with him, for he treated it, no less than three several times, in as many different ways: first in 1553, in the moral drama: "How the Lord blesses Eve's children:" next in 1553 in "the comedy of the unlike children of Eve," and lastly, in 1558 in "the Amusing History of the unlike children of Eve." His manner of treating this ancient myth is, in every instance, happy—but most so in the History last mentioned.—He returned to it again and again, evidently desiring to give it a form as perfect as possible. Let none of my readers be offended at this mode of treating such a subject. Let them remember that we speak of the age of "Moralities," of dramatic representations based upon Scripture-histories: let them remember that the design of this "History" is a serious one, viz. to teach, that God is the Author of the distinctions in human society; and none will be either offended, or excited to ridicule, who can bring to the contemplation of this graphic picture, the pure and exalted, and reverent simplicity, with which the artist drew it. The following is a translation of the "*Amusing History.*"

"When Adam and Eve had been expelled from Paradise, they cultivated the earth, which no longer brought forth spontaneously; and they had a great number of children. After a long time the Almighty God sent them word, by an angel, that he intended to visit them, and to inspect their domestic arrangements. Then Eve was glad of God's goodness towards them; she swept her whole house, adorned it with green herbs and flowers, and began to wash and comb her handsomest children, and to plait their hair; she clothed them in newly-washed raiment, exhorted and taught them how they should bow politely, to the Lord, on his arrival, offer him their hands, and conduct themselves with propriety. Her ugly children, on the contrary, she concealed under the straw and hay, or in the oven, fearing lest the Lord should express displeasure at sight of them. When now the Lord entered her abode, the comely children all stood in a row to receive him, bowed respectfully, offered him their hands, and knelt down before him. But the Lord began to bless them, and laid his hands on the first boy's head, saying:—

“Thou shalt become a mighty king:” to the second he said: “Thou shalt become a prince;” to the third: “Thou a count;” to the fourth: “Thou a knight;” to the fifth: “Thou a nobleman;” to the sixth: “Thou a burgher;” to the seventh: “Be thou a merchant;” to the eighth: “Do thou become a learned doctor!” Thus he gave to all of them a copious blessing. But when Eve saw this, and considered the gracious kindness of the Lord, she thought within herself: “I will fetch also my ugly children, that God may have compassion on them;” she hastened, therefore, and dragged them forth from under the hay, from the manger and the oven, and brought them into the presence of God, an unseemly, uncombed, scabby, sooty, rude and awkward rabble. Then the Lord smiled, looked at them all, and said: “I will bless them also;” laying his hands on the first; he spake: “Thou shalt become a farmer;” to the second he said: “Thou shalt become a fisherman;” to the third: “Be a smith;” to the fourth: “Be a tanner;” to the fifth: “a weaver;” to the sixth: “a shoemaker;” to the seventh: “a tailor;” to the eighth: “a potter;” to the ninth: “a teamster;” to the tenth: “a seaman;” to the eleventh: a news-carrier;” to the twelfth: “thou shalt remain a scullion as long as thou livest.” When Eve heard all this, she said: “Lord how unequally dost thou distribute thy blessings! Surely these are all alike my children, and thy favor should be extended, in like manner, to all.” Then the Lord replied: “Eve, this is a matter which thou dost not understand. It is my concern, and a most important one, to take care of the interests of all the world through thy children; if they should all be princes and gentlemen, who would cultivate grain, and thresh, and grind, and bake; who would work in iron, or at the loom; who would wield the axe, and build houses; who would dig; who would cut, and sew? Each one shall follow his own appropriate occupation, that each may contribute to the support of the other, and all be maintained, like the members of one body.” Then answered dame Eve: “O Lord, forgive! I was too hasty in obtruding my advice upon thee: may thy divine will be done, as regards my children!”

How exquisite is the *naïveté* with which this people's-poet thus sets forth the origin of distinctions in human society. In the moral drama, as well as in the comedy, both mentioned before, there is, of course, a great deal more of minute detail, and various delectable passages occur, which want of room forbids me to transfer to these pages.

I have before spoken of this “History” as Hans Sachs' Version of an ancient myth. He is fond of authenticating such narratives, by referring to some distinguished authority. In the introduction to the “Comedy,” the herald is made to say of it:



“Originally it was writ  
 In Latin by Philip Melanchthon,  
 And now for common folk’s benefit,  
 Into German speech ’tis also done.”

And at the head of “the History” just given, he again says :

“The Scollards years ago did indite  
 A poem beauteous and erudite.”

But, of course, Melanchthon is by no means the author of this legend. He relates it to the count Joannes a Weda, in a letter of March 23d, 1539; in which he says: “facere non potui, quin adjicerem narratiunculam, quae in quodam poemate extat, non illam quidem historicam, sed venustam et erudite confictam, admonendae adolescentiae causa, ut cogitet et discrimina ordinum divinitus instituta esse, et unicuique laborandum esse, ut virtute suam personam tueatur.”

Melanchthon’s “harratiuncula” supplies some exquisite additional details, which I cannot add in the present article. From the expression: “Erudite confictam,” we may infer, that the poem of which Melanchthon speaks, was written in Latin. And at all events, his letter proves that Hans Sachs only worked up, in his charmingly simple style, materials which he found in a popular myth already extant.

*Notice of the appearance of a great number of Insects of the genus PHASMA in the neighborhood of Reading, Pa., by J. P. Hiester, M. D.*

Having had occasion to visit Oley in the latter part of September, I observed, at a great distance, the forest on the Monocacy hills, which form the Eastern boundary of the valley, to be stripped of its leaves, and to have a peculiar brown appearance. On inquiry I was told that within a month, or six weeks, myriads of strange insects had suddenly made their appearance, and were voraciously devouring all the leaves of the forest trees. I had learned a few days previously, that some insect was committing great ravages on the forest trees at the distance of twenty-four miles in an opposite direction. Individuals from both localities being procured, were found to be the same insect. It is beyond doubt a *Phasma* and I think the *Phasma Rossia*. The body is about three inches long, varying from a light yellowish green to a dark cinerious brown, and is often of a beautiful cane color with darker spots, particularly on the thighs. The female is about as thick as a small goose-quill, and the male rather less than half that thickness.—

The abdomen is nine-jointed. The thighs and legs are straight, with the striæ retrossely and stiffly hairy. The tarsæ are 5—6 jointed, hairy and terminate in two recurved claws. There is a tooth near the lower end of the thigh, which is more conspicuous in the male. The antennæ are very long, (nearly as long as the body) tapering to a point, jointed and sparsely hairy. The eggs are ovoid, about a line and a half in length, and of a shining black color, except on one side, where they are whitish, and in this a lengthened *hilum* is exactly represented. On one of the ends also there is a whitish alveolar spot. They strikingly resemble the seeds of some leguminous plants. Their six long legs enable these insects to move with considerable celerity: when they are at rest, they place their antennæ directly forwards and close to each other. They feed voraciously in day-time, and with a distinct noise. They seem to prefer the leaves of the chesnut-oak and the chesnut tree, feed upon the parenchyma and leave the nerves, which gives the forest the peculiar brown appearance, when viewed at a distance, already referred to. As they do not attack the leaf-buds, and the season being far advanced, there is reason to hope that the forests will sustain no great injury. I much regret that their distance from Reading has prevented me from investigating their habits more fully. My friend Dr. Bischoff opened some females and found them to contain about thirty eggs in various states of maturity, as well as the absence of all glutinous matter, and the insects wanting the ovipositor, would serve to indicate that the eggs are dropped upon the ground. If I am right in my opinion that this is the *Phasma Rossia*, the description of the insect in Cuvier's *Regne Animal*, (Livraison 215, page 14,) has several inaccuracies: "Sans aîlés dans les deux sexes, vertjaunâtre, où d'un brun cendré; antennes *très courtes, grêues et coniques*; pieds ayant des arêtes; une dent près de l'extrémité des cuisses." Both my friends Dr. Bischoff and Mr. Kessler have found specimens of the insect as long ago as ten or twelve years, but they have never seen them in such numbers. Accompanying this account I send you several specimens, for the Museum of the Linnean Society.

Reading, Pa. October 15, 1846.

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ON READING. NO. I.

Neither is any part of time more put to the account of idleness, one can scarce forbear saying, is spent with less thought, than great part of that which is spent in reading."

BISHOP BUTLER. Preface to Sermons.

All the objects which men have in view in reading the writings of

others may be summed up as follows: The improvement of style or the cultivation of taste; the acquisition of information, or the gratification of curiosity; the securing of mental discipline or moral improvement; amusement or relaxation. One of these is before us, or two or more combine to influence us, whenever we begin the perusal of any publication. It is probable that the majority of men are influenced by the desire of acquiring information, or of amusement; and we should not err greatly in supposing that a very large proportion read for amusement simply; to while away what might otherwise be a tedious hour, or to satisfy the cravings of an appetite for the strange, the terrible, and the exciting. Such men eagerly seize on works which minister to this appetite, every indulgence of which but serves to strengthen its demands. They are as much the charmed victims of a depraved passion, as the poor drunkard who seeks his pleasure in the excitement of intoxicating drink. And as there are not wanting at every turn those who will furnish the burning draught to the crazed inebriate, so there are those in great numbers who are ready to furnish the cup of poisoned literature to this craving appetite. These victims are found in every class, of every age and grade; from the young lady who languishes over the last new romance, or the school boy whose eyes dilate over the "Pirate's Own Book," or some other equally sage and moral record, to the wrinkled dame who, "with spectacles on nose," in her chimney corner, devours the weekly chronicle of dreadful accidents, awful catastrophes, and horrid murders. Doubtless, in this case, the appetite and the supply are, each in its turn, both cause and effect. The one encourages the other, and the other reciprocates the encouragement. It is somewhat singular that the complaint should have been made some hundred and twenty years ago by the wise man, whose words are quoted at the head of this article: "The great number of books and papers of amusement, which, of one kind or another, daily come in one's way, have in part occasioned, and must perfectly fall in with and humor, this idle way of reading and considering things." Had he lived in our day, his complaint might have been more bitter. Not only do *volumcs* issue in thousands from the press, and at prices so low as by their very cheapness to tempt a purchaser, but quarterly and monthly magazines, in great numbers circulate through the land, while weekly and daily papers are multiplied almost beyond computation. All branches of science, every department of literature, every variety of taste, finds among these its organ and minister. The man of science, the scholar, the politician, the merchant, the mechanic, the farmer, the jurist, the physician, the theologian, the sectarian, the transcendentalist, and the *sans-culotte*, each has

his magazine or paper; while "The Ladies' Book," or "The Mirror" graces the parlor, and "The Mother's Magazine" finds its way to the nursery. Children, too, are not neglected, but have either their "corner" in some larger periodical, or find their "organ" in the "Youth's Companion," or "Scholar's Magazine." A device which appeared some time since at the head of an advertisement in one of our daily papers, may be considered fitly emblematical of one of the leading features of our age and perhaps of our Country. It represented a locomotive engine, apparently under a full head of steam, and throwing off numberless printed cards in all directions. Suppose those cards to be books, or pamphlets, or papers, and the device illustrates the publishing feature of our age. A large portion of this countless issue, undoubtedly, is good seed, and when good fruit fails to grow from it, the fault is to be found in the soil on which it falls, or other controlling influence. But much, it is to be feared, is tares and cockle, and many a Upas grain is thrown into some rank soil, and gives forth a rapid noxious growth.

We would be far indeed from laying the least obstacle in the way of the widest diffusion of knowledge. But it seems evident that this great amount of publications of all sorts, especially when we consider the character of a large portion of them, has a tendency to engender false taste, and make superficial readers rather than men of sound intelligence and reflection. To the temptation held out, is to be attributed much waste of mind and time, and the formation of pernicious habits, both mental and moral. Amusement, in too many cases, becomes the object of the reader—or extent of surface in the domains of knowledge is sought for, rather than depth and excellence of soil. Men *make haste* to be wise, and fail of wisdom: proving by facts that the labor saving process, so admirable when applied to material products will not answer for the mind. Men may cram the whole circle of sciences into a duodecimo, manufacture linguists by a dozen "lessons of one hour each" teach theology in primers, and convey in a few lectures to listening and *intelligent* thousands, the principles of law and government; but after all, in the hour of need, their scientific men, their linguists, and theologians, and statesmen will be found wanting. It is as true now, as it was two thousand years ago, that there is no short road to knowledge, and "with many a trial is excellence attained."

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 ETYMOLOGY.

One of the most profitable exercises in which the student of language can engage, is the etymological investigation of words. By this

is meant the tracing of words from their roots through all the various ramifications into which accident caprice or convenience has distributed them. This exercise is both interesting and profitable and furnishes at the same time a fund of information, whilst the imagination may be highly gratified. Here the mind becomes enlarged, its love of order and system is gratified and its judgment strengthened.

Take as an illustration of one form, the word  $\pi\iota\lambda\omicron\varsigma$  the primitive signification is *hair* or *wool* thrown into the form of cloth, with which the ancient Greeks lined their helmets. Then they discovered that they could wear the lining of the helmet without the brass, and the word was applied to a woolen or hair cap. When the people of Athens however became very refined and luxurious, they applied the term only to the caps of the poorer classes. After the word was used to denote a cap, it signified with the qualifying adjective  $\chi\alpha\lambda\kappa\omicron\upsilon\varsigma$  a helmet or brazen cap. Then it branched out from the parent stock into various connexions which need not be enumerated. Now it will be readily seen what a mental exercise this is for the student anxious to arrive at intellectual maturity. Here we see how the manners and customs of the people, their views and feelings, their modes of thought and action, all modify the language, and through this variety of modification, the mind pursues its eager inquiries up to the parent stock and root. But this is not all. Consider the connexion which this process establishes with other languages as exhibited in this single word and a new field opens to our astonished view: a field as extended and vast as the generations of the human race. Here we will discover that one language does not stand isolated and detached from the rest, but that there is a common bond of union more intimate or remote among all the languages of the earth.—From the word  $\pi\iota\lambda\omicron\varsigma$  we derive the Latin word *pilus*, the hair of any creature, *pileus* a cap, the German word *filz*, the Saxon *felt*, the English *felt*, *pelt*, *peltry*, etc. Now look at this word in its ground-form as it existed long before the birth of Homer, and follow it down the stream of time amid the vicissitudes of fortune and the convulsions of nature down to the present form in our own language, which may or may not be the last language in which it will form a constitutional part and say, is not the science of language wonderful, and does it not present to us one of the most interesting monuments of the human mind, —time worn indeed, yet venerable—which it is capable of contemplating?

Take the word  $\sigma\upsilon\kappa\omicron\phi\alpha\nu\tau\eta\varsigma$  as another illustration. This word is compounded of  $\sigma\upsilon\kappa\omicron\nu$  a *fig*, and  $\phi\alpha\iota\omega$  to *show* to *inform*. During a season of dearth, when provisions were scarce at Athens, it was deem-

ed advisable to prohibit the exportation of figs. We may suppose that under the original circumstances of the case, an informer or *συκοφάντης* would be honored and that the epithet would be honorable, for he would be detecting crime and honoring the laws. But it would not be likely that during a season of dearth, this law would be violated; first, from love of country which was very strong among the Athenians, and secondly, because there would be a great demand for figs at home. Now this law against exporting figs, remained un-repealed in the statute, when a plentiful harvest rendered it unnecessary by removing the cause of its creation. But ill-natured and malicious persons from this took occasion to inform on all persons whom they could discover transgressing the letter of the law. From them all informers were branded with the name *συκοφάνται*. The word is never used in a good sense. Hence when Demosthenes in the oration on *the crown*, makes the distinction between the counsellor and the sycophant, and by implication applies this latter term to *Æschines*, we can appreciate the force of the expression to an Athenian ear. The word after this signified a tale-bearer in general, then a parasite, a flatterer, then especially a flatterer of the great, of princes, hence a deceiver, an impositor. The word as transferred and used in our language is generally applied to those who hang upon the great and flatter them; and hence it means one who flatters to deceive. Now what a fund of information the history of this word furnishes us. What an interesting and profitable mental exercise. We become acquainted with a law of the Athenians, the cause of that law, the state of society when that law was in operation and we learn something of their human nature. It opens a door by which we can look, at least to some extent, into the workings of their minds, and finally we become thoroughly acquainted with our own language so far as one word can teach us. Thus language etymologically considered opens one of the richest mines to the philosophical student.

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EPISTLES TO STUDENTS. NO. III.

YOUNG GENTLEMEN:

There remains of your matriculation vow something more to be said. It is not exhausted in the topics thus far considered. In addition to the things pledged, which have already been presented, you solemnly bind yourselves, upon your truth and honor, "to abstain from the use of profane language."

Your college in making this requisition, proceeds upon very safe ground. It is nothing more than directing your attention to one of the

precepts of the decalogue, and binding upon your conscience the solemn duty of obedience to it. God hath spoken and said in a code of perpetual obligation—"Thou shalt not take the name of the Lord thy God in vain, for the Lord will not hold him guiltless, who taketh his name in vain." The founder of Christianity in his sermon on the Mount, teaches us not to swear at all by any oath whatever "not however, as generally understood, rejecting that oath for confirmation, which is the end of all strife." Profanity prohibited by God and by the statute law of your college, consists in using the name, the title, the attributes of God lightly, irreverently, and without any necessity. Appeals to him for the truth of what we utter, when undemanded by any competent tribunal of our country, imprecations of his judgments upon our fellow men, who have offended us, are frequent forms of this offence—an offence against the law of God and the decencies of social life. An exposition of the law of God on this subject, however profitable it might be, is not consistent with the plan of our letters. We omit any further explanation of what is implied in this promise, and confine ourselves to the propriety and obligation of that promise. It is certainly proper, in a Christian institution, that that great Being whom we worship as our Creator, before whom we are all soon to appear in judgment should be feared by us and that we should abstain from all unbecoming language in regard to him. If, in the presence of a wise man, we would regard it as proper to avoid disrespectful language and any such use of that by which he was distinguished, or appertained to him, much more should we towards God. The obligation is of the strongest and most imperative character and the idea never can be indulged with any reason that duties burdensome and oppressive are imposed upon us, when it is required at our hands that we should not be profane.

In no way can this vice contribute to an advantage. It has no immediate, it has no prospective benefits. It gratifies no passion, it subserves no interest. It is utterly inexcusable. Abhorred by the good, its language is repelled from the vocabulary of the polite. Particularly guarded should the young be against this most gratuitous offence. Easily acquired, it is with difficulty abandoned when it is formed into a habit. It appears without effort and displays itself without being observed by its victim. It has the weakest inducements, but the deepest guilt. It prepares for bitter remorse, and is subjected to severe punishment. Sometimes in this life the anger of God strikes down the profane, always in eternity the unreclaimed swearer is exposed to the terrible strokes of vindictive justice. Avoid it then, young gentlemen, for it is of evil portent. Avoid it, for it is diffusive and contaminating. It

spreads around. The young, in whom moral respectability is but partially developed, children, who cannot appreciate its evil, acquire it, learn from you, and if not ruined, are in extreme hazard of losing their souls. As long as you indulge in the violation of this command, you are incapacitated for the reception of religious instruction, no hope can be entertained that you will regard other precepts of the divine law.—Guilty of profanity, you have the spirit of disobedience as fully as if you violate every precept of God. Guilty of this, your condemnation is as certain as if you could be convicted of an infraction of the whole decalogue. So are we taught in the word of God, when we read, that “he, that keepeth the whole law, and yet offendeth in one point, is guilty of all.”

We conclude with the earnest advice, that in this respect, you give particular heed to guard your tongue, that unruly member, the instrument of great good, the instrument of great evil—for “therewith bless we God, even the Father, and therewith curse we men, which are made after the similitude of God.”

Yours.

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FROM THE GERMAN OF RICHTER.

Is the Sage greater, who, when storms arise,  
 Flies from his home to some more peaceful skies,  
 Calmly looks down on the tumultuous age,  
 Nor lifts his hand to still the sounding rage:—  
 Or he who dwelling in repose, afar  
 From crowds discordant and tempestuous war,  
 Yet leaves repose and dear loved peaceful joys,  
 And boldly plunges in the battle noise  
 Of the rude time—bound by the sacred tie  
 Which links his soul to loved humanity?  
 A noble sight to see the bird of Jove  
 Fly through the storm to the still heav'n above:  
 But nobler far when hovering on high,  
 In the clear blue that spans the upper sky,  
 He plunges downward through the blacken'd cloud,  
 Store-house of lightning and of thunder loud,  
 And seeks his eyrie, where with trembling fear,  
 Crouch his young offspring, objects of his care.

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UNWRITTEN LANGUAGE.

Unwritten Language, I indeed say, but the words do not express all, for that of which we speak is both unwritten and incapable of being



written, It is the communing of the inner soul with the vast universe of thought, which is bounded by no limits, and which, in its relation to the mind, presents itself under such varied and transcendent forms.—Through it, the highest, holiest, most exalted ideas are conveyed; for is it not the very *powerlessness* of words that makes it “unwritten?” It comes to speak of the inconceivable grandeur of an unseen and unfelt eternity, yet disdains not to breathe of the modest beauties found in the humblest portions of creation. The Christian Philosopher feels it, as he thinks of God, the child hears its mute whisperings, as the zephyr gambols among the woodbine leaves.

Throughout, there are images of beauty, wondrous beauty. 'Tis a beautiful language which God pencils in moonbeams upon the bosom of the still lake. Silently, though not voicelessly, those bright beams are falling; and, poor, weak man, with thy ten thousand words and folio-lexicons, I defy thee to set them in such order that they may reach my heart as does that mute language! At such a time, talk not to me of words long and short and all the technicalities of grammar, for this language existed before such refined disquisitions perplexed mortal minds. Than this I would not desire a preacher more persuasively eloquent; for, in an inconceivably short space, I have a sermon something like this: “’Tis calmness and peace that mirrors heaven perfectly: and turgid waters mar the lustre of reflected images. What benevolence in Him, who sets the seal of loveliness even upon the inanimate creation; yet is it not also as a means of refining the human soul, by luring it away from its gross and bestial tendencies to innocence and purity.” He must be worse than a heathen who is not moved by these things. They seem to me as a constant warning and entreating voice, urging from the commission of evil. Yea, methinks, the black purposes of the heart do not so readily rise, when these still voices are permitted to speak. Would the man-slayer deliberately select as the scene of his atrocity the verdant mead, beneath embowering elms, with the gurgling brook hard by, prattling in innocence? Would he not hesitate to dye that green turf with crimson gore, and not rather seek the arid sands that drink blood greedily, or creep among dews and cares, suited in noisomeness to the foulness of his *crime*? Is not beauty, purity, and innocence powerfully spoken in this same unwritten language?

But, there is grandeur and might! The restless heaving and throbbing of “Ocean’s yesty waves” gives birth to an idea which mere words fail to utter; and the spectator of Niagara’s wonders needs no “description” of its grandeur. Men say that “God speaks in the thunder,” but who *knows* it so well as the mute, back-skrinking individual, upon whose

ears the crashing peal has just burst? We read description after description of the burning of Moscow; yet with all their beauty and vividness, there is a vacuity left in the mind which the sight of the fierce flame enwrapping the humblest tenement with its sheets of fire completely supplies. There is the confused and smothered mingling of many voices in the distance, sometimes a cry of terror or irrepressible emotion, giving evidence of some new horror; the noise of preparation to subdue the flames; the risk of human life; the ascending volumes of smoke, illuminated from below, and occasionally gemmed all o'er with brilliant sparks; the dull glare along the horizon and upon surrounding objects—and all this in the night, the dark still night! Can words express it? Who has *written* what you and I have seen, have *felt*? Who has ever thus caused reality to start upon our senses, and given evidence that a new power was given to man, to speak the things before unspeakable? That man lives not!

This Language that seems to float all around ready to speak to him who will hear, is a prerogative conferred by the Deity, through which “the invisible things of Him are clearly seen,” and that man is a happy man who listens to its voice. The thoughts that come to him are not those of bitterness and strife. There is much of holiness, and a world of peace: yea

“When thoughts

Of the last bitter hour come, like a blight,  
 Over thy spirit, and sad images  
 Of the stern agony, and shroud, and pall,  
 And breathless darkness, and the narrow house,  
 Make thee to shudder and grow sick at heart,  
 Go forth under the open sky and list  
 To Nature's teachings, while from all around,  
 Earth and her waters and the depths of air,  
 Comes a still voice.”

And if that voice has never come to you, then have you lost the half of existence and ineffable joys.

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LOOSE LEAVES FROM MY SKETCH BOOK. NO. I.

BY J. G. M.

*Berlin*, May 19. To day Prof. Erichson invited me to attend the weekly meeting of a club of *Savans*. In the evening we repaired to the place of *rendezvous*, which was in a large apartment of Prof. Klug's dwelling. I expected to meet a number of *celebratics* and was not disappointed. As we entered, the members were chattering familiarly in

knots around the room. They received me cordially after a general introduction and in a few minutes I was busily engaged in answering questions on the condition of science in the United States. I had previously met with but few of these gentlemen, but I was resolved to find them all out before the meeting closed. The President soon called to order and we seated ourselves around a long table. Whilst some informal proceedings were going on, I asked Prof. Erichson, "Who is that old gentleman, the chairman of the meeting?" "That is Link, Professor of Botany." "O Yes! I've heard of him." Prof. Link is the author of seventeen works on Botany, and some of them of no small compass.—His writings are greatly admired by the learned in this science, and he has received honors from most of the scientific societies in Europe.—He has travelled into various other countries and has gathered the botanical treasures of many foreign lands. He is now an aged man, but still full of vivacity and takes as much interest as ever in his favorite science. Prof. Klug, with whom I had before become acquainted, sat next to him. He too is an old man, but his energies have not failed, and in conversation he is as sprightly as a youth. Klug is one of the entomological lights of the age. I had long been familiar with his works and had been indebted to him for some valuable exchanges.—Though he is still a Professor in the University, yet I believe he does not read lectures. He is chiefly occupied as an examiner of candidates for medical degrees and is in some way connected with the medical police of the city. He commenced his career as a disciple of *Æsculapius*, but has distinguished himself particularly as a pupil of the school of Linné. Most of his time has been devoted to Natural History. He is now Director of one of the departments of the University Museum, and by the bounty of his Sovereign, he is relieved from arduous duties. He is an interesting old gentleman and profoundly versed in Entomological science.

"Professor, who are those two gentlemen that resemble each other on the left of Klug?" "Those are the brothers Rose, the one nearest Klug, is Prof. of Chemistry." "Is he the gentleman who accompanied Humboldt to the Ural Mountains, and wrote the Manual of Analytical Chemistry?" "The same,—his brother is Prof. of Geology."

The next in order was John Müller, the great Physiologist of Germany, and one of the most brilliant luminaries in the constellation of European *scientifiques*. He is a universal genius and has received not only the plaudits of the scientific world for his numerous and original writings, but also orders and decorations from Sovereigns. Berlin is proud of John Müller. He is rather a *youngish* man, born during this

century, but he has already written twelve works, and is now the editor of that famous Medical Journal, *Archiv für Anatomie, Physiologie und wissenschaftl. Medicin*. I had seen him before in his own study, which is next to the great hall in which is kept the collection of Comparative Anatomy. He was surrounded by a knot of pupils to whom he was describing some curious phenomena in his favorite science.

"You must have patience with me, Professor,—who is that handsome, bald headed gentleman in specs, next to Müller?"

"That is Von Buch!"

"What! Leopold v. Buch, the world known geologist?"

"The same." "I would have come a hundred German miles to see him alone."

"Well, I'll introduce you to him now. Prof. v. Buch, dies ist mein Freund Herr M. aus den Vereinigten Staaten." We were near each other and could converse without disturbing the meeting. I had been acquainted with his books and especially his theory of the elevation of mountains by the agency of subterranean gases, and was delighted with seeing the author.

At this moment the door opened and a very ordinary looking man, in a *very* plain dress, came bustling in and planted himself in a chair in no very dignified style, and at the same time uttering a witticism on a remark made by a member. Who was this? No less a man than the astronomer Encke,—the man who lives among the stars and is himself a star of the first magnitude. He has rendered his name famous all the world over; for in one sense it is written in blazing letters on the skies, and is borne with lightning rapidity through fields of illimitable space. Every body has heard of Encke's comet, which was thus designated, because by his profound calculations, he proved that the comet of 1819 was the same as that observed in 1805. He has also calculated the observed transits of Venus across the Sun of 1761 and 1769, and has written many other celebrated astronomical treatises. He is only fifty-four years of age and in the full vigor of life and will no doubt, render much more valuable service to the science of the stars.

Now—said Erichson—we will proceed. The man at the end of the table is Gurlt, the Prof. of "Veterinary Surgery." This gentleman has published seven works in his department of science, and deservedly maintains an elevated rank. And thus my friend E. proceeded to give me the names of more of the gentlemen present, of most of whom I had previously heard. There were men there, whose fame has reached the ends of the earth, and are the cherished favorites of kings and nobles, but who were still as unassuming and unostentatious as country

lads. I do admire the social habits and *bearing* of these learned Germans.

I have said nothing of my *Cicerone* through this gallery of distinguished worthies. Erichson is a celebrated young man. He is now Prof. of Entomology in the University, and his name is well known to all students of Zoology by his numerous and elaborate writings. He ranks among the first entomologists of Europe, and is acknowledged as authority on all disputed points in his department. He has a discrimination that seldom deceives him, an industry that is indefatigable and talents capable of grasping the profoundest mysteries of Zoological science. In private life, he is a pattern of excellence—hospitable to strangers and forbearing to his enemies, for there are those who envy Erichson's elevated position and his fame. He and his father-in-law, Klug, are men, from whom scientific strangers in Berlin may expect to receive the kindest attention.

These were a few of the men constituting the meeting. The proceedings were pretty much as follows:

Prof. Müller exhibited a lock of hair curiously annulated with white and brown; and this was the text of a learned off-hand dissertation on the growth of the hair at different periods of life—its influence on health—its effect on temperament. It was a physiological lecture which I did not pretend to understand altogether, but I comprehended enough to know that John Müller, as they call him, was quite *au fait* in the mysteries of physiological science.

Prof. Poggendorf, shewed some electrical paper, and another specimen of paper perfectly transparent. It was beautiful. He explained the process of manufacture and the uses, and made many interesting remarks on the discovery of this invaluable writing material.

Mr. Bouche, a distinguished writer on Dipterous insects, made some observations on the difficulties of rearing the *larvæ* of the *Teuthredinæ*, to which he had paid much attention. He showed some specimens of new species. This brought out Klug and Erichson, who delighted the company with striking and original remarks on this and kindred subjects.

Erichson then continued and gave us an extempore lecture on those insects which were furnished with an air bladder, as *Gyrinus*, *Parnus*, *Beubidium*, &c. He explained the nature and uses of this singular apparatus, and whilst he interested us all by the remarkable facts he narrated, he also displayed the most intimate acquaintance with the anatomy of these small beetles. He talked as familiarly of the internal struc-

ture of these minute animals as John Müller would of that of the human body.

Prof. Gurd read an article on the twin fœtus of a goat, which had grown together back to back. He showed finely executed drawings of the animals and of their anatomy. When he had concluded, the other members added some remarks and this led to the subject of the Siamese twins. Some of them inquired whether these were still living. I answered the question and gave them the history of these twins since their arrival in our country. I also mentioned the report of their marriage to two sisters in North Carolina. This excited much surprise and led to many additional and *curious* questions.

Some other short dissertations were read by members and thus the evening was delightfully and profitably spent. The meeting was not conducted with any formality, but each member spoke when he pleased without observing any order, and more than one good illustrative anecdote was told. The whole was more like a parlor conversation than a scientific meeting and this imparted an additional charm to the whole.—The Professors laid aside the starched dignity of the lecture room and unbent themselves without any reserve. They were by themselves and did not even suspect there “was a chief amang ’em takin’ notes.” It was a delightful *re-union* and among the many pleasant reminiscences of Berlin—this meeting is one of the most interesting.

I do not think these learned gentlemen in general, *talk* as well as our Americans of the same class. They pay much less attention to the manner than the matter. They do not appear to have the ambition that we have, *to talk well*, to aim at fluency, energy and excellence of diction in common conversation. From no small intercourse with the cultivated classes of various nations, I think no men on earth *talk* so well, I mean so fluently, correctly and *pointedly*, as our educated countrymen.

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#### INFLUENCE OF LITTLE THINGS.

How frequently has it happened that a single thought or a casual occurrence exciting inquiry has led to some of the greatest discoveries and most splendid inventions. Some of the most valuable philosophical truths have been suggested by the simplest events. *Copernicus* had heard that one of the Greek philosophers believed that the earth revolved on its axis every twenty-four hours, and performed its revolution round the sun in the course of a year. The remark had been read again and again by others before Copernicus, but was doubtless regarded as a wild hypothesis. He made it a material of his thoughts to work upon, and the

result was an entire revolution in the opinions of the school and the universal adoption of what every one now regards a very simple truth.

*Galileo* discovered the most perfect measure of time which we possess by observing the movements of a lamp suspended from the ceiling, which some circumstance had disturbed and caused to vibrate. The phenomenon had been noticed before, but no one had watched it with the philosophic attention with which it was observed by the young Italian who at once saw the important application that might be made of the fact suggested to his mind.

An accidental circumstance in the life of *Priestly*—his residence in the vicinity of a brewery, directing his curiosity to the examination and analysis of the several gases and the singular result of his experiment led to others which in his hands soon became Pneumatic Chemistry.

The falling of an apple, seen by all the world before a thousand times, first suggested to *Newton*, that gravitation was the mighty band of the Universe—the principle on which the mechanism of the heavens depends.

*Godfrey's* invention of the Mariner's quadrant, upon the optical principle of double reflection, (referred to by a recent correspondent of the Record,) is also an illustration of the facility possessed by some individuals of turning to profit the results of casual observations.

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#### NEW EXPLOSIVE PREPARATION.

Professor Shonbeim has discovered a method of rendering cotton explosive and a substitute for gun powder. The process of its preparation is as yet a secret. It kindles more readily than gun powder, the former requiring a temperature of  $400^{\circ}$ , whilst the latter requires a temperature of  $600^{\circ}$ . Its combustion is perfect, leaving nothing to stain or deposit upon the substance upon which it is lying when it is inflamed. This is a great desideratum, since in the combustion of even the best gun powder so much residual matter which has not been burned is deposited as to render its removal from the chamber of fire arms a matter of constant necessity. Its explosive properties are not inferior to those of gun powder, so that in the use of fire arms it will likely be substituted for it. It is not injured by having become wet; for when dried again it will burn as readily as before.

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#### THE METEOR OF JULY 13TH, 1846.

Mr. Kirkwood (*Linnaean Journal*, vol. ii. p. 250) states that this meteor "was vertical somewhere between York and Lancaster." It was

observed upon the east bank of the Susquehanna two miles above Columbia, Pa. (intermediate between York and Lancaster) by Mrs. S. S. Haldeman, to whom it appeared to be vertical, and moving east of north.— This confirms Mr. Kirdwood's statement, and affords an additional fact.

II.

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A notice of Le Verrier's planet, recently discovered, arrived too late for this number. It will be given in our next.

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PENNSYLVANIA COLLEGE.

Our friends at a distance will be gratified to learn that the exercises of the Winter term have opened under the most favorable auspices.— The accession of new students is *thirty-eight*. The whole number in attendance is already one hundred and fifty, and as we have been in session only about a fortnight, our prospects may be regarded as unusually encouraging.

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TO THE READERS OF THE RECORD AND JOURNAL.

In entering upon a new volume of our periodical we are disposed to say a word, rather in compliance with custom than from a consciousness of its necessity. The interest which has been manifested in the Journal during the past two years of its existence as well as the favorable reception it has met abroad, is a sufficient indication of its usefulness, and furnishes the strongest hope of its future success. We have only to urge our friends, who have, by their continued support, evinced their approval of our efforts, to make some exertions to extend the circulation of the Journal. In order that there may be no pecuniary risk involved in the publication, we should be glad to secure some additional subscribers. Renewed efforts will be made to improve the character of the Journal, and from promises of co-operation and assistance which have been given by gentlemen of ability, the Editors hope that its value will be increased. It is our intention to leave nothing undone to render the work all that it professes to be, and in every way deserving the confidence of our friends and the patronage of the community. With the humble trust, that a liberal and enlightened public will continue to smile favoringly upon our efforts, we commend our labors to the indulgence of all who may think them worthy of their notice.

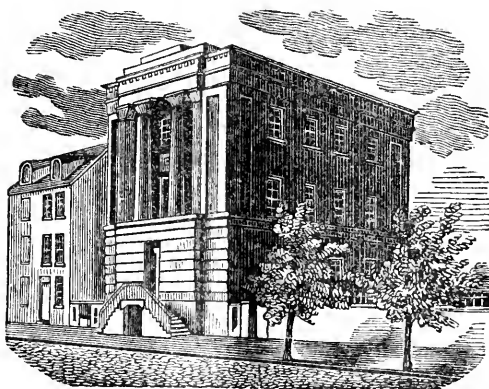


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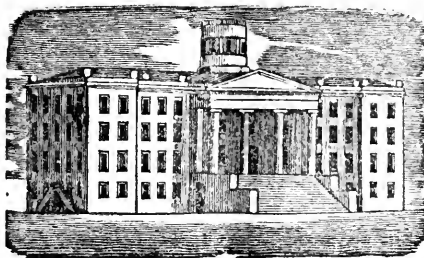
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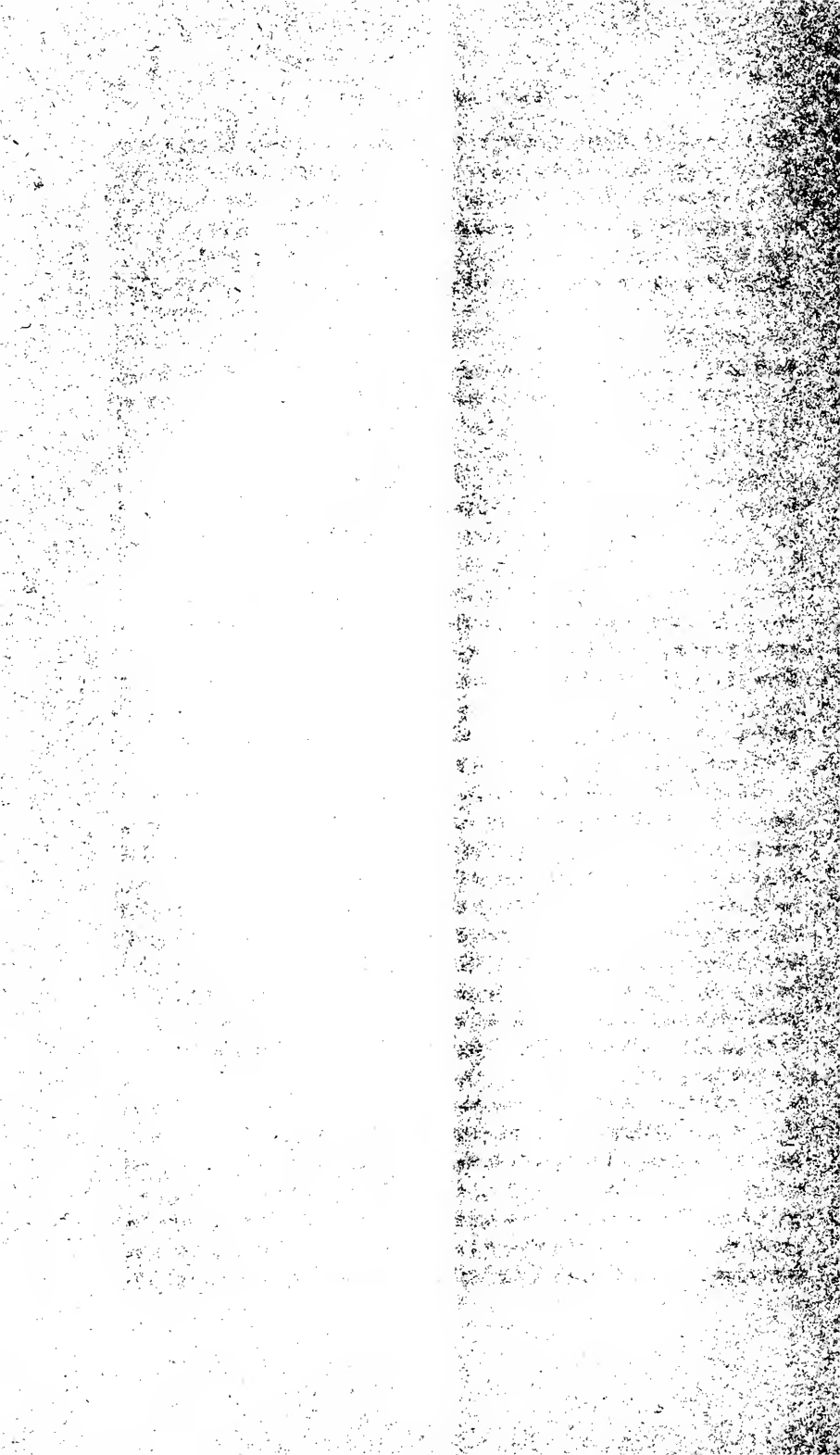
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THE LITERARY  
**RECORD AND JOURNAL**

OF THE LINNEAN ASSOCIATION OF PENNSYLVANIA COLLEGE.

VOL. III.

DECEMBER, 1846.

No. 2.

GERMAN PHILOSOPHY.

*By C. De Remusat, Member of the Institute of France.*

(Continued from p. 231, Vol. II.)

FICHTE.

The sense of that which was wanting in the criticism of Kant, animated his rivals and successors. But it was a system so skillfully woven together, it seized upon the mind so powerfully that the most distinguished thinkers looked within it and not without it for that which it lacked. They made use of Kant in order to advance beyond him, or even to contradict him. The three great philosophers who have reigned since him, have come forth from his school.

That which was most clearly wanting to his system was a principle. Among the great examples given by Descartes, is that of a philosophy truly systematic, that is to say, having a principle, the source of the unity of the system. Since him, whether right or wrong, philosophy has formed its ideal upon this condition. It might, therefore, be supposed, and so it was supposed, that if there could be found in the system of Kant a principle forming as it were its apex, a principle not exterior to the criticism—critical, but not dogmatic, the system would be complete, and philosophy at its utmost limit.

Such ultimately was the thought which inspired FICHTE and his followers.

Fichte announced this at the introduction of his doctrines; he sought for the most absolute principle, the absolutely unconditional principle of human cognition, a principle that could be neither deduced nor demonstrated.

Every act of consciousness is a fact given in experience, an interior phenomenon, accidental as an actual fact, or, as they say in Germany, an empirical determination of the *me*. I suffer a pain, I see a rose, there is

here no principle; and could we fix by reflection or find again by memory, the first in point of time of such facts as these, it would be a beginning but not a principle. But if there was in that act, in every act, or in general in acts of consciousness, any thing, even an act, upon which all consciousness might rest, which would render all consciousness possible, that something, that act might be the principle sought for.

Kant admitted nothing but a principle of fact, an origin, a commencement, experience (the sensation of Locke and of Condillac.) Fichte penetrated to the very source of that fact, he scrutinized what was there concealed, he examined, if there were not there something more than a phenomenal modification, an accidental state, for example, a fundamental and primitive act, having the character and authority of an axiom, of a verity certain in itself, in short, a law that should be as the source and title of all cognition. And this is what he thought he had discovered by means of the following deduction.

In order to consider the reason in an absolute manner, or in abstract logic, the judgment of identity  $A=A$  is admitted as absolutely certain. Of this no proof is either given or demanded. It is absolute truth.—Observe, this does not affirm an existence, it only affirms a law. It says, that if a thing is, it is that which it is. This is a proposition certain in its form.

Observe again, that in this judgment  $A$  as a subject is hypothetical,  $A$  as a predicate is certain. We do not know whether  $A$  exists, but if it does exist it is  $A$ . Thus the proposition passes from the problematic to the categorical; in the language of Fichte, the first  $A$  is supposed, the second is posited. The bond that unites the one to the other, the bond that is the essence of the judgment, where is it? whence does it come? Evidently from the mind that judges. It is this that Fichte expresses in saying that the connection  $X$  is given to the me by the me itself. This  $A$  as the subject is posited hypothetically;  $A$ , as the predicate, is posited absolutely in the me by the me. In other words, if I have  $A$ , I judge that it is  $A$ ; in still other extremes, if I think  $A$ , I think of it as  $A$ , or, in fine, I think that the  $A$  which I think is the  $A$  which I think. Thus  $A$  as subject,  $A$  as attribute, and the connection  $X$  which unites them, all suppose the me; and the identity, which according to logic is in the judgment, has for its support, in some sort, the identity of the me, in such a way that  $A=A$  includes and implies  $me=me$ , or *I am*; and that proposition, unconditional in its form,  $A=A$  is still more unconditional in its contents; for the me is thus necessarily given by the connection  $X$  which connection  $X$  is necessary in itself. Thus in saying  $A=A$  we announce a proposition absolute in its form, and as this

proposition absolutely implies the contents  $A=A$ , the second proposition is, like the first, absolute, and it is in its contents as in its form.

It may be said that *I am* is only a fact of the empirical consciousness, but as  $A=A$  is an absolute truth, *I am*, or  $me=me$  (the proposition upon which  $X$  is founded, which  $X$  is the necessary identity of  $A=A$ ) is likewise a proposition absolutely certain.

Thus then *I am*; the *me* posits the *me*; the *me* posits itself. Every judgment, we know, is an act of the human mind. The judgment *I am* is the primitive act, the pure act; to posit oneself constitutes the pure activity; and as *I* is in the *me* and by the *me* just as well as *am*, as in  $me=me$ , the first *me*, posited in general in and by the *me*, implies the *me* just as much as the second *me* which is posited absolutely in and by the *me*; it follows that we can equally say, that the *me* is because it posits itself, or, it posits itself because it is. The *me* then exists absolutely and necessarily by the *me*. Before it was conscious of itself, the *me* was not at all; by the *me*, to posit itself, or to be, are identical expressions.

By merely changing the expression of that deduction and rendering it a little more scientific, I believe it will be difficult to find in it anything more than the *Cogito* of Descartes, or that very simple expression; the idea (sentiment) of existence is inseparable from personal existence. Between this reduction and  $me=me$ , there can be only the difference of a physical law of nature and its algebraic expression.

We cannot here give a full analysis of the other two principles which Fichte added to the first. We may just observe however, that the second principle consists in this, that the *me* which posits the *me* opposes the not-*me*, that is to say, that the negative identical proposition being as absolutely certain as the affirmative, as it is just as true that what is not  $A$  is not  $A$ ,  $-A=-A$ , as it is true that  $A=A$ , not-*me* is equal to not-*me*; but as in that proposition the *me* is still necessary, the primitive and pure act re-appears in all its entirety. Notwithstanding this we are presented with this singular contradiction, that the negative of the *me* is supported by the affirmative of the *me*. And, in fact, *that which is not me is not me* supposes that *me is me*. But there the *me* supposes the not *me* and posits it, and it does not suppose it or posit it hypothetically but in itself. Thus in denying, it affirms it. In its contents the proposition virtually denies the *me*, but affirms it in its form. It is conditional in its contents, absolute in its form. The not-*me* is not the *me*, is a proposition in which the *me* posits itself in the *me* and opposes itself in the not-*me*. How can it be that it establishes itself at the very moment when it annihilates itself, because to posit the not-*me*

seems to be to annihilate the me; but it only annihilates it in so far as it posits the not-me. In one word, the me denies and affirms itself, or posits and opposes itself by its self-limitation.

As the me is primitively posited only in an absolute manner, there cannot primitively be any contrary posited in it but what is opposed to the me.— $A = -A$ , or  $-A$  is not  $= A$ , is absolute in its form, and consequently it is the same as this proposition, the not-me is not the me.—But as that principle is, in its contents and matter, deduced from the former, it is not in that connexion absolute; it may be thus expressed: the not-me is opposed to the me; in other words, the me posits itself and opposes the not-me.

But here there is a contradiction. The me destroys what it has created; it posits itself, and in opposing the not-me, we may say that it *deposes* itself. In so far as the not-me is posited, the me is not; but the not-me is posited in the me, for all opposition supposes the identity of the me which posits and which opposes, that is to say, that it cannot take place but in so far as a me is posited in an identical consciousness. How can we conceive of  $A$  and  $-A$ , being and not-being, reality and negation co-existing together without destroying each other reciprocally? This cannot be but upon the condition that they destroy each other in so far as is necessary to their co-existence, that is to say, in so far as they limit each other. To limit a thing is not to destroy it, except in part; this supposes the thing to be divisible; thus the me, just as the not-me, is posited as divisible. This is the third principle, which may be thus expressed; the me and the not-me are both posited by the me as reciprocally limiting each other. It is this third principle that reconciles the two former, which without it would reciprocally destroy each other.

This principle, unconditional in its contents, for it gives an absolute solution which rests upon the reason itself, is derived, so far as its form is concerned, for it is determined by the two preceding principles.

The general cognition resulting from the three principles may be expressed in the following formula: "In the me I oppose to the divisible me a divisible not-me." No philosophy according to Fichte, can ascend higher than this formula.

Upon this we must at present make two observations. The first is, that the design of completing the critical philosophy systematically by a principle, has been executed imperfectly; for, on the one hand, the laws of pure logic are there pre-supposed and are the guaranty for the whole of that deduction; and, on the other hand, with the laws of logic we have the use of certain fundamental notions, such as activity, reality,



limitation or divisibility, that is to say, at least two or three of the categories of Kant. In so far as the reason is in possession of all these ideas, it is here already knowing (in the possession of knowledge;) the "*Doctrine of knowledge*" [Wissenschaftslehre,] as Fichte called his philosophy, thus in part pre-supposes knowledge, but does not give it in its whole extent.

In the second place, this whole deduction supposes not only certain ideas, but still more a fact, the fact of consciousness, and accords, by implication, to that fact the authority of a first fact which renders all the rest possible. It is, therefore, in the last analysis, this fact which is the principle sought for. In other words, the principle is no other than the principle of all psychology, or the principle of Descartes. So much ado was not necessary for such a discovery.

All the novelty is in the rigorously abstract, or, to speak correctly, algebraic form given to the exposition of the fact. This form has its value; it may be useful to constitute the science as an abstract science; it may even serve for the discovery of some ulterior developments.—But, at the bottom, science has, in all this, made no progress, and the critical philosophy has not filled up any of its gaps. Fichte only explains what Kant implies.

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LIGHT-PAINTING.

The last quarter of a century seems to stand pre-eminent for the discoveries in Physical Science, and their numerous practical applications to the ornamental and useful purposes of life, which have been made during that period. The *imponderables*, heat, light, and electricity being in consequence of their intangibility, but imperfectly known as to their more recondite properties and laws, have afforded the richest acquisitions. Among these may be enumerated *Photography*, or the process of making drawings and taking copies of natural and artificial objects by the agency of light.

It has been, for some time, known that light exerted an important influence in producing chemical changes in many metallic compounds, in virtue of which their color was either deepened or discharged. Thus the nitrate and chloride of silver were known to be blackened when exposed to the light of the sun. The nitrate has, for a long time, been used as the basis of indelible ink for marking linen; the writing being immediately exposed to a strong light or the heat of a warm *flat-iron*, during which exposure it became intensely black. Early in this century, Wedgwood and Davy obtained tolerably correct copies of objects

partly transparent and partly opaque, such as the wings of insects, leaves &c., by transmitting the light through them upon paper, upon which a weak solution of the nitrate of silver had been brushed. The paper opposite the opaque parts remained white, whilst that opposite the transparent parts was blackened. But the difficulty was, that unless these copies were kept in the dark the whole paper was blackened and the copy lost.

No further practical use was made of the knowledge of these effects of light, until about eight or nine years since, when Daguerre, a Frenchman, announced the interesting discovery of a process by which permanent copies of material objects could be taken on the surface of a plate of silver. The secret of a process so wonderful, and likely to prove so useful in its applications, was at once purchased by the French Government for a large sum and with true liberality, made known as the property of the world. The art as made known by him, and which has been made to bear the very awkward name of "Daguerreotype," was brought to a wonderful degree of perfection. The plate, which might be one of copper thinly coated with silver, was well cleaned and polished, first with tripoli powder and alcohol, and then with *rouge*; it was next exposed for a few moments to the vapor of iodine contained in a close wooden box having an opening in the top of the size of the plate; when it had acquired a golden yellow color, which was owing to the formation of a very thin film of the iodide of silver, it was transferred, carefully protected from the light, to a *Camera Obscura*, whose focus was previously arranged so as to throw the image of the object to be copied precisely at the place which the plate should occupy; and after remaining there for about five minutes, less or more according to the strength of illumination, it was transferred to a box containing mercury, to whose vapors it was exposed for a short time until the picture appeared. The action of the light alone is not sufficient, as in the case of the nitrate of silver above mentioned, to make the picture to appear upon the coating of the iodide. The light, it seems, is not able entirely to decompose the iodide, for no iodine is set free in the Camera; but merely to produce in it a certain change, which, by the subsequent aid of the mercury, is completed. The mercury, by its attraction, withdraws the iodine, and unites with the silver of that portion of the iodide of silver acted upon by the light, forming with the latter a white amalgam of silver. Hence those parts of the plate most exposed to the light are whitened with this amalgam, those less exposed are less whitened, and those not exposed at all have merely the iodine withdrawn and the dark polished surface of silver restored. These pictures

are therefore positive, that is, the lights are light and the shades are dark.

The Daguerreotype as at first presented, on account of the great length of time required for light to act upon the plate in the Camera, was adapted only to the taking of copies or pictures of fixed inanimate objects. The honor of first successfully applying it in this manner, as well as of many important improvements in making the plate more sensitive &c., it seems is due to Prof. Draper of New York. The plate is rendered incomparably more sensitive than it was in the original process, by its exposure for a few seconds, after being iodized, to the vapors of the chloride of iodine, or the mixture of this combination with bromine, until it receives a purplish tint. And in order to render the picture unalterable by the further action of the light it is washed with a weak solution of the hypo-sulphite of soda, which removes the whole of the iodine from the portion of the plate not yet acted on by the light and exposes the original polish. Finally, to render it permanent, it is, whilst yet wet from the previous operation, washed with a dilute solution of the chloride of gold, which leaves a very thin coating of that metal all over the surface, which effectually protects it against all further atmospheric influences.

It can now be readily understood why, when the plate is left too long in the Camera, the picture should be "overdone," or become uniformly pale and destitute of expression. The shades have become lights. On the contrary, those which have not been sufficiently long exposed to the light, though somewhat too dark to be accurate representations of the color of the original, yet present the lights and shades in a beautiful manner, and give expression and life to the countenance. It is a matter of surprize that so many persons should prefer those cadaverous pictures, which look like no body, to those which, though a shade darker, are both better likenesses and look like something that is yet in the land of the living.

These likenesses, when taken by skillful artists, are absolutely correct, presenting every feature, spot, or wrinkle with perfect accuracy as will appear when they are closely examined with a magnifier. They may be recognized in the most distant lands, and as long as memory lasts. They are therefore invaluable "keepsakes," and mutual friends cannot offer each other a greater gratification for so small an expenditure of money.

But no less accurate and beautiful are the pictures taken by this art of views, landscapes, and inanimate objects, and the most interesting and valuable practical results are obtained by its application in this direction.

But as these pictures exist only on the surface of the silver plate, it cannot be used in this state to multiply copies by printing. Galvanic electricity has been used with tolerable success for the purpose of etching the lines deeper and fitting the plate for the press, so that with regard to such designs it has been beautifully said that there were "drawn by light, and engraved by lightning."

Mr. H. Fox Talbot, who disputed with Daguerre, the honor of the original invention of light-pictures, instead of confining himself, as the latter did, to their fixation upon metallic plates, endeavored to produce them on paper. He tried various metallic compounds, both singly and variously combined, for the purpose of producing a paper sufficiently sensitive and easily managable. His labors led to some very interesting and useful results, an account of some of which he published in 1839. In the 1st vol. of this Journal, p. 17, a correspondent has given us an interesting account of the application of the Bi-chromate of Potassa to the copying of prints, music, embroidered patterns, leaves, &c., and of which he has kindly presented some specimens to the Linnæan Cabinet. It does not, however, appear that any metallic compounds, except those of silver, have been used with much advantage in either of the branches of light-painting.

Mr. Talbot has at length, succeeded in preparing a sensitive paper, which seems to leave nothing wanting for the production, with ease, of the most admirable sun-pictures or "Talbotypes" as they are called. A late number of the "London Art Union" is embellished with a sun-picture, which is a view of the chief place in the city of Orleans, France, in which the shadow of the houses and square, the reading on the signs of the houses, and the people and vehicles in the streets &c. can be seen depicted with the most minute exactness. With this extremely sensitive paper pictures of all objects, animate and inanimate, can be taken with as much ease, fidelity and beauty as with the Daguerreotype. The pictures are however, *negative*, that is the lights are shades and the shades lights; but this can easily be corrected by taking a copy of the original—all copies of the first will be *positive*. A great advantage of the Talbotype is that the pictures are on *paper*, and can be bound up and used as engravings and prints.

Without going into a detailed account of the method of preparing Talbot's paper, which he calls "Kalotype" paper, or taking pictures on it, it will perhaps, be proper to make a general statement concerning them. Good writing paper is washed on one side with nitrate of silver moderately diluted, dried and then immersed in a dilute solution of iodide of potassum and again dried. When the paper is required for use,

it is brushed over with a solution of the gallo-nitrate of silver in acetic acid, formed by adding to acetic acid nitrate of silver and gallic acid.—The whole of the preparation of the paper must be conducted in the dark or by candle-light. This paper may be used after being carefully dried by gentle warmth or whilst it is yet moist. It must be carefully kept from the light, for even the light of the moon makes a sensible impression upon it. When used, it is introduced, for a few seconds into the camera, as in the Daguerreotype; then, as the image is not yet visible, it is brushed over again with the gallo-nitrate of silver, and warmed before a fire, when the picture will immediately begin to appear on the part exposed to the image of the camera. To prevent the other part of the paper from blackening and to fix the picture, it is dipped into a solution of the bromide of potassium, which removes all the salt of silver which has not been altered by the light.

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#### ASTRONOMICAL DISCOVERIES.

BY DANIEL KIRKWOOD, OF LANCASTER, PA.

At the beginning of the seventeenth century, but few, even of the learned, had adopted the system of astronomy taught by Copernicus; and to these, no more than seven planetary bodies were known; viz., Mercury, Venus, the Earth, the Moon, Mars, Jupiter and Saturn. Had the most enthusiastic astronomer of that day been told that in less than two centuries and a half this number should be quadrupled, he would doubtless have regarded the idea as visionary and extravagant. Such, however, has been the fact. Aided by modern instruments, we can now number thirteen primary and eighteen secondary planets. In view of these mighty achievements of science, who will presume to say how much the restless energies of the human mind may yet unfold, even within the limits of our own system, in a century or two to come?

On the 8th of January, 1610, Galileo, "THE COLUMBUS OF THE HEAVENS," discovered the satellites of Jupiter. This was his first great discovery by means of his newly invented telescope. So great, at that time, was the general prejudice against the Copernican system, that some of its opponents, determined to reject whatever might be regarded as militating against their own views of the universe, even denied the truth of the revelation made by the Tuscan glass, thus refusing to admit the evidence of the sense of sight. The following is a specimen of the logic by which Galileo was opposed: "There are seven windows given to animals in the domicile of the head, through which the air is admitted to the tabernacle of the body, to enlighten, to warm, and nourish it;

which windows are the principal parts of the microcosm or little world, two nostrils, two eyes, two ears, and one mouth,—so in the heavens, as in macrocosm or great world, there are two favorable stars (Jupiter and Venus,) two unpropitious (Mars and Saturn,) two luminaries (the Sun and Moon,) and Mercury alone undecided and indifferent. From which and many other phenomena of nature, such as the seven metals, &c., which it were tedious to enumerate, we gather that the number of planets is necessarily seven. Moreover, the satellites are invisible to the naked eye, and therefore can exercise no influence over the Earth, and therefore would be useless, and therefore do not exist. Besides, as well the Jews and other ancient nations as modern Europeans have adopted the division of the week into seven days, and have named them from the seven planets; now, if we increase the number of planets, this whole system falls to the ground!!!”\*

The author of the preceding was no other than Francesco Sizzi, a Tuscan astronomer, who sustained, in his day, no inconsiderable reputation.

Between the date of this important achievement of the telescope and the commencement of the present century, were discovered, at different periods and by different astronomers, the two rings and seven satellites of Saturn, the planet Uranus, and his six attendant moons. Within the first seven years of the nineteenth century, the four Asteroids, Vesta, Juno, Ceres and Pallas were first seen; and, finally, a fifth, which has been called Astræa, was discovered by Prof. Hencke, of Dresden, on the 8th of December. 1845.

But the present year, 1846, has been rendered memorable by one of the most brilliant triumphs of modern science. This is nothing less than the discovery of a primary planet, of great magnitude, revolving far beyond the orbit of Uranus. The probability of the existence of such a body had, indeed, been suggested by several writers before M. Le Verrier, the distinguished discoverer, commenced his investigations. By others, however, it had been decidedly maintained that the orbit of Uranus was, in reality, the limit of our system. “We have,” says Dr. Lardner, “direct proofs of a very cogent character in favor of the position that Herschel is the last and most remote member of the solar system.”† It appears, however, that the reasons assigned by the learned lecturer for this conclusion, were not supported by the facts of the case.

M. Le Verrier was induced to engage in his calculations by the circumstance that numerous perturbations had been observed in the mo-

\* Drinkwater’s Life of Galileo, as quoted by Prof. Nichol.

† Lardner’s Lectures, Vol. I. p. 255.

tions of Uranus which could not be referred to the disturbing influence of Jupiter and Saturn. This want of agreement between theory and observation was attributed by some to errors in the mathematical processes by which astronomers have determined the longitude which, according to theory, Uranus ought to have; but M. Le Verrier, after a rigid examination, found those calculations correct, and hence concluded that Uranus must be exposed to the influence of an exterior planet. He now conceived the bold and original design of determining solely by mathematical investigations what the position and mass of this body must necessarily be in order to account for those mysterious perturbations.

The planet Uranus, before it was shown to be a member of the solar system, had been frequently seen by Flamstead, Lemonnier, and other astronomers, by whom it had been classed with the fixed stars.—Le Verrier made use of all these recorded observations, comparing the places of the planet thence deduced, with those which it ought to have had by theory at the same epochs. In like manner he availed himself of all the observations of the planet, made at Paris and Greenwich, from 1781 to 1845. This Herculean task having been completed, the result was submitted to the Paris Academy of Sciences, on the 30th of June, 1846, in a paper which, at the time, attracted much attention. But although the utmost confidence was expressed by the author in the correctness of his deductions; although the elements of the orbit of his unseen planet were given, and the place in which it was to be looked for designated; perhaps few, if any, expected his calculations to be verified by observation.

When the existence of the new planet was announced, its position was such that it could not be observed; but about two months subsequently M. Le Verrier by letter requested Dr. Galle, of Berlin, to examine with his telescope, the portion of the heavens in which the planet, as he said, was situated; and on the 23d of September, the Doctor actually discovered, in the region assigned by Le Verrier, a star of the eighth magnitude not marked on the map. This he immediately suspected to be the looked-for planet, and, on the following evening his suspicion was confirmed by observing that it had moved from its former place, so that its motion, both in direction and distance, was precisely such as was required by the elements of the planetary orbit computed by Le Verrier. It was observed in London, on the night of September 29th, and has since been seen at the different Observatories in our own country.

The distance of the new planet from the sun is thought to be about twice that of Uranus. According to Bode's law, it would be rather greater, or 3,686,000,000 miles, and this is probably very nearly the true

distance. Consequently, its period of revolution, found by the third law of Kepler, is about two hundred and forty-two years. If therefore, the whole Solar System were arranged as it now exists, at the period assigned by Moses for the creation of our world, this distant member has completed no more than twenty-four annual periods since its creation. But if the Nebular Hypothesis proposed by La Place, be the true cosmogony—if the planets have been formed out of nebulous matter thrown off from the former atmosphere of the sun, in consequence of its gradual condensation—what countless circuits must this ancient world have performed before the birth of even old Uranus!

The apparent diameter of the sun at the distance of this body is a fraction less than fifty seconds, or about seven seconds less than the greatest apparent diameter of Venus as seen from the Earth. The degree of light and heat which it receives from the sun is about one fifteen hundredth part of that enjoyed by the Earth; but even this quantity of light is two hundred times greater than that of our full moon.

This distant globe is said to have an apparent diameter of nearly three seconds; hence its volume must be considerably greater than that of Uranus. M. Le Verrier estimates its mass at more than twice that of the latter planet.

Dr. Galle proposes to call the new planet *Janus*, in consideration of its being situated upon the confines of the Solar System. To this M. Le Verrier objects, inasmuch as the future may possibly show that the limits of the system have not yet been explored. He says, however he will acquiesce in any other name, as *Neptune*, for example, which may be agreed upon by astronomers.

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LOOSE LEAVES FROM MY JOURNAL. NO. II.

BY J. G. M.

Some Living German Naturalists.

“Sie sind Herr Dr. M——, aus B——: nicht wahr?”

“Das ist mein Name — aber wie wissen Sie es?”

“Ich habe einen Brief für Sie, und habe Sie erwartet — treten Sie gefälligst herein, es wird meinem Vater unaussprechlich freuen Sie zu sehen.”

This short and hurried conversation took place between me and a young man in the door way of a large house in Nuremberg on the 6th of June. I sought out the dwelling as soon as I had become fairly domiciliated in my hotel and on ringing the house bell, the young man made his appearance. I had travelled two hundred miles to see its occupant



and anticipated the richest zoological treat. For five years I had corresponded with him, and during all that time had made exchanges with him of shells, insects, books, and minerals. I had read his writings; and admired his numerous zoological engravings, much more than the pictures of a gaudy *annual*. I walked up stairs and entering a room, I saw advancing towards me an old man, apparently of about seventy; his head was bald, but his step was firm and elastic; his eye was undimmed and his face unwrinkled; he rapidly approached me with both hands extended and gave me a real, hearty, *German* welcome. [I never could become accustomed to that German *kissing* salutation. It suits well enough for ladies, but for two gentlemen and they often with enormous mustaches, to be hugging and kissing each other did at first seem to be *outré*.] This was *John Jacob Sturm*, who for fifty years has been a zoological engraver, author, printer and publisher. His name is known wherever entomological books are read, for it frequently occurs in all publications relating to that science. He is entomologist, ornithologist, mammalogist and botanist. He has written, engraved, printed and published books on all these sciences and all executed by his own hand. He is a plain, unpretending old man, and does not appear to feel that the scientific world is so deeply indebted to him. He did not even tell me that the University of Breslau had but recently conferred on him a distinguished honor on the occasion of the *fiftieth* anniversary of his Zoological career. We talked of his writings and his collections—of our numerous exchanges and our correspondence,—of the American *Fauna* and American entomology, in particular. I examined his extensive collections and spent three days most delightfully in the society of this excellent old man.

But the father is not the only naturalist of the family. His two sons are following the footsteps of their celebrated sire and are fast rising to eminence. They have lately published a work on birds, the figures of which are engraved by themselves, which has attracted much notice in Europe. These three men live only for Natural History. They all reside in the same house, and the brothers have married sisters, so that they are altogether intimately connected.

The sons have a large museum which is exhibited for pay, and which is particularly rich in ornithology. They have the largest collection of humming birds, I saw any where in Europe. One of the sons has a unique collection of shells, with the living animal most wonderfully imitated in wax. They are placed on a leaf, or bark of a tree, and look so natural, that you wait to see the animal drag its calcareous domicile along. This family of *Sturms* possesses extraordinary artistic talents

and long may they live to promote the study of Natural History in their own and other lands.

Near the University edifice in Halle, there stands a fine, large, new building, which I approached on the afternoon of May 9th. The servant ushered me up stairs, and in the room to the right, I saluted a tall, well formed gentleman of about thirty-six. He had a fair, even florid face, light hair, and handsome symmetrical features. He was dissecting the intestines of a new species of monkey, which was lying on the table. Around him, were scattered all the implements of his profession; knives, books, plates, drawings, specimens and all the accoutrements of the naturalist. This was *Burmeister*, the author and Professor. I mentioned my name and that was enough. He received me most politely; threw aside his work, though the soft material, he was dissecting, was already drying too fast. He had sent me one of his most valuable books a year before, and we had exchanged some letters. We were soon in an animated conversation, and an hour passed rapidly away. We inspected the museum of the University and his magnificent collection of *Lamellicom* beetles, of which family alone, he has nearly four thousand species. He has written a work of two large volumes on this family, which will add to his already extensive reputation. He kindly presented me with the second volume, the first he had sent me before. *Burmeister* is a man of fine talents, and well deserves, as he expects soon to receive, a higher promotion in University office from his king. He has one advantage over most German professors: he married a *rich* wife and his father-in-law, a wealthy merchant of Hamburg, who has spent thousands of dollars in collections of specimens and books of Natural History, very tenderly cherishes the Professor, of whose talents and reputation he is justly proud.

On the same day, I wormed my way through a narrow, unclean street of Halle, near the hotel of the Crown Prince—[not the residence of a royal personage, but the tavern of that high sounding name] and ascending a flight of stone steps, I rang the bell. A young man came out, and before I had time to ask a question he thus addressed me: “vous etes un etranger, monsieur, et peut-etre un mineralogiste!”—“non, monsieur, je suis un entomologiste, et je desiré a voir le Professeur.” “Ah! un entomologiste; entrez, Mons., entrez—Je suis bien heureux a vous voir: mon oncle viendra bientôt.” He took me for an Englishman and presuming I did not speak German, addressed me in French, as every educated Englishman is expected to understand that language. I entered and the young man announced himself as Dr. Schaum of Stettin. He is the editor of an Entomological Journal and

the author of several valuable publications in this branch of science.—He had just returned from Paris, and had brought with him a large part of the splendid collection of beetles which formerly belonged to Gory, a celebrated *Savant* of France. Here was a rich treat—I enjoyed it to the full, when presently, a tall, portly, and coarse featured gentleman of fifty-five entered. This was Professor *Germar*, the man whom I had gone to see. For many years, he has been one of the most diligent and successful cultivators of Entomology in Europe. His books and papers in the various journals are numerous and valuable and he has described a large number of our American insects. He is professor of *Mineralogy* in the University, but is especially distinguished in Entomology. His nephew, Dr. S. had presumed I came to see the Professor of *Mineralogy*, and hence his first question, but he soon found out that it was the man, not of *stones*, but of *bugs*, to whom I had come to pay my respect.

I will not tell how long I remained with these men. I was delighted with their urbanity, and filled with admiration of their extensive zoological attainments. Yet they are both unassuming men, but from familiar conversation of a few hours, you can tell what a man knows, especially, if Yankee-like, you constantly ply him with searching questions. We entered into a mutual compact of friendship and scientific relationship, and letters from both of them, since my return, accompanied with valuable mementos of the 9th of May, attest their intention to perpetuate the agreement.

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 SPECTRUM FEMORATUM.

Messrs. Editors: Allow me respectfully to say to Dr. Hiester, that the insect of which he speaks in the last No. of your Journal is not the *Phasma Rossia*.—F. That is an European species exclusively and never occurs in this country. Cuvier's or Latreille's (for he wrote the entomological portion of the *Regne Animal*) description of *Phasma Rossia* is perfectly correct, but it does not suit our insect. The species which the Dr. so well describes, and of the ravages of which he gives such an interesting account is *Spectrum Femoratum*.—Say. He will find a good figure of it in Vol. III. of Say's Entomology. For the benefit of your readers who may perhaps be sufficiently interested in the subject, I here transcribe Say's description.

*Male*. Body greenish brown, without any rudiment of hemelytra; head yellowish with three dilated fuscous vittae; antennae brown; anterior thighs unarmed, simple, bright green; tibia dull green, tip and tar-

sus testaceous ; intermediate thighs dilated, angulated, pale ochreous, annulated with brown, the inferior angulated lines slightly serrated ; a prominent, piccous, acute, robust spine beneath near the tip : tibiae greenish, slightly serrated on the inner side : tarsus testaceous : posterior thighs brownish, ochreous, with a prominent, piccous, acute, robust spine near the tip beneath.

*Female.* Body cinereous, more robust than that of the male : thighs nearly equal : intermediate and posterior pairs with the subterminal spines very short."

I presume the Dr's. will be found to be this species ; if it is not, then it has never been described, and he should write out a full description, give it a name and publish it in the Journal. The insect Say describes is by no means common, and its occurrence in such immense numbers at one place only adds another to the already numerous wonderful and interesting phenomena in the geographical distributions of insects.

J. G. M.

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ON READING. NO. II.

"Nothing, in truth, has such a tendency to weaken not only the powers of invention, but the intellectual powers in general, as a habit of extensive and various reading, without reflection."

DUGALD STEWART.

Indulgence in miscellaneous reading fosters bad habits : and the immense number of publications of all kinds, thrown in our way, renders us liable to this indulgence. Under *miscellaneous reading* are to be included not only *works of fiction* distinctively, but also that *light reading* which so much abounds in our numerous periodicals, and their multitudinous articles of a somewhat graver tone. Or to express still more fully our meaning by indulgence in miscellaneous reading is to be understood a habit of reading miscellaneously, and the assertion is, that this is productive of bad effects.

It would be very unwise indeed to object to the reading of *Periodicals*. At this day, the man, or the boy, who never looks into a newspaper or magazine will find himself far behind his fellows in much that is valuable, and which he is bound to know ; and will be sadly deficient in one of the characteristics of an intelligent citizen. But he who makes them his chief reading will soon find that he is wasting time that might be profitably employed, and will acquire a disrelish for that which is of a more solid and permanently useful character. Whatever value many of the articles may possess, their great variety will prevent proper reflection, and the eye will soon learn to run over a page, and

take in the words while the mind makes scarcely an effort to grasp the thought. This we all know is eminently the result of *novel reading*, of which more will be said hereafter. But it is also the result of general miscellaneous reading: that is, the reading of a great variety of articles on different subjects, or a great number of various books without connection, and without any definite plan. Such a course has a direct tendency to weaken the power of attention and fixedness of mind. Such a variety and quantity of subjects passing rapidly before the mind, distract it, and prevent its giving proper attention to any—and thus is created a habit of careless and profitless reading.

To this source, without doubt, is to be attributed the waste of much mental power. Very wrong ideas are entertained on this subject, and encouragement is given to the evil by false, or injudicious admiration. Men are praised for being *great readers*, that is, readers of a great number of books. People seem not to know, or if they know, to forget, that one good volume carefully read, thought over and well digested, is worth a library hastily skimmed, or swallowed whole. There have been men, Dr. Johnson, for instance, who could read hastily and throw a book aside with but a glance, and yet by that glance have made themselves masters of its contents—and all who are *Dr. Johnsons* may do the same. We do not find fault simply with reading a *number* of books. If you can read twenty books as they ought to be read, certainly it is better than reading one. But it is because in attempting to read twenty, not one is properly mastered that the evil ensues.

It is somewhat amusing and interesting to observe various traits of character with reference to this subject. Some men have an irresistible appetite for books: and seize upon all within their reach. And when this appetite is connected with a superior mind, and excellent memory, there will inevitably be much gained from what is read. We have met with such a man; who at a very early age had read hundreds of volumes of every variety; and he had garnered up much of their beauty and richness, and all his writings and speeches sparkled with jewels thus gathered. Yet his was a case which finds few parallels: and even he, we fear, will be found to fail in that which requires strength of mind and independent thought.

Some are ambitious to be called great readers, and so they acquire a slight acquaintance with many authors for the sake of talking *about* them.

Others, again, read for the sake of *quotations*. Take up the writings of one of this class, and you find it full of quoted beauties, a sort of Anthology, if he has any taste—a literary Mosaic work, in which his own weak thought scarcely affords ground for the inlaid pieces.

The effects of this superficial mode of reading are also often curiously exhibited, in the manner in which such readers speak of various authors. You may readily conclude that they are but mere skimmers of the page, from the flippant, and pointless criticisms which they pour forth with so much confidence. For modesty is associated with true knowledge; and this expresses its opinion with firmness indeed, but in such a manner as to show that it speaks on sure ground and not at random. Thus have we heard bold and magisterial criticisms on Burke and Demosthenes, by one in his teens, whose acquaintance with the latter extended to a single oration, as set forth in a recitation room. "I can't see much in Shakspeare, nor become interested in Milton"—was said by one whose reading had been of the kind under censure. And no wonder; for Milton and Shakspeare are not to be won by a hasty look and cold bow. If you would have them disclose to you their worth, you must sit often by their side, as a careful learner. It is not indeed until the mind has acquired maturity, and taste has been cultivated, that you can enjoy their unfathomable streams of rich delight and profit.

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THE OLD BUCKET.

A WORD TO THE YOUNG—BY A TEACHER.

For the encouragement of students of every class, let me remind you, that there is no mind so defective or so peculiar, that it may not find ample work to do in the world. Some of you, are richly endowed with natural abilities; and education is for such an easy task. The mind of genius comes to us already fashioned like a golden vase or classic urn, pictured all over with figures of beauty, and adorned with images of the chastest fancy. The waters of the Pierian Spring seem to find in such an urn a fit receptacle. And then we have too, vessels of the homelier sort—some of brass, and some of iron—not so elegant indeed as the others, but of ample power to collect and retain all knowledge that may be reached by talent. These classes however do not yet include the whole. The educator of youth often meets with those whose limited faculties almost cause him to despair. But is instruction then to be conferred only upon the brilliant? Assuredly not! On Christian principles, we are bound to make the best use we can of our materials, whatever they may be. With proper efforts, we should not despair of success, even for the dullest. Although (to carry out our illustration) his mind may be nothing better than "an old oaken bucket"—yet even so homely a thing may be applied to valuable uses.

We may have seen such an old bucket thrown neglected on the ground—its timber warped by the sun—the seams gaping open—the hoops loosened and just ready to fall off: so that in ordinary times we should hardly stoop to pick it from the ground. Now, imagine yourself thrown beside a well in a thirsty desert. Parched and weary, you look around for something in which you may draw water, to allay your thirst. No suitable vessel is at hand. You begin to murmur—almost to despair. Suddenly however, you espy at a distance a crazy old bucket, such as I have just been describing, and you attempt to use it. At first, the cool clear element drips through it as from the sieve of Tantalus—and when it reaches the top of the well, it is entirely empty, or just moist enough to increase your thirst!

Shall you at once despair? Will you fling away the old bucket because it is not all that it might have been? Be very cautious! Everything may depend on another effort! At the second trial, you are encouraged to try again. You persevere. At each repetition, the seams are swollen together—the cracks diminish—the hoops tighten—and finally you are able, with so poor an aid, to quaff delicious water from the bottom of the well!

The application of this illustration must be obvious. Some of you may store learning in golden vessels—others in those of brass or of iron—but no one is so utterly destitute, as not to have at least “the old oaken bucket.” In our first attempts to learn, the mind may have so little power of retention, that knowledge will escape from it as from the chinks of a leaky vessel; but if we continue to pour in daily a fresh supply, the capacity to retain will improve more and more the oftener and the more severely you task it.

For my own part, I think that every boy is an object of the deepest interest; for the simple reason, that no one can tell what he may be hereafter. We are apt to imagine that it would have been very delightful to have talked with Milton, or Shakspeare, or Walter Scott, in the days of their boyhood; for we cannot help believing (if not that a luminous halo played around their foreheads) that at least some strong indication of their future glory must have distinguished them in early years. But their biographies indicate rather the reverse; and it is highly probable, that, if we could have visited the schools in which those men were educated, and had been permitted to select from the crowd those youths whose appearance and conduct gave the surest promise of greatness, we might have chosen one who was destined to make the keen attorney or the shrewd man of business, and entirely overlooked.

as below mediocrity, those master spirits who have now proved their capacity to move the world.

How careful then should the teacher be, not to despise the mystery of boyhood; for who knows what, in any given instance, may be the hidden germ which has not yet budded into life! And how much is it the interest as well as the duty of every scholar not to fold his talent in a napkin, lest the gift which in his folly he has neglected as the veriest pittance, might have proved a richer treasure than the untold wealth of Eastern kings.

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*Rev. Dr. Bethune's Oration. Yale College.*

The author of this address is an admired minister of the Gospel in one of the churches of the city of Philadelphia. His reputation as a pulpit orator is very high, and he has, on more than one occasion, appeared before the public with literary addresses, which have obtained for him the highest award of praise that accompanies successful efforts of this description. The address before us takes its place amongst those which have issued from his pen, and challenges attention both on account of the celebrity of the orator, and the fame of the school before whose literary societies it was delivered. It has been before the public more than a year, but deserves to be rescued from that oblivion into which such productions so speedily pass. It deserves our commendation, not because it was asked for publication by the societies before which it was delivered, not on account of the favorable reception it has met from the newspaper-press, though we feel no inclination to undervalue their judgment, which in the absence of proof to the contrary we are bound to consider intelligent and just, but because of the solidity of the matter and the tastefulness of the attire in which it appears. In this, as in other performances, Dr. Bethune evinces his classical predilections, and displays an uninterrupted intercourse with the writers of Greece and Rome. It is worthy of notice, when any one engaged in an arduous and laborious profession, (and what more so than the Christian ministry, when its duties are conscientiously discharged,) resists the temptations, so effective with many, entirely to lay aside the perusal of the master spirits of the past, those especially who have earned for themselves the honored appellation of "Classics."

Detaining our readers too long from the Oration itself, which we design to notice especially for the benefit of that class of persons to whom it was more particularly addressed, we announce its subject as "Study;" one, the importance and adaptedness of which to his auditory, will not



admit of doubt. Most willingly should any young man and every young man listen to him who, his senior in years, successful in the pursuit of knowledge, professionally distinguished, refined in taste, and steeped in general erudition, is willing to instruct him in the mysteries of study, open to his view the path to learning and whatever advantages she bears in her train. No doubt can be entertained, that the want of enlightened views on this subject has arrested many an ardent youth in his onward progress and induced him to sink down into indolence and inaction. Some too who have persevered in their efforts have missed the goal by injudicious and ill-regulated exertions.

It is to be presumed that some of us who are neither young nor entirely unsuccessful in the acquisition of truth, would be willing to learn how some minds have achieved their astonishing results and distanced so effectually their competitors. The arcana of study, of profitable study, have not all yet been revealed, and the man should be hailed with gratitude by every one, who skilled to instruct, openeth his mouth, and teacheth. The author feels the weight of his responsibility in discussing his subject, and bespeaks indulgence from his "public." Study, is defined, "in its wide meaning, zeal in acquiring knowledge of any kind, by any method." This definition does not strike us as particularly discriminating. By the term *study* is ordinarily understood the application of the mind to truth for the purpose of mastering and retaining it. It is zeal that animates in the pursuit and urges on to the acquisition. We discern that the Doctor's object is rather to point out a particular sphere of action to the studious than to analyze the elements of study, and to exhibit the processes adopted in it. Selecting for himself this course, he leaves to others the Sciences strictly so called, and addresses himself to "letters, especially, letters which reveal the experience, the taste, and the mind of antiquity."

What should we study? Study, says this Christian orator, God, in his word and in his works—study man. Of the Scriptures, he speaks in the following terms: "the style of the Scriptures is not bare and meagre. Simplicity of narrative, pathos and grandeur of description, eloquence, argument, philosophy, poetry, imagery, apothegm, maxim, proverb, are all there; and each inspired writer has a genius, with correspondent manner, peculiar to himself. Study of the Bible awakens taste for letters, and sanctions by infallible example, a cultivation of those arts which the scholar loves, for the delight and power they give him."

Of the works of God, he discourseth thus: "God teaches us by his works. He has not formed them after the narrow scheme of a misno-

mered utilitarianism. There are the rugged, the barren, and the dreary, but how far excelling in number and extent are the graceful, the changeful, the wonderful and the bright! How lavish has he been of trees, and shrubs, and herbs, and flowers, moulding their anatomy and painting their leaves with infinite skill! Mountain and valley, hill and dale and plain, forest and meadow, brook and river and lake and sea, combine their contrasts to adorn the fruitful earth for the dwelling of its innumerable tribes. Above us, the clouds, dark, fleecy, or gorgeous, of every shape, sweep over the face of heaven, or hang around the horizon, or passing away, leave the blue vault magnificent with the garniture of sun and moon and planet and constellation. They all have their uses; but is their beauty, with our faculty to perceive and to feel it, of no use; an extravagance of the Creator, a profuseness of bounty, from which we must abstain in a self-denial more prudent than the kindness of God. Let the cold, dull plodder, who, intent on his creeping steps, fears to look up and delight himself in that which God delights in.—Study the lyrics of David, the rhapsodies of holy prophets and the illustrated sermons of his Lord.” Amongst the studies prominently set forth in the discourse are the ancient classics. The views expressed on this subject, are unexceptionable and cannot be plausibly gainsayed. Gladly would we adorn our pages with extracts from the rich and graceful expositions on this topic but we are admonished by our limits to abstain. A single passage must suffice: “Who will challenge the services of Luther, profoundly versed in ancient wisdom, and Melancthon, (*ille Germaniæ suæ magister, omnis doctrinæ præsidio instructus, divinis humanisque literis ornatus,*) whose eloquent exhortations to the study of the classics have accompanied the Augsburg Confession to us; of Calvin and Rivet, whose Ciceronian periods enchant the scholar as much as their matchless divinity edifies the saint, of Zuingle, an editor of Pindar, and Piscator, a translator of Horace; of Grotius, teacher of all moral science, and the Elder Vossius, worthy of being named with his great compatriot, of Owen, Baxter, and Howe, each thoroughly bred to the use of books; of Matthew Henry, whose apt quotations show a stretch of reading which, from his modest quaintness, we might not otherwise have suspected, and Doddridge, whose style betrays early familiarity with classic models; of Lardner and Warburton, who heaped the spoil of the Gentiles in the temple of the Lord, and of many others not to speak of those in our own day and in our own land, honored alike by the erudite and the good? Was their piety, because of their learning, less active or less useful, than that of those who cannot take

a step in Christian duty, but leaning on their help? Can we be wrong in attempting to follow their examples?"

It is not merely by the study of books, whether ancient or modern, that knowledge is to be acquired. A mere devourer of books, (*helluo librorum*) is not the type of a true and proper man, our author being the judge. He recommends intercourse with our kind. Men are to be studied as well as books, and he rightly pronounces them, important teachers.

"It would," says he, "however be a grave mistake to draw knowledge only from books. Human nature, in all ages, is radically the same. Books help us to understand mankind, and intercourse with mankind helps us to understand books." Study is to draw its impulsive power from no mercenary motives. The aspirations of the scholar are to be lofty, noble. In decided terms, are they condemned who derive their excitement to literary pursuits from their digestive apparatus, and who would exchange their pursuit for another different in character for the paltry consideration of a little more bread. These are sterling views. They are the only proper considerations to push us on in the path of literature. Let his counsel on this point be well weighed—"The office of the educated is to be benefactors of their race. While we love study for its own sake, we should love it far more for the sake of the faculties it gives us to exercise the highest form of beneficence. Reputation for talent and acquirements, because it increases our power, may fairly be desired, and, within proper limits, sought. An intellectual laborer is not less entitled to remuneration for his work, than those who till the earth or ply the loom. Whatever in our studies, refines our taste, improves our manners, or quickens our sensibilities, is to be cherished, because, though the effect be not immediately seen, it prepares us for greater success when we attempt to do good. Yet usefulness to man for the glory of God, should be the student's ruling purpose. That alone can maintain in us an unconquerable courage, lift us above the dangerous temptations within and around, and purifying our thoughts from selfish and sensual defilement, sanctify our understanding for the eternal sphere, where charity never fails, though tongues shall cease and knowledge vanish away. The heart, not the reason, is the most noble part of the soul."

The sound moral and religious tone which pervades this address renders it worthy of high commendation. Sound in its philosophy, it is beautiful in its morality, because that morality is pervaded with the doctrines of the cross. The maxims are good for the head, they are good for the heart. Let no one think that he can approximate the ex-

cellence of attainment held out to him without diligence and perseverance. It is not the idler, the triler, the young man who wastes his time in unprofitable society, who shuns close application that will win the prize—*the race is to the swift, the battle to the strong*. It is not for a moment to be supposed that our author inculcates the undue tasking either of the mental or physical powers. He ministers sound lessons of a different character towards the close, and then, with a solemn appeal, calls on his hearers to act, and concludes in a spirit the most serious.

“In a little while, the fashions, the riches, the empty pleasures, and the tinsel honors of this life, will have passed away. We can carry with us into eternity nothing, of which the soul is not the treasury.

We shall never all meet together again in this world, but we shall meet before the Judgment. Then may each of us be able to present through the Intercessor, something done by his grace, worthy of our immortal powers, useful to our fellow men, and glorifying to our Maker! God bless you?”

In terminating our hasty notice of this instructive oration, we desire, in no spirit of undue adulation, to direct the attention of young men to it, convinced that they will derive from it useful instruction, that its precepts will tend to enlighten their heads and purify their hearts, and satisfied that its gifted and honored author desires no other reward, than such results in such minds.

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*Central Sun of the Universe.*—Prof. Mädler, of Dorpat, from a comparison of catalogues of stars since the time of Bradley, concludes that the Pleiades constitute the central group of the system of stars which compose the Milky Way, and that Alcyone, one of that group, is the *central sun*, about which our sun with its attendant planets, and the whole mass of stars which sparkle in the vault of night perform their revolutions. The time of one revolution of our sun around Alcyone he estimates at 18 millions of years. Prof. Schumacher entertains doubts as to the correctness of these conclusions.

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Our readers will find a full and valuable paper on the anatomy of the *spectrum femoratum* in the July and August No. of the Proceedings of the Academy of Natural Sciences of Philadelphia, by Dr. Leidy, who has with much patience and skill completely *anatomized* this animal.

# Pennsylvania College, Gettysburg, Pa.

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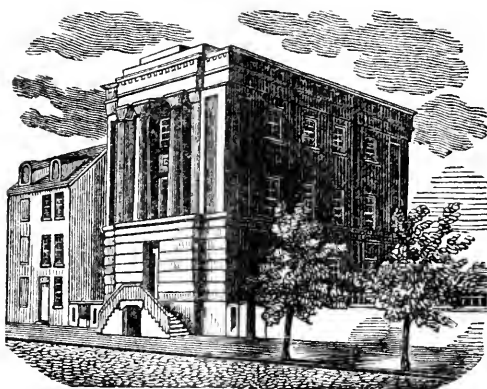
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## Donation to Library.

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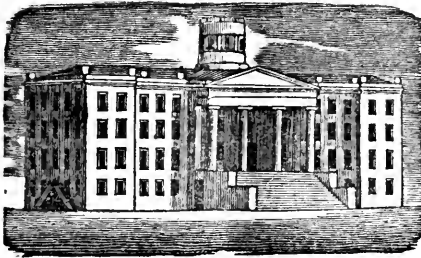
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Of the Linnaean Association of Pennsylvania College.

JANUARY, 1847.



CONDUCTED  
 By a Committee of the Association.

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LOOSE LEAVES FROM MY JOURNAL. NO. III.

BY J. G. M.

There are queer fish in all waters, and queer men in all lands. We need not travel abroad to find extraordinary specimens of eccentricity, but I met with one in a foreign country who is certainly worthy of a description in the Journal. He is a naturalist withal, of no mean reputation, and as such is particularly entitled to a distinguished notice in your pages. I will not mention names, for most of your readers would not know him, and although he himself would feel honored by this distinction, yet I dare not be more specific. The following leaf from my journal will explain the whole.

July 1. To-day I called on my old correspondent Herr ex-ober-Lehrer M. His letters had shown that he was a singular genius, and I expected to see a genuine *original*. I prepared myself for fun, and imagined I should see a decrepit old bachelor living in a garret, that was a stranger to the broom, with cobwebs for window curtains, and two rickety, invalid chairs for a sofa. I mounted three tall pair of stairs in F—strasse, and knocked at the door of the eccentric naturalist. No answer was given and leaving my card I retired. I had not been gone two hours, before I received at my hotel, two large foolscap sheets written full, by way of regret for his absence. He deplored it in most dolorous terms—he regarded it as one of the most unfortunate events of his life,—it added another to the numerous pangs that were daily tormenting his heart—he did not think he could sleep that night—and a long series of reiterated lamentations. He then branched off into a disquisition on some points of Natural History and asked me a number of questions about the *pigeons* of the United States, stating that he was writing a monograph on the *Columbidae*,—he also inquired whether the *partridges* of America had truncated tails, and of how many feathers,

the tail was composed?—he wanted to know my opinion about the gestation of the opossum, and whether we had more than one species of rattle-snake?—and finally wound up with an invitation to dinner next day at five o'clock. I went. Imagine my surprise at seeing a man of forty, punctiliously dressed,—his room a very pattern of neatness,—his bed as clean as a new washed shirt—his furniture, if not splendid, yet showy and glistening with varnish and wax,—his pipes hung around the walls in perfect order—and every thing betokening the man of precision and system. He rushed up to me like one *possessed*, he would have kissed me, if I had let him—he reiterated his expressions of regret at his yesterday's absence and drew up two chairs for me to sit on.—He immediately took down two pipes which were perfectly innocent of the odor of tobacco and filled them for me,—he capered about the room as if under the influence of nitrous oxide gas, until I begged him to be composed and he finally sat down just in front of me and as near as he could get. Then began the conversation. I asked him why he had not sent a box of *Naturalien* in return for one an American friend had sent him? He said he had, but that it came back to him again: and on further inquiry I learned that he had forgotten the name of the gentleman, but he thought it was *Herr Fidler* and so directed it;—secondly, he had forgotten whether to send it to Bremen, Hamburg, or Lubeck for shipment, and finally, that he had just sent it off by the public coach, leaving it to take its chance, just as sailors throw a bottle overboard at sea, without any particular designation!! No wonder it was returned to him.

He told me he soon expected to receive a Professorship, and walked about the room in ecstasy at his prospect. It seemed as though he was already preparing to go, and I asked him when he expected to set out for the University. "Ah!—said he—I hav'nt got the appointment yet—*ein gewisser Herr muss erst sterben!!!*" He was reckoning on the death of a Professor who is likely to live as long as himself. He informed me that he was about embarking on the tempestuous sea of politics and thought it was perfectly consistent with his zoological researches to write on political economy. He said he was preparing a pamphlet that would make the government tremble, for he could endure the outrageous oppression no longer without uttering his sentiments. I besought him to abandon the project, for he would get himself into trouble; no!—he would be a politician and was determined to sound the trump of alarm and call on the people to assert their rights. From his representation of the vast importance of the matter, I thought that his Majesty's ministers might well tremble for their safety and that the throne

itself might not consider itself too firm. And what was the oppressively momentous subject on which this new candidate for political distinction was going to write and shake the throne? Why, the government had lately thought of *taxing caged nightingales*, and he was determined to let fly his artillery at them double-shotted!! The blood rushed to his face as he told me, and he was fiercely excited. He conceived it to be an intolerable oppression which could not be submitted to. I was suddenly seized with a fit of coughing, which I attributed to the tobacco smoke, that now densely clouded the room, for he puffed with double vigor whilst he was telling me the story of his wrongs, and I rolled out the volumes more vehemently than usual, to prevent a more hilarious explosion.

This gentleman is at present preparing a new edition of Cuvier's *Regne Animal*, with copious notes and a new translation. It is a profoundly learned work and displays an extraordinary acquaintance with every department of Zoology. A considerable portion of it is already printed and this he kindly presented to me. The notes are four times more voluminous than the text, and I think he will be in full possession of his expected Professorship before he finishes it, for I have no doubt, it will require many long years of laborious research, if he continues to be as prolix as he has begun. In return for this favor, I gave him a scientific trifle of my own which had appeared in one of our Journals, and he was so overwhelmed with gratitude, that he rose up, grasped my hand and thanked me a thousand times, for the gift! I did not know whether I should laugh or cry.

These are but a few of the numerous queer incidents that occurred during an interview of several hours. I shall not soon forget my visit to the eccentric naturalist. I left him with regret, having really conceived a strong attachment to this very singular man. Next day I received a letter of *four* sheets, in elucidation of certain points discussed the evening before and specifying certain *desiderata* of our Natural History. It comprehended the whole *Fauna and Flora*—he wanted every thing the country produces, and if I could send him but a fourth of what he asked for, he would have a very respectable Museum of American Zoology.

I admired the man's talents and acquirements—and pitied his infirmities. He has many admirable qualities and is really an entertaining companion,—*so lebe wohl Herr ex-obcr-Lehrer M.*

## PHILOSOPHY OF STORMS. NO. V.

BY PROF. W. L. ATLEE, M. D. PHILADELPHIA, PA.

From what has heretofore been said, it will now be readily understood that whenever the temperature of air is reduced down to, or below its dew-point, the condensation of its vapor into water must be the result. This condensation, too, is just in proportion to the reduction of temperature, and is calculated in the same way as the quantity and tension of the vapor. If, for instance, a certain bulk of air, say the air in a room, could, by any circumstance, be suddenly reduced below 60 degrees, the assumed dew-point, a portion of the vapor would be condensed into water, and a cloud or fog would be the result. If the thermometer would fall 20 degrees below the dew-point, one-half of the vapor in the room would be reduced into water; if it would fall more than twenty degrees, more than half the vapor; if less than 20 degrees, less than half; and thus the deposition would vary with the temperature. This was beautifully illustrated by Professor Espy, by means of an instrument called the Nepheloscope. This instrument consists of a bottle or glass receiver, having a stop-cock fastened into its neck, and also a barometer-gauge, resembling an inverted syphon, communicating with its cavity. By means of a condensing syringe, Prof. Espy condensed an equal bulk of air into the receiver, and the mercury in the syphon-gauge was observed to rise. After the equilibrium of temperature which had been destroyed by this operation, had been restored, he applied a measure carefully to the barometer-gauge to ascertain how much higher the mercury stood in the outer leg than in the inner, and then turning the cock, he again permitted the air to escape, and the mercury was seen to fall suddenly to its original level. He now quickly turned the cock again, cutting off all communication with the external air, and the mercury began to rise again and remained up, because the air within received heat from without, and the difference of level being measured as before, this indicated the number of degrees cooled by a given expansion. In this experiment, the air, condensed within the receiver, was permitted to escape, while the remaining half, by its elastic force, expanded and filled the receiver. In consequence of this expansion a great deal of cold was produced, and this rapidly condensed the vapor in the air into a dense cloud, which was plainly seen from every part of the room. At the moment the air flies out of the receiver the air within expands, and the amount of this expansion is indicated by the extent of the depression in the gauge, while its subsequent rise enables us to calculate the exact amount of cold produced by the expansion, and also the amount of vapor condensed by the cold. Another

instrument was employed by Professor Espy by which he could get the temperature below or above the dew-point in quick succession, and thus make and unmake cloud almost in the same instant. This was merely a strong glass tube with a piston, originally constructed for igniting tinder. By drawing back the piston, expanding the air, and thus reducing the temperature below the dew-point, cloud was formed; and by pushing in the piston, condensing the air, and thus elevating the temperature again above the dew-point, the cloud disappeared—proving not only the *rationale* of the formation of cloud, but also that the quantity of vapor is proportionate to the temperature. All clouds are formed in nature in this way, whenever the air is caused to ascend high enough to reduce its temperature down to the dew-point; and the cloud becomes denser and denser as the air continues to ascend above its base.

Now when vapor in a gaseous state is cooled to a point sufficiently low to convert it to water, it parts with its heat of elasticity, which is set free or becomes sensible. This heat of elasticity, or *latent caloric*, as it is more frequently called, is contained in large quantities in vapor, and it is given out or rendered *sensible*, whenever the vapor or steam in the air is condensed into cloud. The heat, therefore, which begins to be discharged at the base of the cloud, must change the rate of cooling in the up-moving column, from the base of the cloud upwards, from that which exists from its base downwards. If, however, the up-moving column of air were free from vapor, then the ratio of cooling would not be affected; but the nephelescopic experiments have shown *that so soon as an ascending column of vapor is condensed, the law of cooling in its upward motion is changed, by the heat set free, from a degree to about half that quantity for every hundred yards above the base of the cloud*; that is, about five-eighths of a degree for one hundred yards of ascent, when the dew-point is about 70 degrees. If the dew-point is higher, it cools a little less, and if the dew-point is lower, it cools a little more than five-eighths of a degree in ascending one hundred yards. Now as it is known that the atmosphere, free from clouds, on the outside of the ascending column is colder about one degree for every hundred yards in height, and the ascending column itself becomes only five-eighths of a degree colder for every hundred yards above the base of the cloud, it is plain *that the dry air on the outside of a cloud must be nearly double as cold as the moist air within it*, and it follows *that the cloud must be of a less specific gravity than the surrounding air at the same height*. If the top of a cloud, therefore, be six thousand yards higher than its base, the air outside of its summit must be twenty-two degrees colder than the air in the cloud; if it be eight thousand yards higher, it

will amount to thirty degrees, and thus the difference, within certain limits, will be in proportion to its height. The specific gravity of a cloud, also, of any height, compared with that of the surrounding air at the same elevation, may be calculated, when the dew-point is given; for its temperature is known by experiments with the Nepheloscope, and the quantity of vapor condensed by the cold of diminished pressure at every point of its upward motion, and of course the quantity of caloric of elasticity given out by this condensation is known, and also the effect this caloric has in expanding the air receiving it, beyond the volume it would have if no caloric of elasticity was evolved in the condensation of vapor. It will readily be perceived how the respective specific gravities of two bodies of air will be affected by their difference of temperature, and how, apart from other powerful causes, the barometer is caused to fall by the great expansion of the air in consequence of the immense evolution of latent caloric, and that, too, in proportion to its height. It will, also, be perceived how the heat, which is set free in the cloud, must accelerate the velocity of the upward motion, and communicate to the storm a steam power of great force, also proportionate to its height.

If, therefore, we know the temperature of the air, and that of the dew-point, we can calculate from the laws already laid down, the height of the base of the cloud, the amount of the vapor deposited there, the temperature and amount of vapor and its elastic force above the base, and the quantity of rain it must discharge. It certainly is most beautiful and surprising, that the thermometer, which was invented merely to ascertain the temperature of bodies, should reveal so much!

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THE AGE OF PERICLES. NO. I.

Thucydides informs us that the ancient Grecians were a rude and warlike people, subsisting mainly upon the booty taken from their neighbors. In the progress of time, they united their scattered habitations and built cities, locating them for the sake of security on peninsulas, and surrounding them with walls. Gradually the unwalled towns and feebler cities yielded to the invasions of the more powerful, and being united to them, constituted what might be called the first form of empire. In this state of affairs, the Trojan war occurred. The ten years which were spent in this memorable siege would naturally produce, in such unsettled times, very important changes. Conquests were made at home, as well as attempted abroad; and many of those who rushed into the contest at the summons of Agamemnon and burned to

avenge the sacred rites of violated hospitality, were compelled on their return to seek other lands and other cities to dwell in. Thus the Grecian name and knowledge and enterprise were more widely diffused. Up to this period, the form of government seems to have been regal with limited powers. Now, however, after the disasters of the capture of Ilium left upon the mind a deep impression of the miseries of war even when followed by victory, the arts of peace were sought and cultivated, and men directed their attention to the acquisition of wealth; for in all ages there appears, in unregenerate man, a thirst for a display either of the pomp of power or the splendor of riches. Wealth thus accumulated furnished leisure as well as occasion for the assumption of increased power. Thus factions were formed, and, tyrants springing up, there was laid the foundation for numerous tyrannies. Thus Pisistratus established himself in Athens, and, by a course of conduct at the same time humane and politic, handed down his power to his posterity.

Athens, from her position, rapidly became one of the most important cities in Greece. From the death of Codrus, the last king of Athens, who lived about the eleventh century before Christ, the form of government was continually tending more and more toward a pure democracy. Whether this is to be ascribed to their increased intelligence, or to their addictedness to the sea, or to their peculiar character and circumstances, I will not presume to determine; perhaps all contributed something to the attainment of this end. Perhaps more than all those causes mentioned was their experience in hereditary Kings, from whom they were glad, in a suitable time, to be entirely freed.

The position of Athens, early in her history, gave her an advantage over many of her sister republics. The sterility of her soil and her commercial advantages naturally and necessarily directed her attention and efforts to the sea. Here she speedily excelled, and, once mistress of the watery domain, the numerous islands which bestud the Mediterranean and Ægean seas, were glad to acknowledge her power and shelter themselves under her overshadowing protection. A sterile soil and an excessive population gave occasion to the formation and establishment of colonies, and thus, like a goodly tree, her roots shot forth and derived nourishment from other soils, and her branches were nourished and bore fruit in other climes. These colonies, trafficking with the nations by whom they were surrounded, and making with their ships a highway to the mother-city, gave impulse to trade and laid the foundation in part of her future glory.

From the time of Solon, which was 630 years before Christ, until the death of Pericles, 404 before Christ, we have the most important

events in the history of this State. This period has been divided, not unaptly, into three parts. 1st, The age of Solon, or that of the laws; 2dly, The age of Themistocles and Aristides, or the age of glory; and 3dly, The age of Pericles, or that of luxury. These all are related to each other as cause and effect. Our object in mentioning them, is not to expatiate upon them, but, in a cursory manner, to show the steps which led to the last age, which is especially under consideration. The laws of Solon contributed mainly to the establishment of a regular form of government based upon fixed principles. Where there are no general principles to which actions can be referred and by which their character and influence can be estimated; and where there are no laws explanatory of those principles, there can be no regular government. The adjudication of causes must then be referred to the sword, and might must give right. Now the laws of Solon, even admitting that they were extremely defective and inadequate, would contribute very much to the establishment of general peace, and would direct attention to a more rational and easy mode of settling difficulties than that of the sword. It is not our intention to discuss the merits of the laws of Solon. It will be sufficient to state that from the time of the adoption of those laws, Athens was comparatively free from the confusion and misrule which had previously prevailed. Here then was laid the foundation of her future glory. It is true Pisistratus, who was cotemporary with Solon, by his eloquence and art succeeded in assuming the chief authority, which would not be very difficult with a people in a state of transition from lawlessness to the restraints of wholesome laws. Yet even he, we are informed by Herodotus, was wise enough to see the importance of maintaining the established order of things even for the security of his own person and power.

The laws of Solon gradually united the different conflicting interests and parties which formerly existed, at least so far as to submit to the government of uniform laws. Security for person and property was established. This furnished one of the most efficient *stimuli* to trade, both foreign and domestic; whilst the laws regulating the military furnished the best security for the protection of the city from foreign enemies. Under such a government, the Athenians aided their colonies in Asia Minor to throw off the yoke of a powerful neighbor and even to sack and burn his capital. Thus they gathered strength and renown, continually until, under Miltiades, they were enabled to rout the Persian foe at Marathon, and under Themistocles and Aristides to destroy the fleet of the most powerful monarch then known. Now the Athenian name was celebrated above that of every other Grecian name, and



Athens absorbed and diffused the glory of all Greece. Now she meditated not so much upon her personal security as her foreign conquests. She became arrogant and sought to give laws to others.

As the laws of Solon, by consolidating the government, and making it efficient, prepared the way for the conquests of the Age of Themistocles and Aristides, so the latter gave occasion to the introduction of the luxuries of foreign countries and furnished the most abundant leisure and means for their enjoyment.

The condition of Athens during the age of Pericles, which includes about a half century from the battle of Plataea to the memorable Peloponnesian war, is briefly given in the language of a distinguished historian, (Gillies): "A single republic, one of Sixteen States, whose united possessions hardly equalled the extent of Scotland, and whose particular territory is scarcely visible in a map of the world, carried on an offensive war against the Persian empire, and, though surrounded by jealous allies and open enemies, prosecuted this extraordinary enterprise with unexampled success: at length, granting such conditions of peace as the pride of victory may dictate and the weight of accumulated disasters condescended to solicit or accept. In that narrow space of time the same republic erected on the feeble basis of her scanty population and diminutive territory a mighty mass of empire; established and confirmed her authority over the extent of a thousand miles of the Asiatic coast, from Cyprus to the Thracian Bosphorus; took possession of the forty intermediate islands, together with the important straits which join the Euxine and Ægean seas; conquered and colonized the winding shores of Macedon and Thrace; commanded the coast of the *Euxine* power Pontus to the Chersonesus Taurica, or Crim Tartary; and overawing the barbarous natives by the experienced terrors of her fleet, protected against their injustice and violence, but at the same time converted to the purposes of her own ambition and interest, the numerous but scattered colonies which Miletus and other Greek cities of Asia had at various times established in those remote regions. Our wonder will be justly increased, when we consider that Athens obtained those immortal trophies, not over ignorant savages, or effeminate slaves, but over men who had the same language and laws, the same blood and lineage, the same arts and arms, in short every thing common with the victors but their audacity and fortune."

But the glory of Athens did not consist merely nor chiefly in her conquests and extensive possession. The arts of peace were no less industriously cultivated than those of war. Whilst her fleets rode in triumph throughout the length and breadth of the Mediterranean, they as-

siduously cultivated at home the arts of peace, and by the refinements of their domestic occupations, threw a softening influence over the asperities of war. We are prone, in perusing the history of the past, to fasten our attention and to gaze with admiration upon the glorious exploits of military chieftains. Battles, sieges and all the horrors of war lead the imagination captive, as if the human mind delighted most in the contemplation of blood and slaughter. We are very much mistaken if we suppose that the consequences flowing from the desolations of mighty conquerors are to be compared in the extent of their influence upon society with the arts of peace. The one is the result of brute force, the other of reason and intelligence. The one descends upon the earth like a tornado wasting and destroying every thing lying in its path. The other diffusing itself gradually, like the genial heat of the opening spring, pervades all classes of society, cheering and invigorating.

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#### ADVANTAGE OF RULES ON ELOQUENCE.

The nature of suitable *rules* to direct us in the study of eloquence, as well as our own experience, proves that they are highly important, and that without a knowledge of them, we can accomplish but little in that interesting and most beautiful art. But the nature of these rules and our experience, also teach us, on the other hand, that we may possess a knowledge of them, and yet derive little or no advantage from it. Apart from learning and genius, rules are of no advantage in the elaboration of a discourse, except it be to enable us to judge more accurately of its plan and arrangement. In connection with genius, rules are undoubtedly of great advantage; yet they cannot teach us their proper application; this must be managed by our own good judgment and taste.

Rules may even lead a good genius astray. They are general and imperfect, and not always necessary. Much is left for the writer or speaker who has even the most extensive knowledge of rules and directions to accomplish. Good rules on eloquence may be regarded as prescriptions of sound reason, which are founded on experience, and the nature of things. They are laws which arise from the nature of the art itself.

Our object in speaking or writing is evidently to convince and move the minds of men, who have precisely the same nature which we possess ourselves, and therefore our own understanding and feelings should direct us. Experience will show whether we have collected and invented the most appropriate matter, and whether it has been most successfully arranged. Our feelings will teach us how the subject must be

managed, if it would enlighten our understanding, afford us pleasure, and move our hearts in its favor. By adopting this view we can conceive of specimens of eloquence previously to rules on eloquence.—Men of deep penetration and great mind spoke without a knowledge of rules. They followed the path which good sense and their feelings pointed out, and by doing so became *models* of eloquence from whose examples rules have been derived. Eloquence therefore is more ancient than the rules on eloquence. But it may also be said that the rules are more ancient, for they existed and were present in the minds of great men, before they wrote or spoke, otherwise we would not find them in their works. Good rules on eloquence are not arbitrary principles, but precepts of reason and sentiment, which, if properly used, are of great value. To disregard rules altogether is to write or speak at random.—It is an attempt to attain the end, without employing means; and to have neither plan nor arrangement by which to cultivate and improve the mind. Can we reasonably expect to profit and instruct without observing the laws of order, perspicuity and profoundness? Can we please without gracefulness; or touch the heart without impression? Will it answer to depend exclusively upon the understanding or feeling for rules, whenever they are needed? Is it safe for us to argue that the rules are more recent than the works that contain them? But we should bear in mind that they were not discovered at once, nor by one individual; it was by long and tedious practice, by much experience, that they were discovered, tested and prepared for use. He, therefore, who rejects all rules and directions on eloquence, and will follow nothing save his own feelings and genius, presumes to accomplish himself, what many *chaster spirits* scarcely accomplished. But we may moreover ask, does he possess that genius which they possessed who discovered the rules of eloquence? Is he placed in those happy circumstances in which they were placed to make trial of his genius? Has he already the decision of the wise and the great in his favor? Suppose we could find the road to a distant country without way-marks; would we not be able to travel more safely and speedily by means of their assistance? Would it be wise to plunge into the stream, and pay no attention to the direction of those who have been taught by experience, the advantages of swimming, because the first swimmers discovered them without directions and at the peril of their lives? Suitable rules on eloquence teach us to please, to instruct, and to move; they give us the mode by which others have done so in the most successful manner; they are the echo of reason—the voice of nature, and as such are entitled to our attention and respect.

## YOUNG GENTLEMEN :

There remains of your matriculation oath "all kinds of gambling" together with "indecent, disorderly behavior." Before the authorities of the institution and in the presence of the Searcher of hearts you promise, on your truth and honor, to abstain from all kinds of gambling. "Play for something possessing value, or for money which is the representative of it, is gambling, in a definition sufficiently explicit for our purposes. Generically considered, it is a unit. There are various methods or instruments which are employed in play, and by which men gamble. Amongst these may be enumerated cards, dice, chess, backgammon, &c. The passion for play is one that is well understood. It has been so often developed and thrown before the observation of men, in its phases, as to have made it familiar to every student of the passions.

Its violent, furious, indomitable character, when formed, has often been manifested. The period of life which may be regarded as most exposed to this vice is youth. The period which needs most to be guarded is youth. Incapable of counting the cost, or of having "respect to the end," the young may insensibly glide from a play of amusement to one of a small stake, and then to the daring spirit of cupidity which risks every thing on the chances of a game. The habit of gambling easily formed, is broken with the utmost difficulty. Started in early life, it grows with us and cleaves to its victim with unyielding pertinacity. It forebodes evil and only evil. The fondness for play, most absorbing in its character, disqualifies the mind for all active effort. It awakens the expectation of gain, and affluence without labor. It spurs on to risks which incurred are followed often by the most fatal results. It is the fruitful source of crimes than which none blacker are found in the catalogue of human guilt. It is associated with deception, fraud, theft, robbery, murder, and has often, very often, been the cause of self-slaughter. The gambler and the seducer, the gambler and the licentious, the gambler and the profane, the gambler and the Sabbath-breaker are often found in the same person. So odious is this vice that it hides itself from the public gaze. The man who practices it, wishes it to be concealed. The word, that designates it, is associated with the most revolting ideas.

The gambler is despised, rejected of men, and the wealth, which he may possess, cannot wash away his hideous moral deformity, but it remains in the just judgment of right thinking and virtuous men. If this estimate should appear disproportioned to the offence, it will easily pre-

sent itself in a different light, if we take into consideration what is involved in it. It takes, or it aims to take the property of a fellow-being without rendering him an equivalent. It is a violation of the law of reciprocity. It cannot be reconciled with fidelity to that precept of the decalogue which says "*thou shalt not steal.*" It is hunted down by the legislation of every country whose moral standard is right, prohibited in many lands by enactments sanctioned by powerful penalties. It is scouted from society by the virtuous and good. The estimate made of it by all sound ethical writers is well expressed in the following citation from an eminent Scotch moralist: "The Gambler, therefore, is guilty of a direct violation of the law of God, in plundering the property of others, and reducing them to poverty and wretchedness; and proves himself by such conduct to be void of piety, benevolence, or humanity. He is a source of evil by his example, as well as by his actions; a corrupter of youth, stealing from them not their property only, but what is infinitely more valuable, their virtue and their happiness; and doing all in his power to prevent their retreat from the road that inevitably leads to present and eternal ruin. Gambling—to what extent of criminality and misery does it not lead its votaries? It opens up a way into the hearts of those who come fully within its influence, to the fiends of hell, to take up their abode and hurry them along to crimes of darker and still darker hue—to robbery and murder,—till at length the earthly course of guilt is often terminated by suicide, and the liberated spirit, utterly depraved, becomes the eternal associate of spirits as wretched and hopeless in depravity as itself. How much would be gained to the high interests of man, were this source of moral waste and destruction, which has turned many a youth originally generous, into an unfeeling seducer, a cruel and relentless oppressor, a fraudulent member of society, a remorseless assassin, a self-tormented and miserable suicide, entirely removed from our land and still more severely denounced by the strongest prohibitions and penalties of law."

In view of these most terrible results, not in the least exaggerated, your College imposes upon you, in great kindness, obligations carefully to abstain from every species of gambling. There would be a criminal neglect of your best interests if you were not guarded with all the vigilance that can be exerted against the formation of a habit so pernicious. With the oath prescribed bound upon your souls and aided by the religious and moral truth presented to you from time to time, the hope is entertained that you will go forth from her enclosures and pass away from her courts, untarnished by this foul offence. She cannot connive at infractions of her regulations on so important a point, and any severity

she can exercise in the ministration of her discipline will not adequately express her abhorrence of the offence, her deep solicitude for her sons, and her firm determination to do all that she can to keep them unharmed.

Would that every young man could duly appreciate the wisdom of those regulations which guard his access to the waters of destruction! Would that all could cheerfully submit to the prescriptions of wisdom, designed to preserve them from the most fatal maladies! Against this vice, then, in conclusion, whilst we point out the reasonableness of the requisition made of you, be warned. Let nothing induce you to take the first step. Touch not; handle not. Let no plea however insinuating, no consideration however captivating, lead you to make the initiative—for here, if any where, may it be said :

“ *Facilis descensus Averni :*  
*Noctes atque dies patet atri janua Ditis :*  
*Sed revocare gradum, superasque evadere ad auras,*  
*Hoc opus, hic labor est.*”

Your's, affectionately.

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#### REMINISCENCES OF STUDENT LIFE IN GERMANY.

As I threw aside the Journal this evening after reading the interesting article of your correspondent J. G. M. in which he draws to the life the portraits of some of his German acquaintances, I was carried back in imagination to the golden days of my sojourn in the land of meerschaums and thought. From the study of Burmeister, the parlor of Krug and the attic store-room of Erickson, to which *his* interest had led me, my thoughts soon wandered to the Kränzchen of Neander, the lecture-room of Tholuck, the English re-union in Halle, the pietistic Knipe, the Faekelzüge, Ständchen, Fechtboden, Museum, Comitât, &c. &c., the novelties, adventures, discomforts, &c., of three terms experience at German universities. How I happened to fall upon the idea of sharing the pleasure of such reminiscences with the readers of the Journal, need not now be told. Enough for me if some of them derive from these hasty sketches a tithe of the satisfaction their preparation affords

*A constant reader of the Journal.*

#### AN ACADEMICAL COMMUNION.

As we were sitting one day near the close of the winter session of 1842-3, in the largest lecture-room of the University at Halle, busily engaged in taking down the well polished paragraphs of Julius Müller's

system of Dogmatics, a paper was passed round from bench to bench, that was rapidly filling up with the signatures of the Herren Studiosi.— Wondering what the popular theme might be, I reluctantly withheld my pen for a moment and glanced over the heading of the list. Its purport was something like this: “Those students desiring to partake of the Lord’s Supper according to the statutes of the University in the — church, are requested to subscribe their names.” Signed

MARKS,

*Universitäts-Prediger.*

Now I at once perceived that a large proportion of the names on the list before me were those of young men who made no pretension to piety and the idea of communing with such was repulsive to me.— Had I followed the impulse of the moment, I should have passed the list on to my neighbor. But there were also the names of some bosom friends, whom I loved for many reasons, but most for their unaffected and ardent devotion to the Savior; they intended to commune. Besides, this was the first opportunity I had enjoyed since the delightful season in Father Gossner’s church in Berlin, six months before. I signed the paper and gave my ear again to Prof. Müller.

Now I can easily imagine that some who read this will ask: “Was our friend listening to a course of lectures on theology in company with crowds of young men who profess no practical acquaintance with religion?” Certainly! Piety is not essential to a theological student in Germany. The pious students at Halle form a very small minority of the theologians, to say nothing of those attending the lectures of the other faculties. Though the fact is cheering that the proportion is rapidly changing about under the influence of Tholuck, Müller, Leo, Guericke, &c.

“But how does it come that such young men attend the lectures of Müller, whom you mention in the same breath with Guericke, the iron-bound orthodox Altlutheraner, and Tholuck, the gentle but fervid pietist?” The solution is easy. Müller’s course on Dogmatics has the reputation of being the very best that can be listened to, at present, at any German university. It is *the* course at the Theological University, Halle. Besides, it is positive; old Wegscheider, the father of modern rationalism, still lectured there, but his day is over; he is *wässerig, negative, destructive*. Müller is scientific, thorough, consistent, sincere. I confess it was rather a puzzle to me at first to see young men, whom I met daily at the public table, where I was compelled to hear their ridicule of all that is good, sitting under such powerful reasoning in behalf of evangelical doctrine and so diligently following

the eloquent lecturer as he demolished one infidel objection after another and held forth the simple truth of the gospel in brilliant purity.

To return from this digression. Some days after the incident above mentioned took place, I told it to several of my Anglo-Saxon fellow-students (Ker, Scott and Creak) and prevailed on them to bear me company. We made bold to call upon Prof. Marks, and seek his acquaintance, though we did not expect to derive much benefit from it, as he has reputation of standing *upon middle-ground*, neither one thing nor the other, orthodox nor rationalistic. He of course received us kindly and had many questions to ask about England, Scotland and America.

The day preceding the communion sabbath we attended preparatory service (Beichte), concerning which my memory has nothing to report and my memoranda depose naught save my astonishment that so few, comparatively, of the students who intended to communicate, were present.

There was a large congregation assembled on the following day. As we went early we were fortunate enough to secure seats, but the broad paved aisles were nearly filled by our Commilitonen, standing listlessly about in their fantastically-braided tabby velvet coats, and mustachios neatly twirled. The usual liturgical services having been attended to at the altar, the Rev. gentleman ascended the pulpit, which, as is customary in those large Gothic churches, was attached to a pillar on the side of the principal nave, and delivered a very tame discourse, savoring strongly of *Werkheiligkeit*, from the words: "Ye are my friends, if ye do whatsoever I command you." John 15: 14. This over, he descended, marched solemnly up the long central aisle to the high altar at the one end of the church and commenced the consecration of the elements. With his back to the people he prayed over them and then began to *chaunt* the *Einsetzungsworte*. This was peculiarly impressive. The venerable old man whose trembling voice could scarcely be heard through the great length of the building, was accompanied by the subdued tones of the organ at the opposite end of the nave; the congregation stood between. In the interludes the high vaulted arches rang with the loud peals of the organ and again all was still—another sentence of the solemn chaunt followed in thrilling contrast, and thus alternating until the words of consecration and the Lord's prayer had been sung.

The communicants then approached the altar. Mounting upon the spacious platform before the low railing that separates the high altar (holy of holies) from the body of the nave, we stood in a crowd upon the left of the preacher, who had now turned about with his face towards the congregation. Approaching him in single file we received



the emblems from his hands and passing on towards the right of the preacher stood until all had partaken, awaiting his *benediction*. Thus ended the ceremony.

The next day, happening to drop in at my friend Keller's, (a student from Ham, in Westphalia,) I found him walking rapidly up and down the room, wringing his hands, as if in agony, with the tears chasing each other down his cheeks. "Ach, mein Gott! unglücklicher Mensch! Ach, was soll ich machen?" He was evidently in great distress, and seemed so completely overcome that I scarcely knew how to begin to comfort him. But I soon found out the cause of his grief. He had gone to Professor Marks, according to the statute, on the day after the communion season, to obtain a certificate from him of the fact that he had been there. (Such a certificate, signed by the University preacher, must be presented by the applicant for licensure!) But the Professor had refused to give him one, and now, what in the world was he to do? The end of the session was at hand, he was about to leave Halle, and would not have another opportunity of communing. "But why did he refuse, my dear Keller, you certainly were there?" "He asked me what the text was, and I could not tell him; he asked for the divisions of the sermon, and I could not give them. "Es war auch solch eine erbärmliche Predigt, wie Du wohl weisst, ich habe wenig darauf geachtet." "But you ought to have been able to tell him something about it." "Oh, I was so scared at the very idea of losing my certificate that I scarcely knew where I was, and I could not answer him a word." "Well, there's no use in your crying about it; I know that you were there, and I will prove it to him. Stop—Ker was there, too, and Scott, and Creak. Get your hat—we will hunt them up and soon set the matter straight." With this, Plitt, (a Moravian from Herrnhut, Keller's Stubenbursch,) came in, and finding us just about as well warmed up as we could be without being uncontrollable, begged us to wait until the Professor's Sprechstunde arrived, suggesting that he would receive us more graciously then, but thinking, no doubt, that we would be somewhat cooled off by that time. We consented, and in the evening Ker and Scott called with us at his house. We were conducted up the long, dark, narrow stairway, and left to wait awhile in the diminutive study, with the old earthen stove lifting itself up nearly to the ceiling in one corner, the indispensable sofa and sofa table, and the prospect of dilapidated walls and tiled roofs extending a few rods from the windows. At length the old gentleman appeared with a bland smile upon his countenance. He appeared so courteous that my wrath began to ooze out of my finger ends; but I, as rather the better German of the three

foreigners, had been appointed spokesman, and there was no escape. "We were exceedingly grieved to learn, Herr Professor, that you refused our friend Keller the customary certificate, and have come for the purpose of testifying that he was present." He was thunderstruck. Recovering himself, as so old a gentleman could no doubt easily do, he reflected a moment, and then abruptly looked me in the face and asked me for the text! Now it was my turn to be thunderstruck. The blood rushed to my face, I felt it glowing, could scarcely trust my senses. My companions sat petrified. Now, as my dear friend Keller had said, there was really nothing worth remembering in the sermon, and it was only its peculiarly inappropriate character that had impressed some portions of it upon my mind. I very distinctly remember that when he announced his text the thought at once occurred to me that he could not have searched long for a suitable theme. And as I feared from what I had heard of him, the discourse was filled with *doing, doing*, it remained altogether on the surface.

Now, the mere fact of being thus catechised by him, when we came as three theological students to testify to so simple a fact, the refusal to believe which, upon the testimony of our esteemed and truly pious friend Keller, had roused our indignation, was enough to overcome my self-command; but what made the matter infinitely worse, and completely confused me, was the fact that *I did not recollect the text myself*; that is, I could not give it to him in the German version. I looked around; Keller was in tears. It was too much. Starting from my seat, I gave the Professor such a description of the sermon as convinced him I had heard it, and then expressed my amazement at the course he had pursued, begging his pardon, at the same time, for whatever might seem improper in my remarks, but assuring him that the whole affair had seemed so incongruous and inexplicable to me that that must be my apology. He rose, and with a kindness of manner that I could scarcely expect, said he was very willing to excuse me, for he knew I was unacquainted with the peculiarly unpleasant situation in which he was placed. "The discharge of my duty, gentlemen, in this matter of giving certificates, occasions me more pain than you can well conceive. These young gentlemen sign the paper that is presented to them; I count the names and order just that number of wafers to be procured. Some twenty-five or thirty of these are not used, and yet all the young men come to me to certify that they have been at the communion table, and upon my certificate may depend their admission to the ministry. Now, I do not know the fourth part of them, and you can easily imagine how I feel when called upon to testify to what is

probably an untruth. Must I not endeavor to satisfy myself of the fact in the first instance? Now this gentleman could not tell me the divisions of the discourse, nor even the text. In a common citizen I could excuse this, but in a theological student, and upon such an occasion, it is enough to convince me that he was not present, especially when I have in my possession the untouched wafers that prove how many of the subscribers did not commune." I scarcely knew what to reply. So they then actually have to *drive* theological students to the altar in Germany! And do theological students *lie* about this sacred ordinance in so shameless a manner? Yet this is the testimony of the Universitäts Prediger himself, and under circumstances where the whole truth is drawn out. I was grieved to the heart, and could only say to the Professor that I thanked God such things were unheard of in my native land. I told him that among us piety was, among all evangelical denominations, regarded as the first and most essential requisite in a theological student, and that where this was found all such ecclesiastical police regulations were unnecessary.

May God have mercy on our church in Germany!

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EXPERIMENTS ON LIGHTS.

MR. EDITOR:

As a number of compositions have been recently brought into use professedly superior to the ordinary materials for producing light, I concluded to test the relative economy of several preparations which I suppose to be analogous to those offered for sale, and as the results may be of some value I place them in your hands.

Chemistry makes known to us but few substances which from their cheapness and illuminating power can be used for the preparation of lights. Among these alcohol, camphor, turpentine, rosin, tallow, lard, wax and oil are almost the only ones that are adapted to this purpose. Pine oil, camphine, &c. have not been included in the list as they doubtless consist essentially of oil of turpentine.

The experiments were commenced by graduating a test-tube so that each division represented tenths and hundredths of air avoirdupois ounce of water, and obtaining the specific gravities of the fluids employed in a manner sufficiently accurate to give the relative weights. It was found that

1	Gallon of turpentine	weighed	7.25 lbs.	specific gravity	.869
1	" alcohol	"	7.17 lbs.	" "	.859
1	" water	"	8.34 lbs.	" "	1.000

Alcohol will readily dissolve 50 per cent. by weight of camphor, and the solutions used were of this strength.

#### EXP. 1.

34 oz. of solution of camphor burned 1 hour, light very good.

32 oz. of dip candle " 1 hour, light less white.

The camphor solution costs 30 cents per lb.

The candle costs 10 cents per lb.

#### EXP. 2.

A mixture of alcohol and turpentine was placed in a graduated tube, from which it appeared, at first, that about eight measures of the former were required to enter into combination with one of the latter, but after standing for some days the proportion was found to be 10 to 1. This mixture burned well, but the light was inferior to that of a candle; it did not smoke or consume the wick, and when burned side by side with a portion of the composition recently sold about town, appeared to be identical with it in every respect.

This light was greatly improved by the addition of camphor. The expense of camphor rendering it desirable that a cheaper substitute should be employed, a portion of powdered rosin was tried: this entered into combination readily with the alcohol and turpentine, and improved the light; but the wick blackened, and after burning for some time a crust was formed.

After a variety of experiments the object of which was to determine the best proportions for the ingredients, the following were selected as giving the most satisfactory results:

For the camphor light 15 alcohol, 2 turpentine, 3 spirits camphor.

For the rosin light 13 alcohol, 2 turpentine, 1 rosin.

A comparative experiment was made to determine the relative values of the following preparations: the fluids being burned in lamps precisely similar and supplied each with an equal quantity of clean wick.

No.	Composition.	Time of burning.	Loss in weight.
1.	13 alcohol, 2 turpentine, 1 rosin,	2 hours.	.85 ounces.
2.	15 " 2 turp. 3 spts. camph.	"	1.00 "
3.	10 " 1 turp.	"	1.14 "
4.	Best sperm oil,	"	0.52 "
5.	A piece of good dip candle,	"	0.64 "
6.	Lard,	"	0.64 "

The consumption of lard was found to be equal to that of tallow with an equal flame, but much less when the wick was lowered. The flame of sperm oil (No. 4.) was brighter than that of either of the other fluids. The camphor light (No. 2.) was also a very beautiful one, it

burned steadily and did not consume the wick. The rosin light (No. 1) was yellowish, approaching to that of a candle; it gave rather more light than No. 2, but burned as if the wick had been slightly moistened and left a crust upon it. No. 3 was paler than No. 2, but similar in other respects.

To ascertain the relative economy of these lights it is necessary to compare them all with some uniform standard; for this purpose the expense of burning for 100 hours has been taken, 133 ounces by measure have been allowed to a gallon, and the calculations made at the following prices: Turpentine 75 cents per gall., Alcohol 75 cts., Sperm oil \$1 25, Camphor 75 cts. per lb., Rosin 4 cts., Candles 10 cts., Lard 10 cents.

From the above data it has been found that

No. 1	costs 72 cents per gall.	and 1 gallon burns	313 hours.
2	" 100	" "	266 "
3	" 75	" "	233 "
4	" 1.25	" "	511 "

Expense of light for 100 hours,

No. 1	costs 23 cents, or estimating oil as unity,	.91
2	" 37.5	1.51
3	" 32.2	1.32
4	" 24.4	1.00
5	" 20.0	.82
6	" 20.0	.82

From these experiments it appears, that the alcoholic preparations with the exception of No. 1, are in fact dearer than oil, although the cost per gallon is much less, and that they consume more rapidly and give less light. They are very combustible, and those who use them are liable to accidents from this cause. Candles are cheaper than sperm oil and lard; with equal light about the same as candles.

Turpentine alone emits too much smoke, and the same is true when mixed with the fixed oils or lard. Wax and Indian rubber, not being soluble in alcohol, have not been used.

Lard oil will probably soon be brought into general use as a substitute for sperm; its fluidity renders it as well adapted to the production of light, and it will, no doubt, be furnished at less expense.

H. H.

## LINES ON THE MASSACRE OF WYOMING.

COMPOSED AT WILKESBARRE, OCT., 1846.

BY R. WEISER.

I stand upon that pure and sparkling stream,  
 Whose limpid waters lave "fair Wyoming;"  
 And fancy calls to mind the days of yore  
 When this fair vale was drenched with human gore,  
 When sighs, and groans, and shrieks, and mortal strife,  
 In all their agonizing forms were rife,  
 When from the rugged mountain's side rushed down  
 The British foeman, and the savage brown,  
 Down from the mountain's wild and craggy steep  
 They came like surges of the raging deep!  
 The murderous war-whoop, and the savage yell  
 Were heard and echoed through this smiling dell;  
 On, on they rushed like furious hounds of Hell,  
 The deeds they did *no mortal* tongue can tell!  
 Poor Wyoming! thy woful day is here!  
 Let nature weep, and shed the friendly tear!  
 Thy day is come, thy plains are strewed with dead—  
 O! spare the infant, and the hoary head!  
 At Forty-Fort a noble Spartan band  
 A thousand craven warriors withstand,  
 Bravely they fought, and nobly stood their ground  
 And far and near the dead were scatter'd 'round.  
 "Fair Wyoming!" thy richest blood was shed  
 Thy soil was fatten'd with thy noble dead.  
 But now, fair vale, thy mournful tears are dried,  
 Thy streams no more with human gore are dyed;  
 Thy sites are dead, they rest in slumbers sweet,  
 No more the sullen, savage foe to meet!  
 There let them rest, a brave and Spartan band,  
 Worthy to enter the bright Spirit-land.

---

*Baccalaureate Address to the Graduating Class in Marshall College. By the President of the Institution. Sept. 9th, 1846.*

We have read this address with much satisfaction, and are gratified to see the public attention directed to the topics here discussed. President Nevin is favorably known as a writer, and as a gentleman of experience and success in teaching. Any views upon the subject of education, expressed by one whose whole life has been identified with some seminary of learning, are entitled to our regard, and they must necessarily exert an influence. After a brief congratulatory introduction to the young gentlemen who had completed their academical course, and who,

with the laurels of the College, were about, *baculum in manu*, to commence life, the author proceeds to offer some very judicious remarks on the subject of College education: first, in reference to the tendency, on the part of students in our literary institutions, to pursue a *partial* education—to remain satisfied with an imperfect or irregular course. This is regarded as forming a characteristic evil with the colleges of Pennsylvania generally. It rarely works well, when a young man enters an institution with a view of continuing only two or three years, to select his studies from different classes. The individual generally accomplishes comparatively little, and becomes gradually dissatisfied with his position.

We have invariably recommended students, if they cannot remain to be graduated, to fall in with all the studies of the course in one of the regular classes, and to pursue them regularly until they leave, and we are pleased to be sustained by the experience of Doctor Nevin, who uses the following language:

“On this subject my mind is fully settled. I have always discouraged the system of irregular study, and shall continue to do so in time to come. I have known many to regret that they had suffered themselves to be betrayed into such a course, but do not remember ever to have met with one who felt that he had wronged himself by pursuing in preference the regular course.”

Secondly, fault is found with the disposition manifested by so many of our candidates for graduation to drop off from their class in the midst of their course, leaving college with an unfinished education, and entering upon professional studies. This tendency, we think, is correctly ascribed to a defective public sentiment. In New England no such system is practiced; much more value is attached to a degree. A young man does not rest satisfied with any thing short of it, and he is willing to struggle with difficulties, practice self-denial, and endure great privations, rather than forego the advantages accruing from a regular course, and cut off the prospects of graduation. We agree with the sentiments expressed by the Doctor in the following quotation:

“An incomplete collegiate education is always a misfortune. A man of good mind may indeed remedy the defect in some measure by subsequent diligence in the way of self-cultivation; but he will be always himself the first, in such circumstances, to allow the full force of the defect, even in his own case. \* \* \* As in a work of art, the plan must be faithfully executed throughout, to make it of true worth, while any particular defect necessarily detracts from the goodness of the entire work; so here, we say, an education, to be accredited as sound and solid to any extent, must be complete. The man who stops in the middle of his course, not only misses that part of it which should follow, but may be said to inflict heavy damage, at the same time, on all his previous acquirements. His education, as a whole, is stunted, and cannot come in any part to its full growth.”

The young man, whose course is interrupted, feels its influence in all subsequent life. It accompanies him in his whole future career, showing itself in every sphere in which he may be placed, and perhaps the deficiency can never be supplied, or the injury repaired. What a true picture is presented in the subjoined quotation !

“ We find it not uncommon for the impatient student to fly the proper academic track in order that he may at once plunge into Blackstone, or some corresponding text book in medicine or divinity. From the end of the Sophomore year, possibly, he executes this grand leap, as it may be called, by which he clears himself from the curriculum of undergraduates, and comes to be known afterwards as an immediate candidate for one of the *learned* professions. He feels himself somewhat magnified by the change, and looks back, perhaps with a feeling of commiseration, on the luckless associates he has left behind him, still doomed to the everlasting lexicon and black-board, the proper occupation of *boys*; while it has become his own privilege to ‘ put away childish things ’ for the more honorable pursuits of a man. Nor is he likely, in these circumstances, to be much disturbed with any sense of incompetency for his new career by reason of his unfinished studies. He is at a loss rather to understand the use of a good deal of that he has made to study already. \* \* \* A regular College graduate, if he has turned his time to good account, is likely to feel that he needs at least two or three years of faithful study subsequently to qualify himself properly for the sacred office; and after he has passed this term he feels it still more than before. But let the candidate spring from the Grammar-School merely, or from one of the lower classes in College, over into the Theological Seminary, and the case is very apt to be quite different. Or let him come at once from the plough, and it will not be surprising to find him strong enough in his own conceit to master all necessary preparation in half the time that is usually required. He can carry along, if need be, the studies of three different classes at once; and have some time to spare besides, for extra occasions. It requires some education, to know what education means.”

Those, who are instrumental in introducing into any of the learned professions one who is destitute of the proper preparatory qualifications, or has not enjoyed the advantages of a liberal education, do the profession itself great injustice, and actually wrong the community. If a wholesome state of opinion prevailed upon this subject, our young men would act differently. Those who possess the opportunity of obtaining a collegiate education would prize it most highly—would, indeed, make every sacrifice to secure the desired object.

The concluding part of the discourse is taken up with a forcible argument in favor of a liberal education, in reply to the objections that are so generally urged. The eloquent appeal presented is calculated to awaken attention, and we cannot but hope that its effect, in directing the public mind to the subject, will be most happy. Thanking the Doctor for the service he has rendered by his seasonable effort, we cordially wish for the address a wide circulation.



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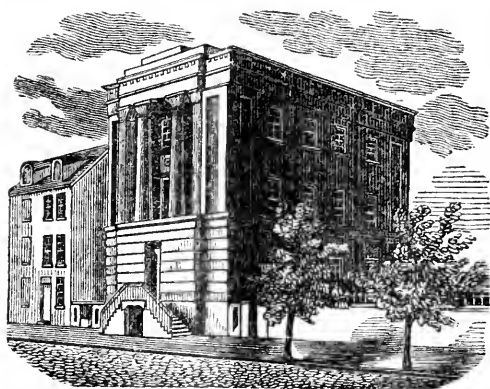
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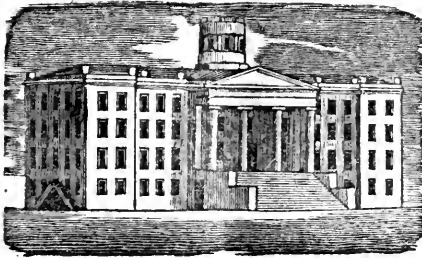
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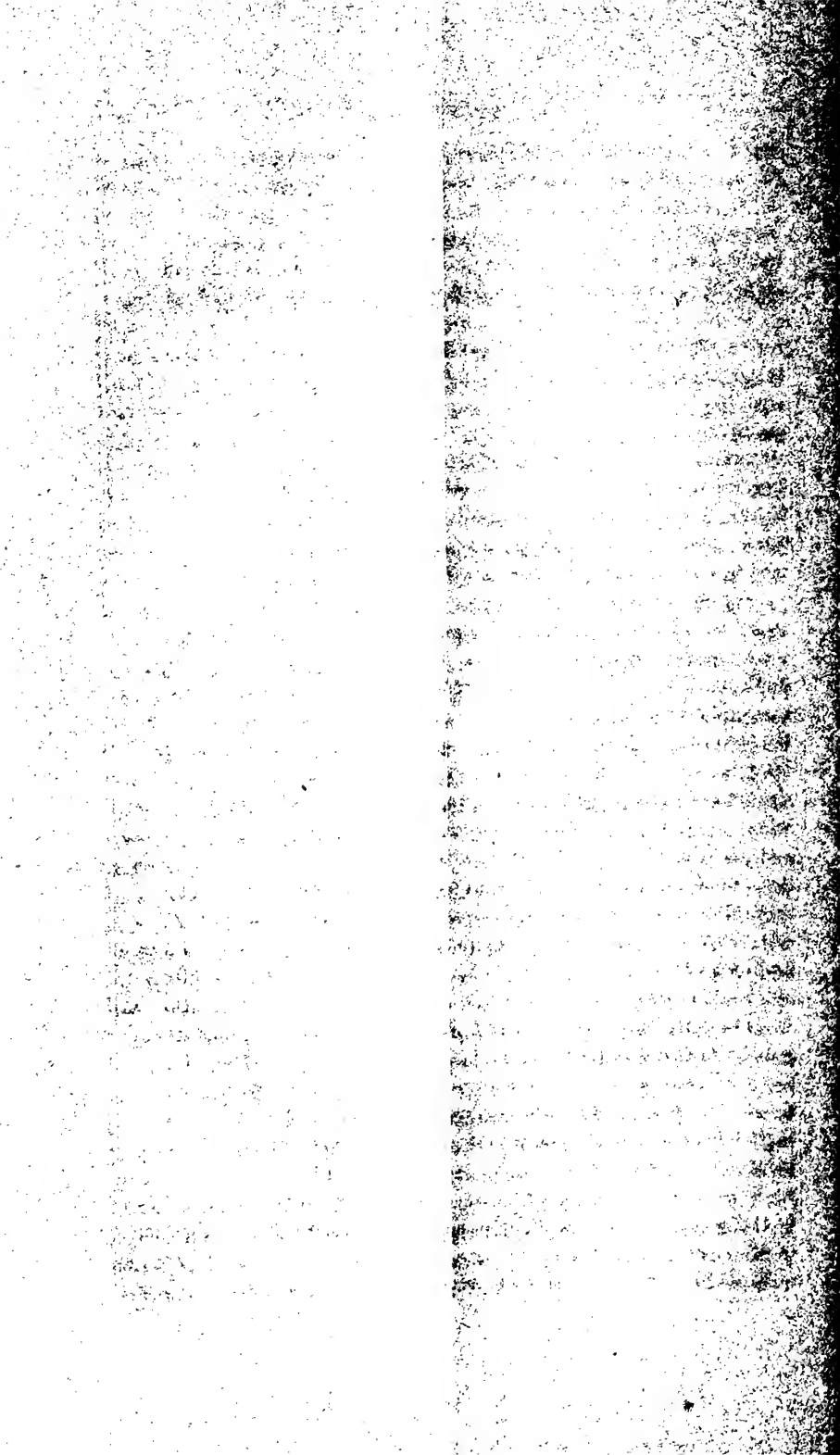
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LOOSE LEAVES FROM MY JOURNAL. NO. IV.

VISIT TO A PRINCE WHO WAS NOT "AT HOME."

"Captain, I wish to be put ashore at N—."

"It shall be done, Sir."

On the afternoon of the 14th of last July, I was rapidly gliding down the glorious Rhine on a small dandy steam boat, with her deck crowded with passengers. I heard French, German, Russian, English and *American* spoken by the motley assemblage, for each of these nations was fully represented. You see in one day all sorts of people in the great thoroughfares in Europe, and here a whole polyglot at once.—An hour or two before I disembarked, I went up to a young man, who had a beautiful girl carelessly leaning on his arm, while she gazed with admiration on the ruins of an ancient castle we were just passing, and addressed him thus: "You are an American, I presume, Sir!" "Yes, Sir, and so are you, *I take it.*" I could almost always tell an American in a crowd,—there's an indescribable something in his bearing, that distinguishes him, but I recognized this one, from the fact that one corner of his mouth was slightly stained with tobacco: that is pre-eminently an American characteristic. It was mutually gratifying to learn that we were from the *same* city,—lived for twenty years three squares of each other,—had often heard of each other, but never met. He introduced me to his young wife, and who should she be, but the daughter of one of my female schoolmates of by-gone years, for whom I remember having felt a very tender juvenile passion. Strange coincidences do happen in this journey of life!

"Get your trunk ready, Sir,—we shall soon be at at N—." "Thank you, Captain!" We rounded a tongue of land, and the beautiful village of N— burst on our view. Towering high above the dwellings of its quiet citizens (for it is partly a Moravian town,) were seen the battle-

ments of a lordly castle, the winter residence of the distinguished nobleman I was going to visit. On a high hill about three miles from the village, I observed a magnificent palace, whose snowy whiteness contrasted beautifully with the deep green forest in which it was partly embowered. It was a striking object;—it stood proudly pre-eminent and challenged the admiration of every voyager on the Rhine. I inquired whose it was? “Oh! that’s the summer residence of the Prince!”—“Ah! indeed, then I expect to dine there this evening!” My informant looked inquiringly at my breast to see whether I wore an order or a riband.

In a few minutes I was safe ashore and went to a hotel that stood just on the bank of the river, from the vestibule of which you have a splendid view far up and down the celebrated Rhine. Ruined castles, ancient towers, smiling villages, and *laughing* vineyards greet your eye on every side;—but I had no time to sentimentalize. I retired to my chamber and spent more than my usual time at my toilette, for I was going to visit a Prince.

But who, after all, was he? Reader: he is a naturalist—an every day prince I would stop no where to visit. They are not usually men of literary or scientific distinction. Prince M—, of N—, is a naturalist of world-wide fame;—he is a traveller withal;—he has visited our country and published one of the most magnificent books on it ever issued. It is illustrated with the finest steel engravings that European skill could produce. All the resources of the printer, artist, paper-maker and book binder were put in requisition in bringing out that book. It is a *chef-d’œuvre* of the book-making art. The next time you go to Washington visit the library of the State Department (not the Library of Congress,)—and ask for it? If you have any taste for the fine arts, you will be in raptures. Well, this nobleman laid aside his aristocratic reserve when he was here—he did not renew the starch on his shirt collar every day, but freely mingled with the people and especially with naturalists. He was much admired for his plainness of manner, as well as for his scientific acquirements. He was *feted* and caressed by many of our people, and he promised a reciprocation of the same favors. I had a letter to him from a gentleman of high distinction in our country and anticipated a rich scientific treat. I expected to see his valuable collections of Natural History and his library of Zoological works. I was full of the highest hope, for I knew he was at the palace. “What time does the prince dine?”—said I to the landlord of the inn. “At four o’clock.” I’ll just be in time, thought I. I hired a two-horse carriage;—who goes to visit a prince in a one-horse vehicle? I shaved closer and

washed cleaner, and gave my hat and coat an extra brush, much to their astonishment. On my way up the high hill, I asked my coachman whether he was authorized to drive close up to the palace door? "Yes!" said he—"when I have the honor of driving gentlemen of the nobility." "Well"—I replied—"you may do that to-day, for you are driving an *American King*." The fellow looked round at me with a dubious air,—“Yes”—I repeated—"an American King, for in my country we are all Kings." He evidently did not believe me, and had so little respect for my royalty, that he actually fell asleep, as his panting horses were tugging up the hill. A smart thwack of my cane across his brawny shoulders, with a threat that I would hurl him down the precipice, brought him to his senses. After that he plainly thought that I acted very like a King.

At length we arrived at the palace. I will not describe it. It is about twice as long as Pennsylvania College, that is, about three hundred feet;—it is surrounded with gardens and groves, crowded with statuary and fountains and all the embellishments of a princely residence.

A lackey stood at the principal entrance. "Is the prince at home?" "Yes, Herr, but he is just preparing to go out in the chase." "Deliver this card and letter to him,—and tell his highness that I shall be satisfied with but a short interview to-day." He took them up stairs. I heard conversation;—it was like that between a prince and a servant,—one voice imperative and lordly: the other submissive and cringing.—He remained fifteen minutes. Thought I: he's putting things in order,—perhaps putting on a clean shirt and he's cursing the servant for being so slow in helping him—I shall be called presently. The servant came down,—I run my fingers once more through my hair and even felt whether my ears were in right trim. The fellow made a low and obsequious bow and stammered out a hundred regrets,—was infinitely (*unendlich*) sorry to tell me that *the prince had already gone out!!!* My looks told him that I knew he and his master lied,—he felt it and shrunk.—I looked at him more fiercely and his eyes fell.—I growled a few words in a language which I knew he did not understand, and in another, which he did understand, I told him that I heard the prince speaking up stairs. He grew pale.—I turned my back indignantly upon him, without leaving any compliments for the lord of the manor.

I have no doubt, at any other time, he would have been glad to see me. But my letter was from such a source as to claim more than ordinary attention from him, and rather than forego the pleasure of the

chase for that day, he chose not to be "at home." I have not attempted to visit a prince since.

---

 GERMAN PHILOSOPHY.

By C. De Remusat, Member of the Institute of France.

(Continued from p. 25.)

## FICHTE.

How does this principle, which with Kant was but the beginning of the transcendental criticism, how does it become the universal principle of all science, of all ontology? The *me* as determining and limiting itself is active; as limited it is passive; active as self-determining, passive as determined. *I think* expresses a passive state, as it is a determined state which excludes every other mode of being; but in itself it is an activity; the thinker is active, the thought passive,—grammar itself tells us. The effort of Fichte to reduce everything to the activity of the *me*, to reduce the duality of subject and object to the intellectual duality of the subject taking itself as an object, a duality which is only a form of unity,—this effort I say has been baffled.

We may indeed admit with him that the *me* in itself, prior to all determinate knowledge, prior to all external knowledge which limits it, and which manifests the duality and the opposition of itself and that which is not itself, can be conceived as a pure *me*, and in that sense, as absolute and infinite, that is to say, as an unlimited power of knowing, a potential thought, an activity or power of acting that, embracing in itself the possibility and the laws of its own action, is thus a free activity. But it is equally true that, inasmuch as that activity enters into action, and, as it passes from a potentiality into an act, it must necessarily determine itself, it must know something or other, and also that in the expression "*to know something*" there is a subject and a government, in the act which it expresses there is a subject and an object. Thus the *me* in action passes from unity to duality. It can know without any opposition becoming manifest. Such is the empirical *me* compared with the pure *me*.

But in the empirical *me* also, there is a unity of the *me*; for the *me* cannot know that which is not or does not appear to be itself but by appropriating it to itself, making itself present in that which is known just as in that which knows; the *me* in passing from the subject to the object, still goes from itself to itself, it establishes and continues its own proper activity. To know a thing, an object, any not-*me* whatever, is to perceive what one perceives, is to be conscious of a sensation.—



Thus under the form of the subject which receives the object is necessarily placed the me which knows itself and recognizes itself. The me taking itself as object, or  $me=me$ , is supposed in all knowledge. Thus the me, so to say, unwinds itself; it is at the same time subject and object, unity and duality; this is simply expressed in the common phrase "*a man knows himself*," a proposition in which the man is successively and at the same time subject and ruler. Every reflective verb is an expression borrowed from the facts of consciousness.

But we can by abstraction extract from every objective judgment that implied duality of the self-percipient me. In every equation of  $A=B$  we can read  $me=me$ , where the abstract me takes itself as the object. It is the abstract faculty of consciousness, it is the pure consciousness, it is the absolute me becoming relative to itself and yet not ceasing to be absolute. Although in fact or in act we cannot *a priori* seize upon such a state of the me, it is still evident that potentially such a state belongs to it; it is its essence prior to all determination, and as it does not realize the act of knowing but upon that condition, as that pure act is supposed in every empirical act, that abstract act implied in every concrete act, we may consider it as existing *a priori*, as a previous datum of the subject, as a primitive which never becomes actual to the pure state, as it were an infinite pre-determination of the infinite activity. Thus in itself, taken as an abstraction, conceived *a priori*, the subject is united-duality, the subject-object, the in-determinate-determinate, the infinite-finite, the unlimited-limited; all these apparent antitheses are not as paradoxical as they appear, as here again we have constant analogies in every reflective verb, that is to say, in every expression of an action where the agent proceeds from himself to himself. The very words me and consciousness signify nothing less. The name "me" designates nothing less than a being that knows itself to be; consciousness is no less than the act of an agent that knows that it acts.

In those terms we have to do only with what is an evident truth, very simple, and perhaps very trite. This is the least at which he aimed and the point from which Fichte started.

From the fact that consciousness, or  $me=me$ , is included in every act of cognition, he concludes that this alone is included there, and as there is nothing but the me in the act, the active is everything.

From the fact that the act is the necessary form of the active, which is the whole being of the me, he concludes that the act produces the whole being, and as the me manifests or attests itself in its self-cognition, by which alone it realizes itself, it is by this means alone that it is real, and nothing being real but by it, nothing but it is real.

I admit that in order to know anything which is not me, the presence of the me is as necessary to the object as to the subject. In the judgment of the most ordinary sensation, it is necessary that the one who judges be the one who has the sensation. The sensation is *from* me, *of* me; it supposes the me. The object of sensation or perception is not such but upon the condition of the me of which sensation attests not only the activity but likewise the potency. Thus it may be said that the not-me does not exist to the me but upon the condition of the me. I further agree and admit that the me is the condition of the not-me, that is to say, if there were no me, the not-me would not only be unknown but as though it had no existence whatever. Yet, from the fact that the not-me has reference to the me, and that the me guaranties the not-me, it does not at all result that the not-me is identical with the me. Without doubt, in the pure consciousness, the subject takes itself as object, which might be expressed in all its force by saying that the me views itself as the not-me, in such a way that the me properly so called makes a circle and is only the identity of subject and object.—This apparent and momentary duality returns to unity by a sort of triplicity; thus the subject me, the object me=me, or the thesis *plus* the antithesis unite together by synthesis. This thus at last reverts to the idea (so common in philosophy) of the unity, identity, and simplicity of the human mind. But if that unity is the means of every act of cognition and is in some sort comprised in it, if the judgment me=me is the condition and as it were the mould of all judgment, it is not less true that in every actual, real judgment of the empirical me, there is, by means of the me, a conception of the not-me, and something more than the abstract consciousness of the pure me. A=B, the me thinks the not-me, is the general form of every real judgment. The system of Fichte admits that in such a judgment the thought [that which is thought] is still the thinker, the not-me is still the me, B is A. We also have admitted that in the pure judgment the me takes itself as the not-me. That was to compare the pure judgment to the empirical judgment; Fichte himself compared the empirical with the pure judgment. But from the fact that we did not mean that in the pure judgment the me properly becomes a not-me, we did not concede that in the empirical judgment the not-me is properly the me or identical with the me. To sustain this, recourse must be had to artifices of language and reasoning. The not-me, says one, being the negative of the me, exists only by the me. But, supposing that the not-me were only a negation, it would still be something different from the me, it would be that which the me is not at all; to be the me in so far as it is not, is not to be the one in so far as it is.

and, whilst every empirical judgment  $A=B$  supposes and contains the pure judgment  $me=me$ , it by no means follows that  $A=B$  or  $me=not-me$  is the equivalent of  $me=me$ , especially as  $A=-A$  is not identical with  $A=A$ . So much for the judgment itself.

Let us pass on to the one who judges; certainly the one who perceives the object of sensation is the one that receives the sensation, and the identity of the subject is implied in every act of cognition; but there is in every act of cognition besides the thing known the person that knows, and although it necessarily contains the knower, the known is not the knower. The proof of this is, that in order to find an act of cognition where one is the other, you are obliged to produce by abstraction the pure judgment  $me=me$ , but the pure judgment is never real, it is a logical supposition which you can only realize by that peculiar faculty which Fichte calls the transcendental sense. It is *a posteriori* that you must re-produce that *a priori*. You ascend from the concrete to this abstraction; but the abstract, which is the condition of the concrete, is by no means the concrete; and, in every actual, real, empirical, concrete judgment, it is admitted that the object supposes the subject, but is not the subject. In  $A=B$ ,  $B$  contains the subject *plus* an object, *me plus* a not-*me*, the sentient *plus* the sensation (*scuti.*) Fichte with Kant tells us that what is perceived is nothing more than the percipient, and that a representation is only a state, a phenomenon, or a result of the representative. Ontologically, there is no doubt ground for this; substantially there need not be in the *me* anything but the *me*, the not-*me* being there only ideally. Yet there must be some sort of difference between the representative and the thing represented, for Fichte himself distinguishes them by an essential designation, calling the one *me*, the other not-*me*.

But, says he, the not-*me* is not a real negative, it is the *me* limited. But why is the *me* limited? It limits itself, is his answer, and as the act of limitation is *its own* act, the limited *me* is still the *me*, and it is the *me* that produces the not-*me*. It must first be proved that it limits itself freely. I know that it is said that every act is free, but this is an abuse of the word free,—and it is only meant by that word that it is in itself that the active finds the principle of the act; such liberty is at the bottom only an internal necessity. To say that the *me* posits and limits itself by a free act of its own activity, is to say that it is made to posit and limit itself, that it is its proper nature so to do, and that it would not be intelligent if it obeyed without consciousness an external necessity. The consciousness of the necessity of its acts would be about the whole of the liberty of the *me* of Fichte and of Schelling.

But yet, is it in itself that the me finds the necessity of its limitation? We have been told that in itself it is unlimited, infinite; but to know itself it must determine itself, the infinite must become finite, and that in that finite it recognises itself as infinite. But that is the act of the pure me, of the supposable me, which however only exists potentially, and is actually found only in abstraction. The real act is not the pure consciousness of the internal necessity of a limitation. Fichte recognises this by implication when he says, that the pure me would be an unlimited activity represented by an infinite line if it did not become to itself a check, an obstacle which arrests it, and which it learns by its self-limitation. Is not this singular metaphor an avowal that the limitation is not absolutely free, even in the sense of being the effect of an internal necessity, and does it not by implication admit that the not-me is a limit, that the negative of the me is an external cause of the limitation of the me by itself! Fichte, then, does not constantly and rigorously persist in positing nothing but the me; and so it is not proved that the me is every thing, or that the not-me is a gratuitous supposition, an empirical accident, an effect without a cause, an inexplicable fact (*donné*,) as some maintain; and at all events, we have not been furnished with an explanation of the reality, admitted at least as an apparent fact, as an experimental necessity by Kant, and in this connection Kant has not been supplied with the principle which he lacked.

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NATURAL HISTORY RECREATIONS. NO. I.

BY AN AMATEUR.

*Infusoria*.—The name "*infusories*" properly designates those minute animals which are developed in artificial infusions of vegetable or animal matter; but the term has also been applied to all those found in fresh or salt water, which on account of their simple organization, have been placed in the lowest grade of the animal kingdom, and which, on account of their minuteness, for the most part, require the aid of the microscope to detect them. It is only about 150 years since the existence of such animals became known, and it was Leuwenhoek, the celebrated Dutch Naturalist, who first called public attention to them. The discovery of this new animal world excited an extraordinary interest and numerous naturalists investigated their nature. Among others Otto Müller, of Denmark, particularly distinguished himself in this new field and attempted a classification of them, but it was left for Ehrenberg of Berlin, who is still living, to pursue this subject to the greatest extent, and to gain a world-wide celebrity for his astonishing researches. He

has demonstrated that those *minutiae* of creation, notwithstanding their minuteness, are not so simple in their organization, as has been generally supposed.

If animal or vegetable substances are allowed to decompose in water, in a few days, according to the temperature, there will be developed uncounted numbers of these *infusories*. If you put a drop of the water under a good microscope, you will observe a number of small points moving among each other with the greatest rapidity, whilst larger ones are seen leisurely swimming about. Similar bodies are found in the green slime which is attached to plants, stakes, stones and other objects in stagnant water. At first, these little animals were considered as inorganic globules or minute aquatic plants, which floated in the water, and their motion was occasioned by the evaporation of the water.—But closer research and numerous experiments have proved that these microscopic bodies are really animals. Their motions are too various and irregular to be explained by mere attraction or repulsion and other physical causes. Besides, in many of them there has been observed a complete organization, a mouth, intestinal canal, a shell enclosing the body, and other physical members. As respects their motion, they swiftly shoot forward, suddenly stop, turn round, move out of the way of others, describe a circle, leap, lengthen themselves out, draw themselves in, become narrow and then wide, and change their form in many curious ways. The motion of some of the Infusories is very slow, often scarcely observable to the eye, and these are frequently united together in series. The existence of a mouth and intestinal canal was discovered by Ehrenberg by coloring the water with indigo or carmine, which was afterwards visible in the transparent body of the animals, showing that they had swallowed it. By means of the hairs or *ciliae* by which many of them are surrounded, the larger species often create an eddy or rotary motion in the water, by which other smaller species are drawn into their mouths.

Their bodies consist entirely of uniform slimy substance, and are of various forms. Some are oval, others globular, others flat, others cylindrical. The globular species turn on their own axis, and do not undergo much variation in form. The flat ones move in straight lines, but often change their direction; often they stretch themselves out and then roll themselves up like a ball. The cylindrical often assume the shape of an S or an 8, and then again suddenly stretch themselves out. For the most part, the body is naked: but many are covered with a tender shell or case; many have a tail consisting of sections that can be shoved into each other like the pieces of a telescope; others have a so-cal-

led rotatory organ, which is surrounded by hairs and situated near the mouth, and this is kept in constant motion. Some have stiff bristles, hooks, claws, spurs, beards, and snouts. Other organs of sense have not been discovered, for the four or five black or red spots over the mouth, which have been regarded as eyes, have other offices to perform.

The minutest infusories are sustained only by absorption through the surface of the body. But the more perfect species take their nourishment through the mouth, and this consists of still smaller infusory animals. The rotary (or wheel) animals by the motion of their singular organ produce an eddy in the water, and thus their food is forced into their mouths. Others have their mouths surrounded by a cutaneous sheath which can be folded in all directions. In some, this sheath is reniform, and the edge is covered with hairs. When the animal extends the sheath, and moves the hairs, all smaller species in the vicinity are entrapped, as it were, and *sucked* into the mouth.

The origin of infusories has been a fruitful theme of speculation.—Many believe that they proceed from eggs as other animals, or from divisions or sprouts from their parents, and some maintain that they are the product of spontaneous or equivocal generations. This latter supposition cuts the knot of the difficulty, but it is not satisfactory. Many curious facts have been stated to prove this theory, but it is not now generally entertained by naturalists.

It is remarkable that the same water or infusion will by degrees continue to develop different species of these animals, and that they successively become more perfect in their organization. At first, the water is *literally* alive with the most infinitesimal monads,—after a few days other species will take their place,—afterwards others of a different formation and more distinct members.

Although infusories are originally generated like other animals, yet after their full development they multiply by voluntary separation, and by so called eggs, or germinal grains. You will frequently observe on both sides of the body of one of them, a deep incision, which gradually becomes deeper, and finally the animal is separated in two. Each grows as large as the first individual, and then they divide in the same manner. The so-called eggs of infusories are not really such, but are only germs, and they are gradually developed to a perfect animal, without breaking the shell as is the case with animals hatched out of real eggs. Their powers of reproduction are prodigious, and according to Ehrenberg, in from eight to fourteen days they multiply to millions, especially when the circumstances are favorable. Even during this winter, I have observed the same phenomenon, and a summer or two ago,

in less than two days, some stagnant water in a bottle in my study, which when first subjected to the microscope was not remarkably crowded with infusories, became a moving *mass* of them.

These animals are short lived. Ehrenberg could not keep them alive longer than three weeks, but probably they live longer in open water. But it is wonderful how those which have been apparently dead and even dried up, can be revived by pouring a little water on them.—It is said that some have been thus resuscitated, after they had been dried up for years. Even some which were frozen with the water in which they were found, came to life when the ice was melted.

No arithmetic can reach down to the minuteness or number of these animals. Some of them, it is true, can be seen with a *good* naked eye. There are some as large as the  $\frac{1}{10}$  of a line, and a line is  $\frac{1}{10}$  of an inch, but the smallest that I have seen, are only the  $\frac{1}{20000}$  of a line in size, and of course, require a good microscope to be observed. It has been calculated that a drop of water may contain five thousand millions of these smallest infusories.

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ON READING. NO. III.

“The habitual indulgence in such reading (novel reading) is a silent, mining mischief. Though there is no act, and no moment, in which any open assault on the mind is made; yet the constant habit performs the work of a mental atrophy: it produces all the symptoms of decay, and the danger is not less, for being more gradual, and therefore less suspected.”

H. MORE.

We believe that one of the greatest evils that now trouble our land is the abundance of works of fiction, and the wide-spread indulgence in their perusal. They constitute a *fons malorum*, from which bitter streams flow forth, scathing and desolating many a spot which else had been green and flourishing. To these books is to be traced much of the corruption of morals and the prevalence of crime. They have given activity to slumbering passions; they have suggested dark deeds and foul thoughts; they have developed in fearful strength and vividness, the depravity of hearts which else had been schooled to purity and gentleness; they have banished modesty from the soul of youth, and have taught the lip to utter profanity and obscenity, and led to deeds of licentiousness and baseness, which defile human nature and make a virtuous man blush to own himself a man.

It were absurd, indeed, to pass a sweeping condemnation on all works of fiction. Even that particular class of fictitious writings, called *Novels*, may claim some exceptions. We believe that Fiction may be read.

We believe that there are a few novels which deserve to be read. There are some that stand eminent as works of genius: conveying historical truth in a pleasing form, without violating morality or shocking modesty: giving vice its due punishment, and exposing its hideousness.—The perusal of these at proper times, and under proper circumstances, may serve a good purpose, by cultivating some parts of the mind that more rigid studies do not call into exercise, and giving a more genial tone to the whole literary character. They may be profitably contemplated as works of art, as productions of genius, whose right study will contribute to the culture of the imagination, a faculty of the soul as much worthy of education as the intellect, or pure reason.

For the great mass of works, however, that bear the names of *novel* or *romance*—and the remark holds good especially of those of most modern date—the furnace would be the fittest receptacle. Many of them are mere trash in a literary view, and exceedingly immoral, and profane. Those which bear the marks of genius are sad monuments of wasted talent. They are decoys to ruin. They have doubtless led many poor souls to the gates of hell.

But we are now chiefly concerned with the effects, which an indulgence in novel reading produces on the intellect. These are most unhappy. Such indulgence begets a diseased state of mind, which impairs the mind's energy and unfits it for vigorous exertion. It gives a forced hothouse growth to the fancy and imagination, while the reasoning powers are left to wither, or live a *stinted* life. It forms and strengthens that evil craving after excitement, to which allusion was made in our first article, and which renders every thing irksome that does not minister to its wants. It forms the habit of *careless reading*. The novel reader reads for amusement. He seldom stops to criticise the style, to weigh the sentiment, or examine the argument. He looks only for action. He watches the countenance, he follows the steps of the hero; and often, in this highly wrought excitement, his eye skims along page after page, without a single thought, or rather without really *thinking*.—And if in the midst of his anxious pursuit after the development and catastrophe, some pages of reflection, or information, or anything of a more serious nature, and worth perhaps all the rest of the volume, intervene—he does not deign to look at these, or passes them carelessly by, and looks eagerly for his hero to come again before his view, and strut his hour upon the stage.

Thus is there produced not only a distaste for more solid and useful works, which will almost prevent their perusal; but also a habit of reading superficially—of reading *without thought*, which is most mischiev-



ous in its consequences. To read without thought is to read uselessly ; it is to waste mind and time. Nay it is more than this. It prevents proper mental action, it deprives the mind of the power of thinking, strips it of every thing like originality, destroys invention.

All these evils have we seen, some have we felt, as the result of a too great indulgence in novel reading. We have condensed these thoughts into as brief a space as possible, throwing out mere hints for more extended trains of reflection, in order that we might have room, without extending this article beyond proper limits, to quote a few paragraphs, expressing our views more forcibly than our pen is able to express them. We commend the remarks to our readers. They are from the pen of a friend who had read much, but had not forgotten to think ; and they originally appeared in a College Magazine.

“ Novels now, considered in all their results, are the most vigorous antidote to a system of thorough, diffusive education. Not only does their perusal impoverish in a high degree the intelligent and reflecting mind, which either reads indiscriminately, or with inconsiderate regard for their character, but what is far more baneful, it snatches upon the unguarded mind, gifted with only a faint outline of literature, and untaught to reason calmly, and to study deliberately—captivates the imagination, and bears it away in triumph, to riot in brilliant, corrupting festivities—vain mockeries of truth ! It is in this point of view we must regard the works under consideration as most dangerous—their tendency to mislead those without the discretion to withstand their enticing forms, and to read with right aims ; to such they prove a curse—throwing the mind, while yet barren of fundamental truths and general knowledge, into a state unfit for toil, unfit for active exertion, enervating the faculties, and creating a morbid and insatiate appetite for tinsel trash, incompatible with a regard for fact or reason. Their frequent study familiarizes with vice, renders callous to debasing crimes, and above all creates a false delicacy, which is the same forerunner and concomitant of lurking licentiousness ! It depraves taste by destroying our natural abhorrence for vulgar epithets and allusions.

“ While the reflecting mind, steeled by a contemplation of great moral or political truths—armed by a large and varied acquaintance with literature—above all alive to its worth—while such a one may peruse harmlessly the modern works of fiction, yet it is a culpable waste of time ; and even the perusal of those of acknowledged merit should ever bear but a small proportion to other intellectual pursuits, at the expense of vigor and precision of thought. Again—the mind whose literary horizon is comparatively limited, especially the youthful mind,

should abstain from fictitious writings as being an antidote—fearful antidote to the full development of his mental faculties; in their study he hazards the purity of his moral nature, and insensibly nourishes within himself a toleration of vice and ignominy, which in the end will ‘bite like a serpent and sting like an adder!’ And the purest, the best of fiction, with the most cautious of readers, we should even be disposed to view only as pleasant by-paths, whereat the traveller in the world of letters may turn aside to regale himself with healthful shades, but by no means essential to a proud and noble stand in the drama of life.”

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EPISTLES TO STUDENTS. NO. V.

YOUNG GENTLEMEN:

There remains to be considered the solemn promise that you make when introduced into the college, that you will abstain from all indecent, disorderly behaviour. If left to your option in regard to this, it is reasonable to suppose that you would be inclined to avoid what is indecent, and to regulate your conduct by the rules of order. It is expected of you, that you have been so trained at home and have come to us so charged with the advice of those who take the deepest interest in your welfare, as to be fully prepared to conform to the laws of decency and order. This is required of you, is laid down as the course which you must pursue, if you would stand well in the estimation of the authorities of the institution and retain your membership. But what, you may ask, is more particularly designed by this portion of the vow. It may be thought that the requisition is not very definite and that it may cover a great deal of ground.

It cannot be denied that it may be charged with want of definiteness, if we are to suppose that some single act is referred to. It must, too, be conceded that it is very comprehensive, and yet the presumption is entirely in favor of the opinion that there can be no difficulty in determining in any specific case, whether it pertains to the category of indecency, or disorder, or not. Amongst the numerous illustrations which might be given, your attention is called to the following. Under the head of indecency, the first thing to be mentioned is unbecoming dress. The reference is not to extravagance in dress, expense beyond our means, —this we consider dishonest pride, and though most severely to be condemned, not presented for consideration at this time—but dress that is *outré*, singular, calculated to arrest attention and elicit censure. In addition to this, negligence in dress and in our personal appearance, either in the presence of the instructors or the public, and want of cleanliness.

may be adduced as in violation of this regulation. In a word, whatever in our outward garb, may be calculated to excite impure ideas in the minds of others, and indicate the want of purity in our own, is prohibited emphatically.

There may be too in our language, manifestations of indecency, and here we introduce as forbidden every thing licentious, obscene, filthy and vulgar.

In conduct, the law of decency requires compliance with the usages of good society, and abstinence from such things as are not tolerated in the best circles. Behavior such as characterizes us when we are in the presence of our mothers and sisters and in the company of respectable ladies—such as befits the gentleman, the educated man, and the citizen of a Christian country, may be adduced as suited to express our compliance with the promise to adhere to the principles of decency. If, however, we are guilty of scribbling upon walls, defacing and injuring property by cutting and other methods of injuring; if we are guilty of passing through the streets puffing segars and lounging around confectionaries; if we are guilty of trespassing upon the hospitality of those whom we visit, by remaining till an unseasonable hour of the night—we can with no reason expect that we will be honored for our deep devotion to the decencies of life, and we shall hardly escape epithets which, in their application to us, we would receive with much indignation.

It is not only what is indecent but likewise what is disorderly that we must avoid, or failing to do it, we are untrue to our pledge, untrue to conscience, untrue to the College. Disorderly conduct is any conduct which is in violation of the order of the Institution. Noisy, boisterous behaviour, yelling,—either in the College edifice, or in the town, in the day, or at night—may be characterized as unequivocally disorderly. Removing property out of its place, or in any way interfering with the position in which it is located, stands condemned under the same law. It is disorderly, to be inattentive during recitations or lectures in the class room, to whisper, talk, or pry into books; to sneak into a corner and try to deceive by using some other guide in the recitation than your own knowledge of the subject.

It is disorderly, to be absent from a college duty, without a sufficient reason, to allege that sleep overtook you, or that you were unwell when your indisposition was exceedingly slight or non-existent, when it had not sufficiently culminated to render remedial agency necessary and permitted you to *empannel* your usual quantity of food. It is disorderly, to remain up beyond the time allotted, and to fail to appear in

the morning at worship under the plea that you did not get awake, when the real state of the case is, that your indolence mastered your sense of duty. It is disorderly, to be tardy in your appearance at college exercises, and then to pretend that you were deceived in the time; and finally it is so—when the indulgence of the government of the institution is exhausted, and incorrigible offenders are subjected to discipline—for you to throw your sympathy entirely upon them, and to seek to diminish the majesty of law, by disrespect to its penalty when it is inflicted. Such is a hasty expose of the matriculation oath. You have voluntarily, with no constraint from the College, assumed it; in the fulfillment, great reliance is placed upon your honor; in no case are you treated with suspicion, till you have shown that you are not deserving of confidence; if at any time you should regard your situation as oppressive, you are at liberty to withdraw. In view of all this, is it not most reasonable that you should be expected conscientiously and fully to show in your conduct that you have not merely passed through a formality of no obligatory power in the assumption of this vow, but that it is really lodged in your heart and is controlling your moral sensibilities with energetic force?

Having reached this point, I propose to launch out into various topics such as I consider calculated to subserve your best interests, to furnish you some guide in the interesting career upon which you have entered, and to aid you in the formation of such a character as will make you useful, beloved ornaments to your kind—happy in your life, not forsaken in your death, remembered on earth, immortalized in heaven.

Your's, faithfully.

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SKETCHES OF A VOYAGE, AND RESIDENCE IN THE SOUTH  
SEA ISLANDS. NO. I.

On the 12th day of December, 1834, I set sail, in the good Brig "*May Dae*" of Boston, from the mouth of the Columbia River, bound for the Sandwich Islands. We crossed the dangerous bar at the mouth of the river in safety, though for the space of about twenty minutes, the sea roared and boiled around our frail bark like an enormous cauldron; and the billows, upheaved from the very bottom, at each instant threatened to engulf us in their briny depths.

At this spot several vessels belonging to the Hudson's Bay Company have been lost, and it was here that our noble Peacock, when attached to the United States Exploring Expedition foundered, carrying with her

the products of many months of labor and scientific toil performed by our energetic and indefatigable countrymen.

We were, as may be supposed, heartily glad to leave this frightful place, and in a few minutes were booming along over a beautiful placid sea, at the rate of eight knots an hour.

It is scarcely necessary to say, that, to me, interested as I always have been, in the beautiful and marvellous works of Providence, *every thing* in the shape of animated nature inhabiting the sea, possessed extraordinary attractions. We had not been long afloat before my attention was turned to scores of a beautiful marine animal lying supinely on the unruffled surface. These are a sort of soft molusk, called *Mедуsa*. They have a cartilaginous body, and vary from the size of a man's hand to that of the head of a barrel. The upper part, or that seen on the surface of the water, is slightly convex, and two whitish spots appear upon it resembling eyes; the lower portion, or that sunk below the surface, has usually a tube projecting from it, expanded or placed out like the end of a clarinet. Within the body, near the posterior part, is a large ovate ball, of a bright orange color, resembling the yolk of an egg. I secured, by means of a bucket having a line attached to it, a number of these curious animals, some of which I put in spirits for the purpose of preserving them, but found it to be impossible. A few hours immersion sufficed either entirely to dissolve them, or to deprive them of their elegant form and splendid colors; and I therefore abandoned the idea of collecting them. The only mode by which these magnificent creatures can be represented to those who stay at home, is by making accurate colored drawings of the animal immediately after it is taken from the water. Whether this has been done by the gentlemen attached to our late exploring expedition I am not aware, but you will find many species of them exquisitely figured and colored in the splendid work recently published by the Government of France, entitled "Voyage de l'Astrolabe." The same difficulty exists in regard to the preservation of the gorgeous fishes of the intertropical regions. I have frequently skinned these, and taken every precaution, by the use of transparent varnishes, &c., to prevent the colors from fading, but without success, or at least, only a small measure of success. The colors were still so splendid, after having been dry for years, as to excite universal admiration, and yet they had not retained a tithe of their brilliancy.

Off Cape Disappointment, and for many hundred miles out at sea, we observed great numbers of Sea Birds of various kinds, several of which I have myself described and published as new species. The little Guil-

Iemots, (*Uria*) were tumbling and rolling along on the surface, half swimming, half flying, and looking almost precisely like large eggs as they sported across our bows. From this resemblance, which is very striking, they have universally, among the sailors, obtained the name of "Egg Birds." Large Cormorants, (*Phalacrocorax*) of several species, were very abundant, as were also various kinds of *Petrels*, (*Procellaria*) and *Mother Carey's Chickens*, (*Thalassidroma*.) The last named birds are so called by the sailors from the superstition too well known to be repeated here. In connexion with this superstition, Jack has also the credit of believing, not only that the appearance of this pretty and harmless bird is always indicative of the near approach of a storm, but that if any one has the temerity to catch and kill one, the vessel in which he sails will surely be overtaken by a tempest and destroyed.—This slander has been circulated almost as extensively as the name of the bird is known. That it is a slander, I am perfectly well convinced, from having mingled much with sailors at sea, and conversed freely with them. As a class, it is admitted they are superstitious, though much less so than formerly; witness the sailing of numerous ships on Friday, a departure from nautical rules which would not have been tolerated a few years since. From this, and other highly favorable changes which have taken place in the feelings and conduct of this class of men, I trust soon to hear of their being, in a great measure, disenthralled from the general odium which has so long attached to them, occasioned doubtless by their own obstinacy in following in the steps of their progenitors.—I have never seen an exhibition of the superstition alluded to above, but on the contrary have frequently been aided by sailors in catching "Mother Carey's Chickens."

As we approached the line, we were gratified by seeing considerable numbers of the beautiful Tropic Bird, (*Phæton ethnus*.) I had been long familiar with this elegant bird from the dried specimens in our Museums, but until I saw it living and sporting in the air, I had no idea of its exquisite grace and symmetry. It is about the size of a Pheasant, (*Tetrao umbellus*.) of a pure silvery white all over, the breast and belly strongly tinged with rose-color. It is remarkable for having two central tail-feathers of a brilliant crimson, and about twice the length of the whole body. I procured several specimens, but unfortunately lost more than I obtained, from their falling into the sea after being shot flying over the ship. The native boys of the Sandwich and Society Islands adopt a singular mode of obtaining the long lanceolate tail-feathers, which are sometimes used as head ornaments by the natives, and are also sold in bundles as curiosities to strangers. The birds, at certain

seasons, resort in immense numbers to the high and precipitous rocks of the coast, to breed. The boys visit these communities at the time when the birds are known to be sitting, and silently approaching the nest, quickly and adroitly pluck the two long feathers from the tail without doing other injury to the anxious parent. By this mode so many feathers are procured, that on almost any day, in the Island of Oahu, at least fifty bunches of the size of a man's arm might be purchased from the boys, who hawk them about for sale.

A large brown Albatross (which I have named *Diomedea fusca*) inhabits these seas. It differs considerably from the common white species which is so abundant around the two great Capes. Though smaller than the Cape Bird, it yet measures from twelve to fourteen feet across the wings. No one who has not seen this noble bird in flight can form any idea of the extreme ease and grace with which it skims over the foaming billows. Its long, falcate wing seems never to tire.— Sometimes it seeks the higher regions of the atmosphere, sailing, without any apparent motion of its pinions, and performing the most sublime aerial evolutions. Again, it descends to the surface, and floats over the dashing and sparkling waves; now lost to sight in the deep trough of the sea, and instantly re-appearing on the crest of the next billow.— On, on, he flies over the wild and wasteful ocean, without ever appearing to rest, except when he alights to pick up something floating on its surface. As an instance of the most incredible endurance of the Albatross, I will relate a circumstance which occurred during my voyage from Chili to the United States. About five days after leaving the port of Valparaiso, a single Albatross made his appearance, the first we had seen—I happened, at the time, to be practicing with a pair of large horseman's pistols; my target being a porter bottle suspended from the foreyard. As the bird hove in sight, our Captain seized one of my pistols and fired. The ball passed through one of the wings, breaking a long feather, but doing the bird no further injury. Strange to say, this bird kept with us, being easily recognizable by the broken and dangling feather. It became a habit with me each morning, to look for the Albatross, and I never was kept long waiting. Indeed the huge bird seemed to have taken a fancy to our ship, (although it must be acknowledged he had not been treated very kindly by us,) and night or day he appeared never to leave us. Whenever the moon gave light, our *consort*, (as we were wont to call him,) was always near us, and for the space of more than three weeks, during which time we voyaged about two thousand five hundred miles, we never knew him to alight upon the surface of the sea. Finding it impossible to procure specimens of

these and other marine birds by the use of the gun, I was compelled to resort to the common, though more cruel mode of taking them—baiting a hook and hauling them in by a line like fish. The Cape Pigeon (*Procellaria Capensis*) and many other of the small sea birds are very readily secured in this way; but with the large Albatross the case is widely different. When hooked in the bill it resists with all its might, spreading its long and powerful wings over the surface of the sea, and catching every wave as it is drawn towards the ship. Sometimes the hook is torn out, and then, the evident suffering endured by the poor bird is so painful to behold, that even the callous and unsympathizing naturalist is ready to desist.

It is a curious fact, that neither the Albatross, nor any other of the large sea birds, is capable of rising from the deck of a ship when once landed upon it. They require a yielding surface, such as the element upon which they live, to enable them to commence their flight.

The little “Mother Carey’s Chicken,” or “Stormy Petrel,” as it is often called, (*Thalassidroma Wilsonii*), is, I believe, never seen to alight upon the water. It picks up its food,—which consists chiefly of small sea-nettles, and any fatty matter, floating upon the sea,—while on wing, pattering constantly, with its little delicate feet upon the surface. From this well known habit, it originally acquired its name,—Petrel,—from its walking upon the water, like Peter attempted to do, when he would have met his Divine Master upon the sea of Galilee.

In my next number, I shall give some account of my residence of three months at the Sandwich Islands, with anecdotes illustrating South Sea life amongst natives and foreigners.

J. K. T.

Philadelphia, January 12, 1817.

GEMS FROM THE GERMAN OF RICHTER.

God is light, which, itself invisible, makes all things visible, and gives to every thing its color. Thine eye perceives not the ray, but thy heart feels its warmth.

Who can perceive the infinitely small? Only one, the infinitely great.

Unless we remain quiet when stung by a bee or by fortune, the sting will break off and remain behind.

Vice is the ballast of the earth, and will at its time be cast out and sunk.



*The Capteivei of Plautus ; With an Introduction and Notes, by  
W. M. Reynolds, A. M., Prof. of the Latin Language, &c.  
Pennsylvania College, Gettysburg, Pa.*

We hail with delight the multiplication of books designed to facilitate the study of the Classics, and to increase the appreciation of their value among us. We are glad to perceive, in the department of classical education in this country, many signs of encouragement. Within the last few years editions of the Classics have appeared from the American press, which have done honor to the scholarship of our land, whose merits have been acknowledged in other lands. We are satisfied that after all the new methods of education shall have been tried, we shall at last return to the conviction, that nothing is so effective in disciplining, refining, and elevating the mind, as those often neglected and much abused classical studies. •

It is with much pleasure that we direct the attention of our readers to the volume whose title-page has been given. The Editor brings to the work reputation as a linguist, and experience as an instructor. Much is, therefore, naturally expected, but confident are we, that these expectations are met. The book is just of the character the pupil needs. Practical knowledge of his wants, acquired by long experience, has enabled the Professor to furnish the kind of assistance required, to supply the right word of explanation at the right place, without producing confusion by too much, or obscurity by too little. The notes seem to have been prepared with much care, and are just what notes should be—brief, comprehensive, and judicious; a guide, sufficiently illustrative of the text, without encumbering with help: they strike us as realizing the true idea of classical editorship. Voluminous comments are not only useless to the student, but they prove an actual injury to the cause of classical literature. The interest of the pupil should be elicited, and his industry directed, rather than superseded. Instead of solving difficulties for him, he should be put in the way of finding the solution himself. He should be left to exercise his own judgment in translation, and be obliged to have frequent recourse to the Grammar and Lexicon, rather than be relieved by a commentary on almost every line. In short, care should be taken, that the way is not made too easy, that the student be not bribed into habits of intellectual sloth, and the very object of studying the classics defeated.

The introduction on the Life and Writings of Plautus is quite interesting, furnishing the student with a condensed account of this most popular dramatic writer that Rome ever possessed. The essay on

Metres and the peculiarities of Plautus is very satisfactory, and must prove of valuable service, particularly as works accessible to students are, in this respect, so deficient.

Although this is the first attempt of the Editor in this department of Literature, we hope it will not be the last. Glad should we be if sufficient encouragement would be given to the effort to justify a continuance of the labor so favorably commenced—the publication of a more extended selection from the writings of this great master of Roman Comedy. We offer our thanks to the Editor for the service he has rendered, earnestly desiring that he may be amply compensated for the time and labor expended in its preparation, and expressing the hope, that the work may be speedily and extensively adopted as a text-book in our Classical Schools.

---

The Examination of the Classes in Pennsylvania College will commence on the 1st inst., and continue during the whole week. The following is the programme of the exercises:

MONDAY, FEB. 1st,		The Preparatory Department will be examined from 9, A. M. until 12, M., and from 2, P. M. to 5, P. M.
TUESDAY, 2d,	9, A. M.	Freshman Class in Greek.
	10, “	Sophomore—Latin.
	11, “	Junior—Natural Theology.
	2, P. M.	Senior—Astronomy.
	3, “	Junior German Class.
	4, “	Sophomore—Greek Testament.
WEDNESDAY, 3d,	9, A. M.	Senior—Latin.
	10, “	Junior—Chemistry.
	11, “	Sophomore—Greek.
	2, P. M.	Freshman—Mathematics.
	3½, “	Junior—Latin.
THURSDAY, 4th,	9, A. M.	Freshman—Latin.
	10, “	Sophomore—Mathematics.
	11, “	Junior—Greek.
	2, P. M.	Senior—Butler's Analogy.
	3, “	Freshman—History.
	4, “	Junior—Mental Philosophy.
FRIDAY, 5th,	9, A. M.	Sophomore—Roman Antiquity.
	9½, “	Freshman—Ancient Geography.
	10, “	Junior—Rhetoric.
	11, “	Senior German Class.
	2, P. M.	Senior—Greek.
	3, “	Sophomore—Algebra.
		French and Drawing.
SATURDAY, 6th,	9, A. M.	Sophomore—Rhetoric.

## COLLEGE RECORD.—OBITUARY.

*By all of human race, death is a debt  
That must be paid : and none of mortal men  
Knows whether till to-morrow, life's short space  
Shall be extended.*

EURIPIDES.

*"Man cometh forth like a flower and is cut down : he fleeth as a shadow and continueth not."*—JOB.

During the last month we have had sad mementos furnished us of our own mortality. Death has entered our Institution and cut down those who were connected with us by the most interesting ties and endeared to us by their many virtues. It is indeed true that DANIEL A. WILLEMEN, GEORGE ALBERT, and WILLIAM BEARD are no more! On the 14th ult., the first, a member of the Freshman Class, on the 15th, the second, of the Senior, and on the 23d, the third, of the Junior Class, ceased from among us. Although the best medical skill was put into requisition, it proved of no avail; disease was relentless and resisted every ministrations employed for their recovery. Come when it may into our midst, death never fails to touch the heart of those who survive its work. There is no one so indifferent as to defy its impressions, even when a casual acquaintance falls; but when those are torn from us with whom we were daily associated, and were wont to hold sweet converse, whose amiability, gentleness and kindness, whose industry, application to study, and fidelity to duty, whose exalted worth, pure character and sincere piety have won for them a high place in our affections and secured the esteem of all, the gloom that prevails, is beyond the ordinary feeling, the grief is inexpressible. During a painful and protracted illness the sinking spirits of these dear young men welcomed death as the entrance into that world where the weary are at rest. With a perfect consciousness of their approaching end, they expressed their unwavering confidence in the blessed Redeemer. To them Death had no terrors: they died as they had lived, in the faith of the Lord Jesus Christ, and in the confident and peaceful hope of everlasting perfection and bliss through his merits. We weep then not for them; they are safe and blest. We weep for ourselves, for the Church for whose service they were preparing, for the extension of whose borders they were sighing. But still they live! And long, long will they abide in memory "despite the ruins of the tomb." The recollection of their many virtues will long be engraven on the tablets of our hearts. The influence of their life and example shall remain. From their "walk and conversation" we will learn the excellency of piety—from their death we will learn the power of religion in qualifying the soul for heaven.

May the solemn lessons addressed to us on this mournful occasion be blessed to our spiritual improvement. May we listen to the admonition, how short is time and how frail our hold upon it, what responsibilities we sustain, and what important issues are before us! May we remember that we are not proof against the shafts of death—that our eye too must lose its lustre, and our frame its vigor—that even now the grave waits to receive our ashes, and the church bell will soon have tolled our knell! May we so live then that death will be to us only an admission into higher life—that survivors may shed over our tomb tears of hope as well as tears of sorrow; that they may discover, in their remembrance of us, springs of comfort, testimonies to the power of religion, encouragements to virtue and piety, and pledges of immortality! May we so live and "walk with God," that, when summoned from time to eternity, we may commit our departing spirits to Him who gave them, with humble trust, with filial prayer, with undying hope: that death may be gain, and "when Christ, who is our Life, shall appear, we may appear with Him in glory."

## DEATH OF WILLIAM A. RENSHAW.

*Who to himself shall promise length of life?  
None but the fool: for O! to-day alone  
Is ours: we are not certain of to-morrow.*

SOPHOCLES.

“*As for man, his days are as grass: as a flower of the field, so he flourisheth. For the wind passeth over it, and it is gone: and the place thereof shall know it no more.*”—THE SWEET SINGER OF ISRAEL.

It is with no ordinary degree of sorrow that we record the death, and offer our tribute of affection to the memory of another, who was known to us as a pupil and a friend, an associate and a Christian—whom we had learned to admire for his talents and to love for his worth. *Renshaw*, too, is numbered with the dead! On the 21st of January his spirit passed into the rest which is eternity, and is now, we trust, with God!

Mr. *Renshaw* completed his course in Pennsylvania College, and was graduated at the last Commencement. At the beginning of the Winter term he became a member of the Theological Seminary of this place, and, with a view to the Christian ministry, he was faithfully and successfully prosecuting his studies. About a month since, disease, entering the Seminary, seized hold of his frame, and death speedily selected him as a victim. Although every thing was done for his restoration that either medical science could suggest, or affectionate sympathy prompt, it was all in vain.

Whilst we contemplate the removal from among us of our esteemed friend, as the fulfillment of that law of our being which makes it needful for man *once to die*, we cannot but lament the loss of one whom we had hoped to see spared for many years of active usefulness, the pride of his *Alma Mater*, an ornament to the community, and a blessing to the Church. This mysterious and melancholy event we must ascribe to the sovereign pleasure of that Almighty Being who works all things according to the counsel of His most wise and righteous will, who “numbers our days,” who “changes the countenance of man and sends him away,” and we must acknowledge it to be just. No matter how painful the dispensation, it is our duty to acquiesce in the appointment of Heaven, to bow with Christian resignation, gratefully recollecting that *He, who strikes, has power to heal*. None but God could take the life God gave, or dissolve what God has made. Our friend has gone—but as the thought recurs, it is softened by the cheering reflection that he has passed from earth to heaven, from sin to holiness, has exchanged a life of labor and toil for that of rest, sufferings for eternal bliss. Disease no longer preys upon his body—no longer temptation assails, or care distracts. Hitherto he was associated with men, now he is the companion of angels. Shall not the heart then respond to the song of holy resignation:

Why should we mourn departed friends  
Or start at death's alarms?  
'Tis but the voice that Jesus sends  
To call us to his arms!

Whilst we deeply sympathize with the bereaved friends, we can only point them for consolation to that Higher Power which is never found to deny comfort to those who ask reverently that *His will, not theirs, be done*. May our Father and the Saviour of us all, who *tempers the breeze to the shorn lamb*, extend over them the shelter of his wing, and sanctify this afflicting dispensation to their eternal good, that it may work out for them “a far more exceeding and eternal weight of glory.”

# Pennsylvania College, Gettysburg, Pa.

## FACULTY AND INSTRUCTORS.

- C. P. KRAUTH, D. D.—*President and Prof. Nat. and Rev. Rel., Ethics, &c.*  
 Rev. H. L. BAUGHER, A. M.—*Prof. of Greek Language, Rhetoric and Oratory.*  
 Rev. M. JACOBS, A. M.—*Prof. of Mathematics, Chemistry and Mechanical Philos.*  
 Rev. W. M. REYNOLDS, A. M.—*Prof. of Latin, Mental Philosophy and Logic.*  
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 JOHN G. MORRIS, D. D.—*Lecturer on Zoology.*  
 ABRAHAM ESSICK.—*Tutor.*  
 JOHN K. PLITT.—*Tutor.*

PENNSYLVANIA COLLEGE has now been chartered about fifteen years. During this time its progress has been such as to gratify the most sanguine expectations of its friends. The course of studies is as extensive and substantial as that of any Institution in the Country. The *Preparatory Department* provides for instruction in all the branches of a thorough English, business education, in addition to the elements of the Mathematics and Classical Literature. The *College Course* is arranged in the four classes usual in the Institutions of this country.

The government of the students is as energetic as their circumstances seem to require. They attend three recitations a day, Church and Bible Class on the Sabbath, and are visited in their rooms so frequently as to preclude the danger of any great irregularities. They are all required to lodge in the College Edifice, special cases excepted.

The annual expenses are—for board, tuition and room-rent, during the winter session, \$63 62½; for the summer session, \$43 12½. Washing, \$10 00; and Wood, \$3 00. Total expense, \$119 75. Boarding can be obtained in town at \$1 25 per week.

There are two vacations in the year, commencing on the third Thursdays of April and September, each of five weeks continuance.

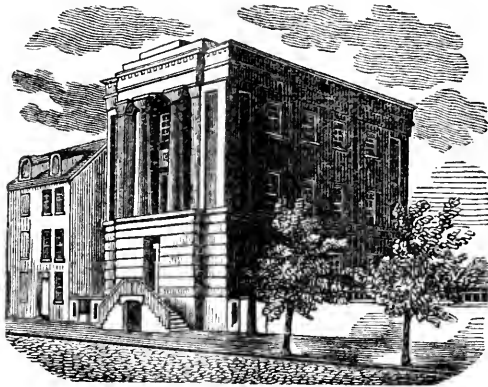
The semi-annual examination will commence on Monday February 1st, and continue during the whole week.

### *Receipts during January.*

Joseph Brown, Smithsburg, Md.	\$1 00	Vol. 3d.
Frederick Bell, Leitersburg, Md.	2 00	: 1 & 2
Rev. W. S. Emery, Waterstreet, Pa.	1 00	: 3
William Walter,	1 00	: 3
Rev. Wm. A. Passavant, Pittsburg,	2 00	: 3 & 4
Geo. Fahnestock,	2 00	: 2 & 3
Rev. A. A. Trimper, Hillsboro', Ill.	1 00	: 3
Frederick G. Ealy, Waynesboro',	1 00	: 3
Alexander M. Rogers, Baltimore,	1 00	: 2
Percival J. Trion, Gettysburg,	1 00	: 3
James S. Bryan, Elizabethtown,	1 00	: 2

# Pennsylvania Medical College,

Filbert above Eleventh street, Philadelphia.



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W. L. ATLEE, M. D.—*Prof. of Medical Chemistry.*  
W. T. BABE, M. D.—*Demonstrator of Anatomy.*

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## Donation to Cabinet.

From *Esaius Z. Little*, Gettysburg, Colymbus Glacialis (Loon.)

## Donations to Library.

1. From *Edward C. Herrick, Esq.* New Haven, per *Prof. M. L. Stoeber*, Dr. DeKay's address on the progress of Natural History in the United States.
2. A Catalogue of New Haven plants.
3. An Essay on the Northern lights, and other meteoric phenomena.
4. From *Rev. C. P. Krauth*, Baltimore, per *F. W. Brauns*, Muhlenberg's History of grasses in North America.
- 4 From *National Institute*, Washington, Fourth Bulletin of its Proceedings.

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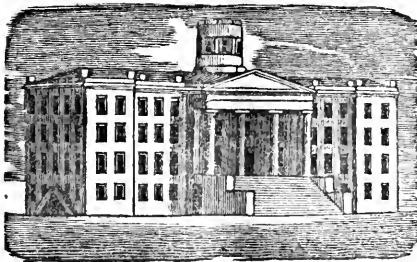
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MARCH, 1847.



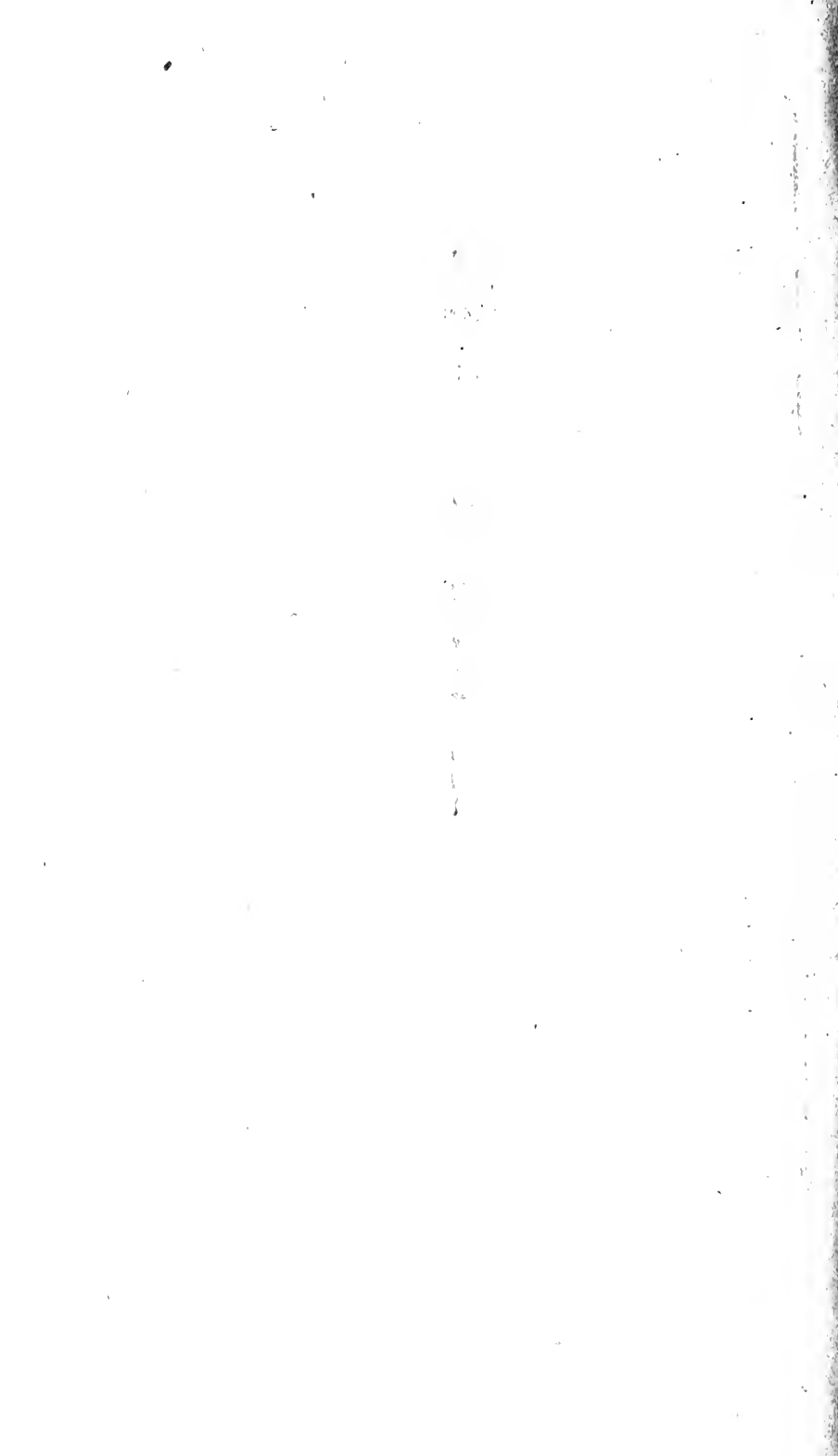
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THE AGE OF PERICLES. NO. II.

One of the chief sources of amusement and instruction, in the age to which we refer, was the Drama. This art had passed from the rude form in which it first appeared under the guidance of Thespis. It had ceased to be a movable stage, with a single actor to recite things ludicrous and grave, accompanied by a chorus of buffoons. Æschylus had introduced the dialogue and a fixed stage, and had thrown around this art the vigor and hue of his own lofty genius. Rough, bold, unpolished, yet sublime, he may be said to have given character and fixedness to the stage, which before was without a name and place. To him succeeded Sophocles, the most perfect in the form and sentiment, and Euripides, the most pathetic and tragical. Now there were introduced upon the stage three personages, the chorus of spectators, and scenery and other accompaniments, such as to furnish the most lively gratification to the intellectual powers and the senses.

The tragedies, enacted before all the people, at which they were not only privileged to attend, but had the means furnished them by the instrumentality of Pericles, were generally confined to the events which occurred to a few distinguished families of the heroic age. Here were exhibited the loftiest sentiments of patriotism, sound morals, and piety towards the gods. The misfortunes of life, by being renewed before them, in the personages of some of their most distinguished heroes, made them submissive, and awakened within them the emotions of pity and fear. But we do not intend to discuss the character or merits of the Drama in the abstract, but rather to present it as it appeared at Athens in the age of Pericles. It had attained its highest pitch of grandeur and excellency both in its form and exhibition. It is vain to place beside the master-pieces of this age the most perfect model of modern times. The splendor of the Theatre in its architectural structure, the

scenery, the music, the actors altogether surpassed any thing of the kind which appeared before or since.

Comedy, which yet existed in its old form or was in its transition state, flourished under the inspiration of Aristophanes. Tragedy was dignified and elevating; comedy, descending to personalities, to low and vulgar abuse, according to the whim or passion of the writer, was received by the populace with unmeasured applause. It fell in naturally with the democratic spirit of the Athenians to hear their best men, their most distinguished generals, statesmen, and philosophers brought down to the level of their vulgar slang, and covered with the ridicule of their dirty jokes. This is human nature. If men cannot elevate themselves to the dignity and importance of those by whom they are surrounded, they obtain equal honor by bringing them down to their own level. In either case, there is at least theoretic equality. The degree of licentiousness to which this form of amusement was carried may be inferred from the fact, that the names of real personages were mentioned, and their characters held up to ridicule, and that Socrates himself, perhaps the most perfect model of heathen morals, did not escape. If we throw ourselves back in imagination to the time referred to, and imagine comic poets at liberty to ridicule on the stage before the great-vulgar any and every description of character, we will be able to form some conception of the degree of liberty enjoyed at Athens in the age of Pericles. We will see a degree of licentiousness not to be found any where else, either in ancient or modern times, and will be led to wonder, how in such a state of things, prosperity smiled upon them at home and abroad. The mischievous tendency of this freedom was seen and felt ere long by the Athenians themselves, and they hastened by law to arrest the fatal evil. For the worst form of licentiousness is that of the tongue, against which there appears to be no adequate remedy, except banishment or death. The licentiousness of the ancient comedy is principally due to Pericles, who, courting the favor of the people, not only secured for each an appropriation of two oboli a day, but perfect freedom of representation in addition, until the licentiousness of the stage was directed against himself personally.

Another cause of the dangerous liberty of the comedy may be found in the turbulence of the times, when the refined sentiments of Menander could not be relished. The luxury and ease necessary to appreciate such beauties yielded to the dangers and doubts of a protracted war abroad, and turbulence and pestilence at home. The excitement produced by such causes created a demand for something more gross and palpable.

At the same time, the arts of Painting, Sculpture, and Music were carried to perfection. Music had from the earliest times received much attention. It was employed to subdue their feelings and add solemnity to their religious ceremonies. It inspired them with courage in the day of battle, and threw an additional charm over the sweetness of domestic life. The effects, which tradition ascribed to it, in the days of Amphion and Orpheus, are unquestionably due, in a great measure, to remoteness of time and vivacity of imagination. Then the art was rude and produced its happiest results. Its tendency was to soften and refine. But music, like every art and acquirement when unsanctified, became an instrument of evil. That, which in its infancy subdued and softened, now enervated. That, which arrested the fierce warrior in his mad career and soothed his passions into peace, now held him spell-bound, an idler and a sensualist; and that, which elevated and refined the external man, by influencing his feelings, now destroyed the manliness and vigor of those feelings, and led him captive, a wanton, perverted in mind and manners. Aristotle says, ironically, "Every kind of music is good for something; that of the theatre is good for the mob, being well suited to the perversion of their minds and manners, and let them enjoy it." Plato, Aristoxenus and Plutarch bitterly complain of the corruption of music, as the main source of vice and immorality. That art, which had anciently been used as the vehicle of religious and moral instruction, was employed in the theatres to excite every voluptuous and dissolute passion. In modern Italy, and France, and Germany, we can see the operation of the same causes modified by the peculiar circumstances of each nation. That such should be the effect of music of this particular kind, many may be slow to believe. Yet we cannot refuse our assent to the concurring testimony of ancient writers, who refer to this cause the extreme degeneracy and corruption which almost universally infected the Athenians at the period now under review. Causes, which operate on the many, are not easily mistaken: but should we still doubt the cause, the effect at least cannot be denied. The Athenian youth are said to have dissipated their fortunes and melted the vigor of mind and body by wanton and expensive dalliance with female performers on the theatre. Weary and fastidious with excess of criminal indulgence, they lost all capacity or relish for solid and manly occupations, and at once deserted the exercises of war, and the schools of the philosophers. To fill up the vacuities of their listless lives, they, as well as persons more advanced in years, loitered in the shops of musicians and other artists; and sauntered in the forum and public places inquiring after news in which they took no interest, unless some danger

alarmed the insipid uniformity of their pleasures. Dice and other games of chance were carried to a ruinous excess, and are so keenly stigmatized by moral writers of that age, that it would seem they had begun but recently to prevail and prove fatal.

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LOOSE LEAVES FROM MY JOURNAL. NO. V.

BY J. G. M.

“I'm on the sea, I'm on the sea,  
I am where I would *never* be.”—

Thus groaned to-day a poor, sea-sick *compagnon du voyage*, who solemnly declared that if he should be spared to reach the land, which he thought he would'nt live to do, no man would ever catch him at sea again. I was mercifully exempted from this visitation, thanks under Providence to a good stomach, a good conscience, and a stout heart, and spent much of my time in *naturalizing*. On my outward voyage, nothing of special interest occurred—we saw neither whales, nor sea-serpents; we caught no crabs, and harpooned no porpoises. Not even a flying-fish crossed our path, and in general, it was a dull voyage for a naturalist. But still, there was enough to engage our attention occasionally, and almost all the way across we were accompanied by that everlasting Flyer, the *Sea-gull*. These birds (*Larus*, Lin.) are met with even in the midst of the ocean, and seem to be untiring on the wing. For hours they fly rapidly along, occasionally darting down to pick up some offal thrown from the ship, or to pounce on a stray flying-fish that has ventured out of his native element. Now and then a gull may be seen floating on the top of the wave, and its graceful rising and falling with the motion of the water is an interesting spectacle. It is in this way they rest by day and sleep at night. The different species seem to live harmoniously together, for they are all ocean wanderers and marauders, and like other pirates of different complexions, languages and countries, they agree to plunder whatever falls in their way. By throwing a piece of fat pork over board, we could attract a whole family together, until some fish or other marine monster would snatch it away from them. I have often wondered what induced these birds to go so far out to sea, when their food could be procured along the coast, for it consists of small fish and the flesh of dead animals floating on the water, but I presume they follow ships from which they have received a choice morsel when near land, expecting to receive the same every day. For many days in succession I have observed the same gull careering round our ship every morning as soon as I went on deck, and

I did not lose sight of it until after a gale. It was interesting to watch this bird in a storm. It would fly close to the water, although the waves were running what is poetically called "mountain-high." One moment, it would be low down in the trough of the sea, and you would suppose the monster wave sweeping along would overwhelm it, but the bird would gracefully follow the curve and rise to the crest of it, and seem to bid defiance to the most violent shakes of Neptune's trident. They breed in the sand or in clefts of rock, laying but few eggs at a time, but as soon as the young birds are capable of flying, they launch out on their ocean adventures, returning only periodically to obey the great law of their nature, the propagation of their kind.

The porpoises when abundant, and they usually occur in troops, afford constant amusement. They are full of fun themselves, and cut the most curious antics around the ship. You will see them approaching several miles off, and it looks very much as if they were playing the game of leap-frog, for such a tumbling over each other—such a jumping out of the water over the heads of those going before—such a racing and snorting and shaking of tails—such a threshing of each other sides can only be equalled by a crowd of impatient boys just let loose from school. This animal (*Phocæna*, Lin.) swims very swiftly, for even when our ship was tearing through the water at nine-knots, the porpoises would cross and recross her bow and shoot ahead of her with ease. When below the surface of the water, they show the most beautiful green color you can conceive. but this is the case with all large fish. They are cunning fellows and are not easily caught, and this induced a punning friend of mine to remark, who had tried in vain to hook one, "after all, they are not so *green* as they look."

As we neared the British channel, we were all called up one day to see a *big-fish*, and sure enough, within a few yards of the ship, three or four monsters were gamboling in beautiful style. They were from fifteen to twenty feet long; they would poke their huge snouts out of the water, turn on their sides, dive under the ship, thresh the surface with their tails, and seemed to be cutting capers just for our amusement. The sailors called them "*Nor capers*." It was a larger species of *Phocæna*, than our other friend of that genus. They kept us company for some hours and then disappeared. Our boatswain got his harpoon ready, but like many another sportsman, just as he was prepared to take aim, the game flew away.

On my return voyage, the season was much farther advanced, and the ocean game was much more plentiful. For many days together, millions of sea-nettles (*Medusa*, Lin.) floated past our ship. These ani-

mals look like a mass of jelly, with a disk more or less convex, resembling the head of a mushroom. Their locomotion is assisted by the contractions and dilatations of this disk, from which, as well as from the mouth in the centre, tentacles of various forms and sizes proceed. These are the arms by which the animal seizes its prey. When I say millions floated by us, I mean no exaggeration,—the whole sea appeared to be covered with them, and this continued for many days. The genera and species were numerous. The species of one genus, that looked precisely like a dice-box half flattened and that had no tentacles, united themselves together at the sides—sometimes there were as many as twenty thus united, and then they looked exactly like a riband of a yard in length, and four inches wide, floating under the surface. We fished up many by means of a rude net constructed for the occasion, and when brought up, they lost their form, and were nothing more than a shapeless mass of gelatinous matter.

The luminosity of the sea at night attracted the attention of every one. This is supposed to be occasioned by the minute crustacea and other microscopic animals with which the sea is crowded, and which emit a phosphorescent light. I had bought a good microscope in Paris, and brought it out to observe these animalcules, but all the idlers on board immediately surrounded me; every one wanted a look before I had adjusted the instrument, and the ship rolled so violently, that I could make no observations.

It was on this voyage, that I first saw the flying-fish. (*Exocetus*, Lin.) Poor little things, how they did fly from their voracious pursuers, the dolphins! They would rise out of the water, skim over the surface about fifty yards and then fall in;—having wet their wings, they rise again and take another flight, but their persecutors would be rushing on after them at a terrible rate. Some, no doubt, escaped, but there must have been a sad havoc among them on that day.

One calm morning, long before I rose, I heard more than ordinary confusion on deck in a calm. I heard the uproarious voice of a fellow passenger, and I knew that something uncommon had occurred. I crept out of my berth to see the fun, and coming on deck I saw three or four fish about twice the size of a shad, which had been caught by hook and line. They were *Bonctas*, and their capture afforded fine sport. Thousands of them followed us for several days, until they were voted a decided bore, especially as they were not very palatable to the taste. I believe the steerage passengers and sailors relished them greatly.

About this time, we were highly amused for many hours in succession at seeing vast shoals of small fish about six inches in length, ri-

sing out of the sea in long, successive leaps; up and down they went racing through the water, and these Bonetas after them at a killing rate. It was like the grey-hound after the hare. But it was not only these marine pursuers which demolished thousands of them. The gulls came down upon them like an avalanche, and swallowed them wholesale. The poor little fish had no peace any where. In the water, they were attacked by the big fish, and out of it, they fell a prey to the voracious gulls. Similar scenes we behold every day in human life.

The stormy Petrels (*Procellaria*, Lin.) (*Mother Carey's Chickens*, vulgarly,) were extremely abundant nearly the whole voyage. It is a small bird not as large as a robin, and occurs every where at sea. They fly gracefully and approach within a few yards of the ship. When they seek shelter on a vessel, then look out for a hurricane! We caught a number of them, by tying a small piece of fat to a cotton thread and throwing it over board from the stern. Hundreds would come to devour it, and in flying about it, in such numbers, every now and then, one would get his wings fastened by the thread, and thus we would haul him on board unhurt. After inspecting him and receiving on our hands the contents of his stomach which he would eject, we would let him fly again. They rise with some difficulty from the deck, and seem to be awkward in every movement except when on the wing.

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ON READING. NO. IV.

’Tis not a melancholy *utinan* of mine own, but the desires of better heads, that there were a general Synod; not to unite the incompatible difference of religion, but for the benefit of learning; to reduce it as it lay at first in a few and solid authors, and to condemn to the fire those swarms and millions of rhapsodies begotten only to distract and abuse the weaker judgment of scholars, and to maintain the trade and mystery of typographers.”

SIR THOMAS BROWNE.—*Religio Medici*.

If mere amusement, or the gratification of idle curiosity, were the proper object in reading, then the superficial mode which we have been condemning might be allowed; and if the great end were to make a show of knowledge, nothing could be better calculated to gain that end than the indulgence in miscellaneous reading which we have been seeking to correct. But the true end to be had in view, whatever be the more immediate object, should be *self-improvement*. And whether this improvement shall consist in the cultivation of taste, and purity of style; in the acquisition of information; in mental discipline or moral elevation; the *mind* must be actively employed, and careful *attention* must be given to what is read.

If we might venture to give a single precept comprehensively expressing our views on this subject, it would be this : *Be careful in the selection of books, and read with attention.* Dr. Arnold, in one of his excellent letters, has this remark : “ I would say, as a good general rule, never read the works of an ordinary man, except on scientific matters, or when they contain simple matters of fact.” This strikes us as very sensible ; and it will serve, in some sort, as a guide in the exceedingly difficult matter of selecting our books. For it is as important to know *what* to read as *how* to read ; as important to read good books, as to read them well.

Choose then good books, and read them with attention. Let the habit be formed of careful deliberation, and reflection on what is read. The subject before us should be mastered : at least, we should understand what the author means to say about it. This may be a slow process ; but it is a sure one to acquire true wisdom. And if this habit be early formed you will be able to read rapidly enough. Let it be borne in mind that the number of books read is not the important point. It is not the “*multa*,” but the “*multum*,” about which you should be most concerned. Remember that it is not the multitude of other men’s thoughts crowded irregularly into your mind, that will make you truly wise, and give you great weight of character. Wisdom is only to be attained by your own reflection on what you read : by the independent action of your own mind, sifting, separating, combining, and deducing sound principles from well selected materials. There is much good sense, if little poetry, in these lines of Cowper :

“ Knowledge and wisdom, far from being one,  
Have oftimes no connection. Knowledge dwells  
In heads replete with thoughts of other men,  
Wisdom, in minds attentive to their own.  
Knowledge, a rude unprofitable mass,  
The mere materials with which wisdom builds,  
Till smooth’d, and squared and fitted to its place,  
Does but encumber whom it seems t’enrich.  
Knowledge is proud that he has learned so much ;  
Wisdom is humble that he knows no more.”

It were easy to cite examples illustrative of the benefits of the course here commended. Grimké informs us, that in the outset of his career, he consumed a whole month in the perusal of a single moderate sized duodecimo volume : and yet he afterwards became a great reader. Demosthenes, as most of our readers are aware, frequently read, and with his own hand several times copied, the writings of Thucydides. And modern orators have made Demosthenes, in turn, the subject of oft re-



peated and laborious study; while the constant study of the works of an English Divine contributed in no small degree to the eloquence of one of England's greatest Parliamentary orators.

We do not attempt to give any precepts as to the best *manner* of reading. Many have found it profitable to connect *writing* with it. The celebrated Jonathan Edwards is said to have read much with pen in hand, making his annotations on the author as he passed on. Dr. Arnold advises to make abstracts of the works read. Conversation on the subject read, will greatly aid in obtaining a clearer view of them, and fixing what is worth retaining more deeply in the mind. That pithy sentence of Lord Bacon is familiar: "Reading maketh a full man, conversation a ready man, and writing an exact man." Reflection, also, is indispensable: and the mind of the reader ought always to be on the alert, and rigorously exercised. Without this, one may read incessantly, and yet

"Uncertain and unsettled still remain  
Deep versed in books, and shallow in himself."

And that other oft quoted saying of Bacon is worthy of continual remembrance: "Read not to contradict, nor to believe, but to weigh and consider."

In the life of Lord Bolingbroke, we find the following anecdote related as illustrative of the style of preaching of his teacher, a dissenting minister. "After having inveighed in his sermon, against pernicious doctrines, and enumerated many kinds, he thus continued: 'But above all other pernicious doctrines, beware, my beloved, of the *thorough-paced* doctrine; that doctrine, I mean, which coming in at one ear, paces straight through the head, and out at the other ear.'" So would we say to our readers: beware, beloved, especially of *thorough-paced reading*; that reading, we mean, which coming in at the eye, paces straight through the head, and out, we know not where—but certainly makes no lasting impression on the mind.

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*Arnold's Nepos, edited by Johnson, New York, 1846.*

We improve the occasion furnished by the publication of this work in our country, to exhibit the great improvement which has been and may be made in commenting on the classic authors intended for schools. It is every way adapted to awaken, interest, and elevate the minds of the young.

Milt. 1, 1. *Miltiades et antiquitate generis, et gloria majorum, et sua modestia unus omnium maxime floruit.* 'Miltiades was especially of all

distinguished both for the antiquity of his family, and for the glory of his ancestors, and for his own unassuming behavior.'

We have here a fine example of the figure of rhetoric called *poly-syndeton*, (i. e. 'much connected.')

This figure consists in the accumulation of the connective particles, so as to give a suitable gravity to the discourse, by allowing the mind to rest on the *addition* of each particular. The figure *asyndeton*, (i. e. 'unconnected,') would lay a stress on the *import* of each particular.

Milt. 11, 2. *Necque minus in ea re prudentia, quam felicitate, adjutus est.* 'Nor was he aided in that thing more by good fortune, than by his own prudence.'

Here we have an example of the *zeugma*, (i. e. 'junction.')

This figure is a grammatical construction in which one and the same word, besides its proper meaning in one relation, has also an improper or different meaning in another relation. This figure, according to the latest and most exact philologists, is a species of breviloquence or brachylogy and not of the ellipsis, as it has been commonly regarded. The idea or element supposed to be wanting is evolved, although in different ways, from the word or idea which is expressed. In this example, the generic idea is evolved from the specific as if it read thus: 'Nor was he aided in that thing more by good fortune, than (benefited) by his own prudence.'

Milt. 111, 4. *Nam si cum his copiis, quas secum transportaverat, interisset Darius.* 'For if Darius should perish with these forces, which he had brought over with him.'

*Transportaverat*, in the *oratio obliqua*, is here in the indicative instead of the subjunctive mode, because the historian slips or passes in his own mind from the *oratio obliqua* to the *oratio recta*. The difference cannot be exhibited in English.

Milt. 1v, 4. *Domi autem creant decem praetores, qui exercitui praecessent, in cis Miltiadem.* 'But at home they appoint ten generals, to command the army; among them Miltiades.'

*Creant*, 'they appoint.' The present is here used for the historic past, to give animation to the discourse. The same is permissible in English.

*Praetores*, 'generals.' The word *praetor* is used here, not in its technico-political sense as the name of a special civil magistrate, but in the meaning which it has by virtue of its etymology, as if *prae-itor*, one that goes before, scil. an army, i. e. a general. This meaning is retained in *praetorium*, 'a general's tent.'

*Præcessent*. The imperfect here follows a present tense, because

the present tense was used for the historic past. Of course it is a *constructio ad sensum*.

*Qui exercitui praessent.* This clause is *epexegetical*. It is added merely to explain *praetores*, which had preceded.

Milt. v, 1. *Hoc in tempore nulla civitas Atheniensibus auxilio fuit praeter Plataeenses. Ea mille misit militum.* 'In this emergency no state was an aid to the Athenians, except the Plateans. That (scil. state,) sent a thousand men.'

*Hoc in tempore*, 'in this emergency,' more emphatic, because more full, than simply *hoc tempore*, at this moment.'

*Auxilio fuit*, 'was an aid.' The dative here expresses the modal relation, for which otherwise no special provision has been made in Latin. Comp. *est mihi honori*, 'it is to me for an honor.'

*Ea*, 'that,' (scil. state,) for *ei*, 'those,' (scil. Plateans,) by the figure, called *synesis*, or *constructio ad sensum*.

Themist. 1, 1. *Hujus vitia ineuntis adolescentiae*, 'his faults of early youth.'

Here two genitives in different relations depend on the same substantive; or, more correctly, the genitive *ineuntis adolescentiae* depends on the simple substantive *vitia*, and the genitive *hujus* depends on the phrase complex substantive *vitia ineuntis adolescentiae*.

Themist. ix, 1. *Scio, plerosque ita scripsisse, Themistoclem, Xerxe regnante, in Asiam transisse.* 'I know that many have written thus, that Themistocles in the reign of Xerxes passed into Asia.'

*Ita* here expressed is the demonstrative, to which the subsequent clause corresponds. It is no more redundant than *that* in English.

Paus. 1, 1. *Pausanias, Lacedaemonius, magnus homo.* 'Pausanias, the Lacedaemonian, a great man.'

*Homo* is used here in a general sense, and the emphasis is on *magnus*. Comp. *Virum bonum et magnum hominem perdidimus*. Cic. *Homo* denotes a man generally, *vir* a man as opposed to a woman or child.

Paus. 11, 2. 'Qui litteras regi redderet. 'That he might deliver the letter to the king.'

The force of this clause is *telic*.

*Re* in *reddo* denotes *back*, not indeed to the place whence it came, but to the place where it should be, or to the person who has a claim to it.

## REMINISCENCES OF STUDENT LIFE IN GERMANY.

## NO. II. STÄNDCHEN.

Among the peculiarities of the *Burschen-Leben* may be reckoned their manner of testifying regard for a Professor. The presentation of a vote of thanks for his valuable services, or a complimentary letter would be quite too lifeless for them. The *cordiality* of the German character is particularly prominent in the student. It pervades the whole University-life, as will be seen from the facts developed in these reminiscences, if they be continued.

As I was sitting one evening in my snug little room on the second floor of No. 6, Kurstrasse, preparing to appreciate the lectures of the following day, by the careful study of the sections of Genesis, Psalms, and Matthew, that came in course, Herr Michaelis, my obliging friend who took so much pleasure in showing me all the *Merkwürdigkeiten* of Berlin, burst in upon me with the news that the students were just about bringing a *Ständchen* to Prof. Neander, and I must come along at once. We found a great crowd collected about the house, and could scarcely edge our way into the wide arched entrance that led from the street to the inner court. "Come," said my friend, "they will surely not take me for a Philistine for I have mounted a cap," and with this dragged me into the midst of the crowd of students. They had procured a marble-bust of Neander, and through a delegation from their number were presenting it to him, whilst the whole throng in the open court below were singing at the top of their voices a familiar hymn. His acknowledgments were presented from a window, and responded to by a *Lebehoch!* and the old students' song *Gaudeamus igitur*. "Now follows the punch," says my friend, as the whole mass began to flow up the broad flight of steps leading to the Professor's residence overhead, "and the sooner we get out of the way the better." "Punch?" replied I.—"To be sure," said M., to whom my anti-drinking principles afforded infinite amusement, "and at the Professor's expense! So machen Sie es gewiss nicht in America?" "Nein, wahrlich nicht!"

Not long afterwards my friend K. informed me that the students, who had attended the lectures of Dr. Strauss, (who is second Court Preacher and Professor of Homiletical and Pastoral Theology) intended to pay him a congratulatory visit, and invited me to accompany him. At 8 o'clock we assembled in the inner court of the University edifice and marched to the Professor's residence. Having heralded our design through a committee, we were admitted into the house. Throwing our caps and cloaks into the arms of servants who stood at the foot of the

stairs, we mounted to the second story, where the Doctor lives; we crowded into one of the parlors and placed eight or ten of the best singers around the centre table, who sang with a great deal of taste a favorite German anthem. As they were about closing, the Doctor, a portly gentleman of forty-five, made his appearance through the folding doors on the opposite side of the room. When the anthem was concluded, one of the oldest of the students stepped forward, and with an exquisite bow, commenced an address to the Doctor. In the name of his fellow students, he returned their warmest thanks to their revered professor for the unceasing pains he had taken to cultivate their minds and improve their hearts—that he had been the means of making them sensible of the dangerous tendency of the Rationalistic theology, which has done so much to injure the cause of the Redeemer—that in all his intercourse with them he had contributed to promote a living christianity—had taken so deep an interest in their personal welfare and had given them so much cause for gratitude, &c. The accompanying present was intended as a trifling testimonial of the value they set upon his services, &c. (The present was a Liturgical work, price 100 Thaler.) The Doctor replied with a great deal of feeling—thanked them for their kindness, and said many fine things. The first speaker responded with a hearty *Amen* to the pious wishes of the Professor, and then handed to him a copy of the venerable German hymn,

“ Allein Gott in der Höh’ sei Ehr’,  
 Und Dank für seine Gnade,  
 Darum, dass nun und nimmermehr  
 Uns rühren kann kein Schade, etc.

requesting him to join with us in singing a couple of verses. And then in full chorus and with feeling, we united our hearts and voices in this song of praise! This over, the servants came pushing through the crowd, with all sorts of refreshments, and as the room was too small, we adjourned to a larger one, which seemed to be a sort of family chapel. One end of it was semicircular and tapestried with rich crimson hangings. Here we enjoyed ourselves most rationally, and those of us who were not personally acquainted with our hospitable host, were introduced. We had splendid music, rich entertainment and instructive christian conversation. As we were leaving, we all received an invitation to tea on Saturday evening. We assembled at the good Dr’s again to the number of forty-two, and there I had a good opportunity of witnessing an exhibition of German christian society. After tea had been handed round, five of our best singers mounted the rostrum and sang an excellent piece of music. After this, one of the young men

walked up and delivered a short off hand speech, congratulating the Professor upon his happy selection of the evening so suitable to the occasion ; it was the 12th of March, the day of St. Gregorius, the patron of science and music, &c. We had several other clever speeches—then tea and cakes again—more music and speeches—and amid conversation—tea—music and other entertainments, the evening passed delightfully.

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THE SHEPHERD BOY'S DREAM.

BY REV. R. S. MACLAY.

The dew is on the lawn,  
 The sun is on the hill,  
 And gaily trips the timid fawn,  
 Along the mountain rill.  
 The shepherd's merry note,  
 Across the rolling lea,  
 In sweetest cadence seems to float,  
 And echo mirthfully.  
 The flocks are on the stream,  
 Leaping with joyous glee ;  
 While soft, the morning's mellow beam,  
 Gilds vale and forest tree.  
 I heard the voice of song  
 Sound from the leafy bough ;  
 Faintly its murmurs pass along—  
 Once more ! 'Tis silent now.  
 Beneath its spreading arns,  
 I slumber on the moss ;  
 A fairy strain of music charms  
 My tender heart. I toss,  
 With waking strength, the curls  
 Back from my heated brow ;  
 And catch the witching strain that whirls  
 Around the waving bough.  
 The sunbeams brightly glance,  
 Along the fragrant air ;  
 And airy forms of spirits dance  
 Among the foliage there.  
 A voice ! a voice ! a music strain !  
 Comes to my raptur'd ear !  
 'Tis past ! 'tis gone !—Again ! again !  
 That mellow note I hear.  
 “ We sing of the land of our fairy home,  
 With our spirit's minstrelsy ;  
 Where the sunbeams gild the restless foam  
 Of the deep surrounding sea.

"'Tis the land! 'tis the land of Sunny East,  
 'Neath the cloudless smiles of Heaven;  
 For the spirit's home—for the spirit's feast,  
     To the gentle fairies given.  
         In our wantoning,  
         With joyous wing,  
 We float in the balmy air;  
         And gaily sing,  
         The flowers of spring,  
     A song of welcome there.  
 Then the branches clapped their hands,  
     As the fairies ceased to sing,  
 And a fragrance fresh from distant lands,  
     Richly around did fling.  
 Now a voice of mourning rose  
     From that lovely Elfin tree,  
 As though it labored to disclose  
     A tale of grief to me.  
 Farewell! Farewell, to our fairy home,  
     To the fields in the soft yielding air  
 Haste we—oh haste, o'er the ocean to roam  
     To a country less lovely and fair.  
 Hark!—a sound of the rustling of wings,  
     Comes hurriedly on the gale;  
 And away, away, the timid things  
     Fly over the sea and vale.

## GEMS FROM THE GERMAN OF RICHTER.

**HERDER AND SCHILLER.** Both of them in their youth intended to become surgeons. But destiny said: "No! there are deeper wounds than those of the body,—heal the deeper;" and both obeyed.

Man often weeps in his sleep. When he awakes, he scarcely knows that he has wept. Such is life. In the life to come, thou wilt no longer know, that thou hast wept in this.

Men receive contradiction and instruction more readily than we suppose, but if it be violent, they will not endure it, even though it be well founded. The heart like a flower remains open to the gently falling dew, but closes to the rain.

A small injury throws us out of ourselves, a great one upon ourselves. A bell slightly cracked sounds dull, but if more widely cracked the clear sound returns.

Many flowers open to the sun; yet only one follows him. Heart! be as the sun-flower, not only open to thy God, but continually follow him.

## ROBERT FULTON.

Some thirty years since a young American was occupied in the construction of a few models of machinery, by which he might bend to the use of navigation an agent familiar to all, but which had only been pressed into the service of mechanics a short time before by the genius of Watt. Receiving no countenance in this country, he visited France, and at a diplomatic dinner given at Paris, by Chancellor Livingston, to a company of Plenipotentiaries, Statesmen and Literati, Fulton wearied the patience of the guests by endeavoring to show them that he could, if he had the means construct a boat that could stem the waves of the Hudson by the force of steam with the velocity of four miles an hour! But his plans were regarded as idle and visionarý, and repulsed he turned his face to his native country;—and it is interesting to listen to his narration, recounting the opposition he received from his own countrymen, the little disposition they evinced to give his project any countenance. Says he, “my friends were civil, but shy; they listened with patience to my explanations, but with a settled cast of incredulity on their countenances—I felt the full force of the language of the poet:

“Truth would you teach, to save a sinking land.  
All shun, none aid you, and few understand.”

As I had occasion to pass daily to and fro from the building while my boat was in progress, I have often listened, unknown, near the idle group of strangers, gathering in little circles, and heard various inquiries as to the object of this new vehicle. The language was uniformly that of scorn, sneer, or ridicule. The loud laugh often rose at my expense, the dry jest, the wise calculation of losses and expenditures, the dull and useless repetition of the ‘*Fulton folly*.’ Never did a single encouraging remark, a bright hope, or a warm wish cross my path. The day arrived when my boat was finished, and the experiment was made. To me it was a most trying and interesting occasion. I wanted some friends to go on board to witness the first successful trip. Many of them did me the favor to attend as a matter of personal respect; but it was manifest that they did it with reluctance, fearing to be partners of my mortification, and not of my triumph. I was well aware, that, in my case, there were many reasons to doubt of my own success. The machinery was new and ill-made, and many parts were constructed by mechanics unacquainted with such work, and unexpected difficulties might reasonably be presumed to present themselves from other causes. The moment arrived in which the word was to be given for the vessel to move. My friends were in groups on the deck. There was anxiety



mixed with fear among them. They were silent, sad, and weary; I read in their looks nothing but disaster, and, I almost repented of my efforts. The signal was given, and the boat moved on a short distance, and then stopped and became immovable. To the silence of the preceding moment now succeeded murmurs of discontent and agitation, and whispers, and shrugs. I could hear distinctly repeated: '*I told you so—it is a foolish scheme—I wish we were well out of it.*' I elevated myself on a platform, and stated that I knew not what was the matter; but if they would be quiet, and indulge me for half an hour, I would either go on, or abandon the voyage. I went below and discovered that a slight maladjustment was the cause. It was obviated—the boat went on; we left New York—we passed through the highlands—we reached Albany! Yet even then imagination superseded the force of fact. *It was doubted if it could be done again, or if it could be made, in any case, of any great value.*" Well may our countryman Willis, exclaim: "what an affecting picture of the struggle of a great mind, and what a vivid lesson of encouragement to genius is contained in this simple narration." His example should teach us the value of industry, indefatigable patience and perseverance—his difficulties lead us never to despair in any great enterprise, but even, if opposition should offer, to persevere until success crowns our efforts.

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SKETCHES OF A VOYAGE, AND RESIDENCE IN THE SOUTH  
SEA ISLANDS. NO. II.

On the 2d day of Jan. 1835, we made several islands of the Sandwich group: Hawaii, Maui, Morokai and Morokinne; and on the afternoon of the 5th, came in sight of Oahu, our destination. The evening being clear and free from haze, and the moon shining brightly, we were enabled to run until we dropped our anchor off "Diamond Hill," a high point of land, within sight, by day, of the town of Honorura. As I leaned over the rail of our vessel, gazing at the shore on our quarter, with its lofty peaks and lovely sleeping vales, clearly defined by the light of the full-orbed moon, I thought I never had witnessed anything so perfectly enchanting. The warm breeze which came in gentle puffs from the land, seemed to bear fragrance on its wings, and to discourse of the rich and sunny climes from which it came. The whole scene was to me like fairy-land. I thought of Capt. Cook, and fancied his having been here, and gazing with delighted eyes upon the very prospect before me, little dreaming, that after all he had endured, he should here be sacrificed by the very people to whom he hoped to prove a ben-

efactor and friend. The noise and bustle on deck, sailors running to and fro making the ship "snug" for harbor, and all the preparations for an arrival, effectually banished my meditations, and I descended to my state room, to sleep away the tedious hours, till the morrow should reveal all the new and strange features of the land to which we had come.

On the next morning early, the pilot boarded us; our anchor was weighed, and we sailed along within view of the beautifully indented shore, fringed with groves of tall cocoanut-trees, and the little silvan cottages of the natives sprinkled thickly over the extended plains.

When we arrived off the town, the natives of both sexes came around our ship by hundreds in their frail and light canoes, to have a peep at the strangers; and along the shore, in the vicinity, dozens of women, men and boys were seen diving into the sea head-foremost, seeking for *Echini*, *Sea-Urchins* and *Patella*. The natives of these islands are of a light copper, or bronze-color, usually tall and well formed; and the feet and hands of the women are diminutive enough to please the most aristocratic lady of any christian land. Many of the latter are extremely handsome, and very few are really homely. Their dress consists usually of a single garment, made either of common calico, or the native cloth called *Tapa*, which they manufacture from the bark of a species of *Morus*. The dresses of the women vary considerably according to their rank. The chiefs are clad in rich silks and satins, made in the European style, and do not, like the common people, confine themselves to a single garment: but among all the inferior classes, even those who are married to the white residents, the simple frock of calico of tapa constitutes, usually, the entire dress. This garment is as simple as it is possible to make it, its sole fastening consisting of a drawing-string around the neck. It is not bound at the waist, but suffered to hang loosely from the shoulders. Many of the women, particularly when walking or riding, wear an additional garment, which they call a *pau*. This is a long narrow piece of calico or tapa of six or eight yards in length, and is wrapped tightly around the hips. Shoes, or stockings, except among the females of rank, are not worn.

It is impossible, I think, to reside for any length of time among these islanders without becoming deeply interested in them. Their manners are very mild and agreeable, and their hospitality cannot be exceeded even by the North American Indians, who are celebrated for this virtue, wherever they are known. In the island of Oahu, where the King holds his Court, and where most of the foreign merchants reside, the natives are sophisticated by intercourse with sailors, and others of the lowest class of white people. They are not, therefore, fair speci-

mens of their race ; but on the islands where few white men reside, and these composed almost exclusively of missionaries, the natives are simple, gentle and virtuous. I have never been more kindly or hospitably treated than in the houses of these primitive people residing on islands possessing but little to tempt foreigners to form settlements. They have always been ready to aid me in collecting birds, shells, &c. in many cases, not even expecting remuneration for their trouble.

They are most valuable adjuncts to the naturalist and collector. Being so truly amphibious in their habits, they serve the conchologist admirably in place of a dredge ; diving into the sea, among the rocks, and searching the bottom for shells with wonderful pertinacity and success. They are also very successful bird-catchers. In the island of Oahu they procure the gum of a tree which they call "*Tu-tui*," and make of it a tenacious paste by moistening it with water. They smear little sticks with this paste and plunge them into the large pods of the banana, which contain a sweet juice of which the bird is extremely fond. The bird alights upon the gummed stick, and his feet are in an instant so firmly glued to it, that he cannot escape. By this mode, dozens of beautiful birds were brought to me almost daily, all alive and uninjured. The boys of the Island of Kauai pursue a different, and even more ingenious plan to effect the same object. They lay themselves flat upon their backs on the ground, and cover their whole bodies with bushes, and the campanulate flowers of which the birds are in search. One of these flowers is then held by the lower portion of the tube between the finger and thumb ; the little bird inserts his long, curved bill to the base of the flower, when it is immediately seized by the fingers of the boy, and the little flutterer disappears beneath the mass of bushes.

I have mentioned that the natives of these islands were generally well formed and graceful in their persons. This observation applies only to the common people, who use athletic exercise, and do not yield to the enervating influence of the climate. The Chiefs are, almost without an exception, enormously fat : women as well as men often weighing from 350 to 400 pounds. Indeed obesity is considered by them one of the greatest beauties ; but it belongs, by immemorial custom, exclusively to those of high rank. If a plebeian individual should unfortunately, by indolence or excessive eating, become very fat, it is his duty to commence the process of reduction without loss of time ; and if he should fail in his efforts, he finds it safest to pack up bag and baggage and retire to some other island where the eyes of royalty may not be pained by gazing on the counterfeit. The food of the islanders consists, principally, of an article called *Poc*, which is made by beating the

baked roots of the Taro (*Arum esculentum*,) or a sort of wooden trencher, with a large oval stone. The mass so prepared is mixed with a small quantity of water, and set aside for several days to ferment, when it becomes sour, and is about the consistence of paper-hanger's paste. This, with fish, either raw or baked, constitutes almost the sole food of the common people. Give a Sandwich Islander plenty of *poe*, with a raw fish or two at each meal, and he asks for nothing more; deprive him of his dear loved sour paste, and he loses his spirits, and is miserable. The manner in which he takes his food is primitive enough. He seats himself cross-legged upon the ground, with his calabash before him, and a fish, and a little pile of salt on a wooden dish by his side. His first two fingers are inserted into the paste, and stirred round several times until enough adheres to coat them thickly, when they are carried by a quick motion to the mouth, which is open to receive them, and are sucked clean: a little pinch, with the fingers is then taken of the fish which is perhaps floundering beside him, followed by a similar pinch of salt, to season the whole repast. This sort of feeding may seem to most of your readers, as fit only for savages, but I can assure them, I have made many a hearty meal from similar dishes, and found the fish (when I had succeeded in ridding myself of the *idea* of rawness,) very palatable.

In order to favor the natural inclination to obesity, the Chiefs use, in general, but little exercise, and eat enormously of the nutritious food before mentioned. They usually occupy about an hour at each meal, and at intervals of some 15 minutes, the eating ceases, and an attendant approaches to perform the "*rumi-rumi*".—This is the regular *kneading* process, recommended, some few years since, with such good effect, in cases of dyspepsia, by the celebrated Dr. Halstead. After this operation has been performed, the patient resumes his task with renewed gusto, and it is astonishing what vast quantities of *poe* a fat native will imbibe in the course of an hour's eating. Even the King, and the Royal family, although they dine sumptuously every day, can never be content to finish a meal without a dessert of *poe*. When strangers are present, their Majesties take their paste delicately with a spoon, but when alone, and under no restraint, they dip their royal fingers into the dish *secundum artem*. The King, *Kavikeaouli*, or *Tamchamcha* III, as he is now most frequently called, was, at the time of my visit, only about 20 years of age; stout, active, and remarkably well formed, but evidently inclining, like all the chiefs, to unwieldy fatness. When I first paid my respects to him, he was sitting in his *office*, a small house which he occupied as a place for the transaction of business. He was reclining at his

case, clothed in a pair of common Duck-pantaloons, and white jacket. He received me very kindly; offered me a good Havanna segar, and invited me to take a glass of wine with him. On the whole, I was very much gratified with my visit. Subsequently I became quite intimate with his Majesty; visited him frequently, and was admitted into the royal household as a friend. The King's palace is a large edifice, perhaps 100 feet by 60, standing in a great square, enclosed by a neat palisade fence, but without garden or any sort of decoration. The house is built in the native style, covered entirely with a heavy thatch of grass, which gives it the appearance, at a distance, of a large hay stack. It consists of but one room. The interior is beautifully carpeted with very fine matting, and large divans, composed of piles of matting, are numerous throughout the building. There is no furniture, and the only ornaments it contains, are several portraits, very well executed, representing old King TAMEHAMEHA, his son RIHORIHO and their queens.

During one of my earlier visits at the palace, his Majesty did me the honor to invite me to participate in a *lu au*, or picnic in the lovely valley of Nuano, back of the town. This *lu au* was got up at the expense of a number of the foreign residents; his Majesty and suite were of course invited, as I was also by them, on the day following. This the King doubtless knew would be the case, but desired to show his kindness and condescension by being the first to bid me to the feast. On the following morning, (Saturday,) a cavalcade, consisting of fifty or sixty persons, among whom was the King, and a suite composed of eight or ten of his prime favorites, assembled in front of the palace, and at a signal from his Majesty, we put our horses to the gallop, and went dashing at a tearing rate through the town, the King taking the lead on a splendid grey charger which he controlled with infinite ease and grace. We never drew rein until we had ridden five miles up the valley of Nuano, when a halt was called. We all dismounted on a beautiful circular plain, surrounded by *Pandanus* and *Kou* trees (*Cordia sebestena*.) and having a beautiful cascade of clear, cold mountain water in the midst. We found here about fifty natives who had been ordered to the spot early in the morning to groom our horses, prepare our repast, &c. Most of the party remained at the plain, but, as it yet wanted several hours to dinner time, I concluded to visit, with a party of foreigners, the great precipice, or *Pari*, three miles above. We accordingly remounted, and soon commenced the ascent towards the precipice. For the last two miles the climbing was toilsome and not a little dangerous. The soil was a sort of unctuous clay, rendered exceedingly slippery by recent rains, and large volcanic rocks were piled in the narrow bridle paths to

a most inconvenient degree. We arrived at length however, to within a few hundred yards of the *Pari*, where we left our horses in charge of several native boys, and proceeded on foot to the precipice. The wind was blowing a gale, so that it became necessary to remove our hats and bind handkerchiefs around our heads, and when we stood upon the cliff, some care was required to keep our footing, and to brace ourselves against the furious blast which was eddying around the summit. The *Pari* is an almost perpendicular precipice of about six hundred feet, composed of basaltic rock, with occasional strata of hard white clay. On the north is seen the fertile and beautiful valley of Kolau, with its neat little cottages, taro-patches, and fields of sugar-cane, spread out before you like a picture; and beyond, is the indented shore with its high and pointed cliffs, margining the ocean as far as the eye can discern. Down this precipice, on the north-side, is a sort of rude path, which the natives have constructed, and up this we saw a number of them toiling, clinging with their hands to the jutting crags above, to raise and support their bodies in the ascent. As they approached nearer to us, I was surprised to perceive that every man bore a burthen on his shoulder; some had large calabashes of *poc*, suspended one on each end of a long pole; and others carried living pigs similarly suspended, by having their feet tied together, and the pole passed between them. The porkers, although hanging back downwards, in a position certainly not the most comfortable, did not complain of the treatment, until they were deposited on the summit, when they tuned their pipes to a lusty squeal, and made amends for their former silence.

This spot is the scene of the last great battle of King Tamehameha, by which he acquired the sole and absolute sovereignty of the whole Sandwich group. The routed army of the petty island King was driven to take refuge among the wild crags of the *Pari*, and hither it was followed by the conquering forces of the invader. No quarter was shown. The fugitives were hunted like savage beasts, and, almost to a man, were hurled from the giddy height, and dashed to pieces on the frightful rocks below.

On returning to the plain, we found the preparations for dinner going bravely on, and, as the mountain riding and bracing air had given us an appetite, we cared not how soon it was dished up. In our absence, the natives had constructed a beautiful cottage, composed of interlaced branches of trees, covered with the broad green leaves of the \**Ti* and

\* This is a shrub about five feet in height. It has a broad, lanceolate leaf about three feet in length, and eight inches in breadth at the base, of a rich dark green color, and polished surface. It has a long, thick root, from which the natives make a sweet, intoxicating drink, which they call *Ava*.

*Pandanus*. The floor of this cottage was covered with *ti*-leaves arranged tastefully in circles, which was to serve as our table-cloth. Near us the native cooks were as busy as bees, preparing our repast. Every thing was cooked in the native style, in pits dug in the ground, into which heated stones had been placed. The viands consisted of fat pigs and fat dogs, turkies, chickens, ham and fish, with vegetables of various kinds, taro, sweet-potatoes, yams, bread-fruit, &c. Each pig and dog had a large hot stone sewed up within him, around which had been wrapped a quantity of *ti*-leaves, which were eaten as greens, and were excellent. The whole of the cookery was in fact very superior, and would have delighted the most fastidious epicure in Christendom. We had also various liquors; Champagne, Sherry, Madeira and Mountain-Dew, and were waited upon by men and boys, with chaplets of green bound around their heads, and their persons profusely ornamented with the "ferns and heather of their native vallies."

When the meats were removed, wine usurped the board; toasts were drunk, and songs were sung, and all was hilarity and cheerfulness.

I have spoken of the dog forming one of the dainty dishes of our *lu au* dinner. The very idea of eating a dog will, no doubt, shock the delicate nerves of many of your readers, but I can assure them, that, when properly prepared, it is delicious food. The animals, which the Islanders select for the table, are confined, like swine, in pens for some months before they are slaughtered, during which time their sole food consists of *poe*. They eat this greedily, and in a short time become excessively fat. They are then tender and juicy, and to my taste, very superior to a roasted pig. I should however prefer having them decapitated before they are served up, which would take from them at least a portion of their canine appearance. This the natives never do. They scorch or scald the hair off the animal, and cook it in the skin like a young pig. The dog is never bled, but their manner of killing it is barbarous in the highest degree. This is effected by tying a strong cord tightly around the muzzle of the poor animal, which suffocates it, and it dies in strong convulsions. A few days after my arrival in Oahu, while strolling alone through the town in the neighborhood of the King's palace, I saw a large fat dog lying on the ground in convulsions, with a cord drawn tightly around his nose. Supposing that some cruel boys had been guilty of this barbarous wantonness, and perceiving that the poor animal had no chance of surviving if the cord were loosened, as an act of mercy I seized a large stone lying near, and crushed its skull. In an instant a dozen natives of both sexes were down upon me, vociferating furiously all together, and seemed very well disposed to make a hostile at-

tack upon me. I could not comprehend a word they said, and it seemed likely that I was about to be involved in an awkward scrape, when a foreigner, to whom I had been introduced on my landing, fortunately happening to pass, appeased the enraged islanders by explaining to them that I was a stranger, and ignorant of the customs of the country. I learned from him who had proved himself my friend in need, that this was the mode universally employed for slaughtering the edible dog, and moreover, that the animal which I had so disfigured, had been fattened expressly for the King, and was to have graced his table on that day.

It is almost needless to say, that thereafter I was careful not to meddle with what did not concern me.

Towards evening the whole of the *lu au* party mounted their horses, and galloped down the valley into the town. As we entered the precincts we formed ourselves into a battalion, and reined in our horses to a dignified trot, in order to pass a troop of gay native ladies, who were returning from a visit to the western part of the Island. At the head of this equestrian cavalcade, I was surprised to observe the large person of Madam Kinau, (the sister of the King, and Queen Regent during his minority; a young lady weighing about 350 lbs.,) sitting astride upon a noble steed, which evidently made an effort to curvet and appear proud of its queenly burthen.

J. K. T.

*Philadelphia, Feb. 17th, 1817.*

COLLEGE RECORD.—During the last month the Anniversaries of the Literary Societies of Pennsylvania College were celebrated in Christ's Church, the one on the 4th, and the other on the 22d. The exercises on both occasions were of a very interesting character. The efforts of the young gentlemen were highly creditable to themselves, and reflected honor upon the Institution. The respectful attention manifested, during the delivery of the orations, by the large audiences assembled is the best evidence that they were interested and delighted.

*Order of Exercises of the Philomathæan Society:*

PRAYER by Professor JACOBS. ORATIONS—"Moral Sublimity"—*G. C. Maund*,\* Baltimore, Md. "The First Man"—*A. Essick*, Franklin County, Pa. "Misguided Genius"—*J. A. Bradshaw*, Lexington, N. C. "Joan of Arc"—*J. K. Piltt*, Philadelphia, Pa. Benediction—By Rev. Dr. KRAUTH.

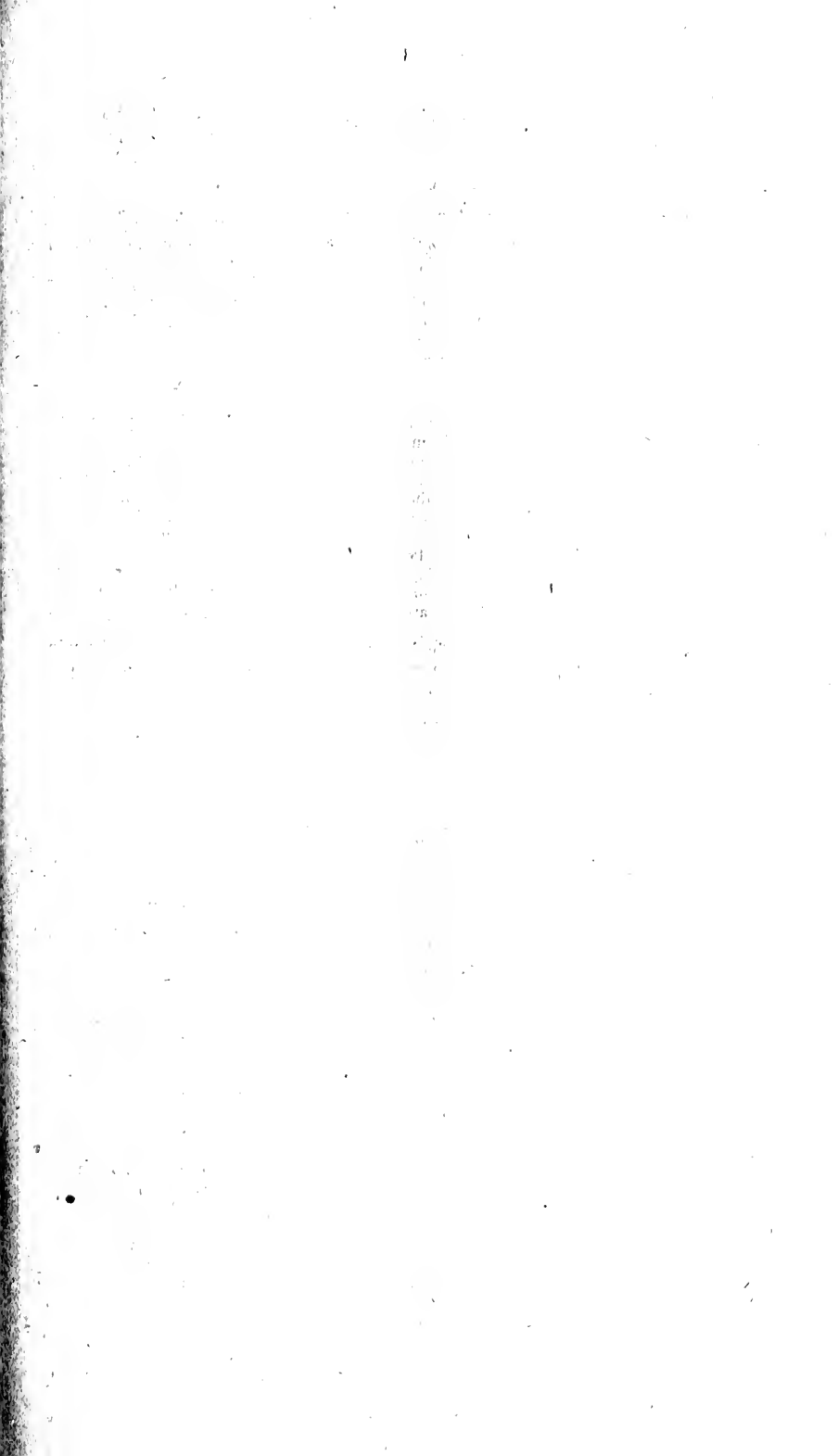
*Order of Exercises of the Phrenakosmian Society:*

PRAYER by Professor STOEVER. ORATIONS—"Noble Deeds"—*S. L. Harker*, Hillsboro', Ill. "The Persecuted Learned"—*E. McPherson*, Gettysburg, Pa. "The Wrongs of Ireland"—*D. J. Eyles*, Franklin County, Pa. "Progress of Human Rights"—*W. H. Witherow*, Gettysburg. Benediction—By Rev. Dr. KRAUTH.

The intervals between the different performances were enlivened with the sweetest strains of music by the Haydn Association, to whom we cannot feel too deeply grateful for the additional entertainment they always furnish on these anniversary occasions.

\* We regretted the absence of our young friend as we are certain he would have done well and shown himself a worthy representative of the Society which had honored him with its confidence.





# Pennsylvania College, Gettysburg, Pa.

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 JOHN K. PLITT.—*Tutor.*

PENNSYLVANIA COLLEGE has now been chartered about fifteen years. During this time its progress has been such as to gratify the most sanguine expectations of its friends. The course of studies is as extensive and substantial as that of any Institution in the Country. The *Preparatory Department* provides for instruction in all the branches of a thorough English, business education, in addition to the elements of the Mathematics and Classical Literature. The *College Course* is arranged in the four classes usual in the Institutions of this country.

The government of the students is as energetic as their circumstances seem to require. They attend three recitations a day, Church and Bible Class on the Sabbath, and are visited in their rooms so frequently as to preclude the danger of any great irregularities. They are all required to lodge in the College Edifice, special cases excepted.

The annual expenses are—for board, tuition and room-rent, during the winter session, \$63 62½; for the summer session, \$43 12½. Washing, \$10 00; and Wood, \$3 00. Total expense, \$119 75. Boarding can be obtained in town at \$1 25 per week.

There are two vacations in the year, commencing on the third Thursdays of April and September, each of five weeks continuance.

## Receipts during February.

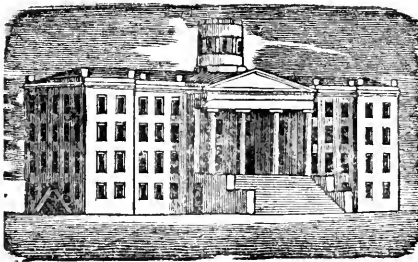
Rev. J. C. Hope, Lexington, S. C.	\$2 00	Vol. 1 & 2
W. E. Barber, Esq. Westchester, Pa.	1 00	: 3
Rev. J. Few Smith, Winchester, Va.	1 00	: 3
Rev. W. Heilig, Mount Joy, Pa.	2 00	: 2 & 3
Prof. Chas. Jucksch, Columbus, O.	1 00	: 3
Rev. J. R. Keiser, New Germantown, N. J.	1 00	: 3
Rev. Dr. Krauth, Gettysburg,	1 00	: 3
Rev. B. Keller,	1 00	: 3
Dr. F. E. Vandersloot,	3 00	: 1, 2 & 3
D. Middlecoff,	2 00	: 1 & 3
R. W. M <sup>r</sup> Sherry,	3 00	: 1, 2 & 3
D. Kendlehart,	2 00	: 1 & 2
Jacob Kuhn,	2 00	: 1 & 2
D. Ziegler,	1 00	: 2
A. B. Kurtz,	2 00	: 2 & 3
J. B. M <sup>r</sup> Pherson,	2 00	: 2 & 3
Jas. A. Thompson,	2 00	: 2 & 3
F. M. Schreiner,	1 00	: 3
H. J. Fahnestock,	1 00	: 3
J. F. Fahnestock,	1 00	: 3
Jno. Fahnestock,	1 00	: 3
Henry Reck,	1 00	: 3
L. P. Firey,	1 00	: 3
John A. Lynch,	1 00	: 3

THE

**LITERARY RECORD AND JOURNAL**

Of the Linnaean Association of Pennsylvania College.

APRIL, 1847.



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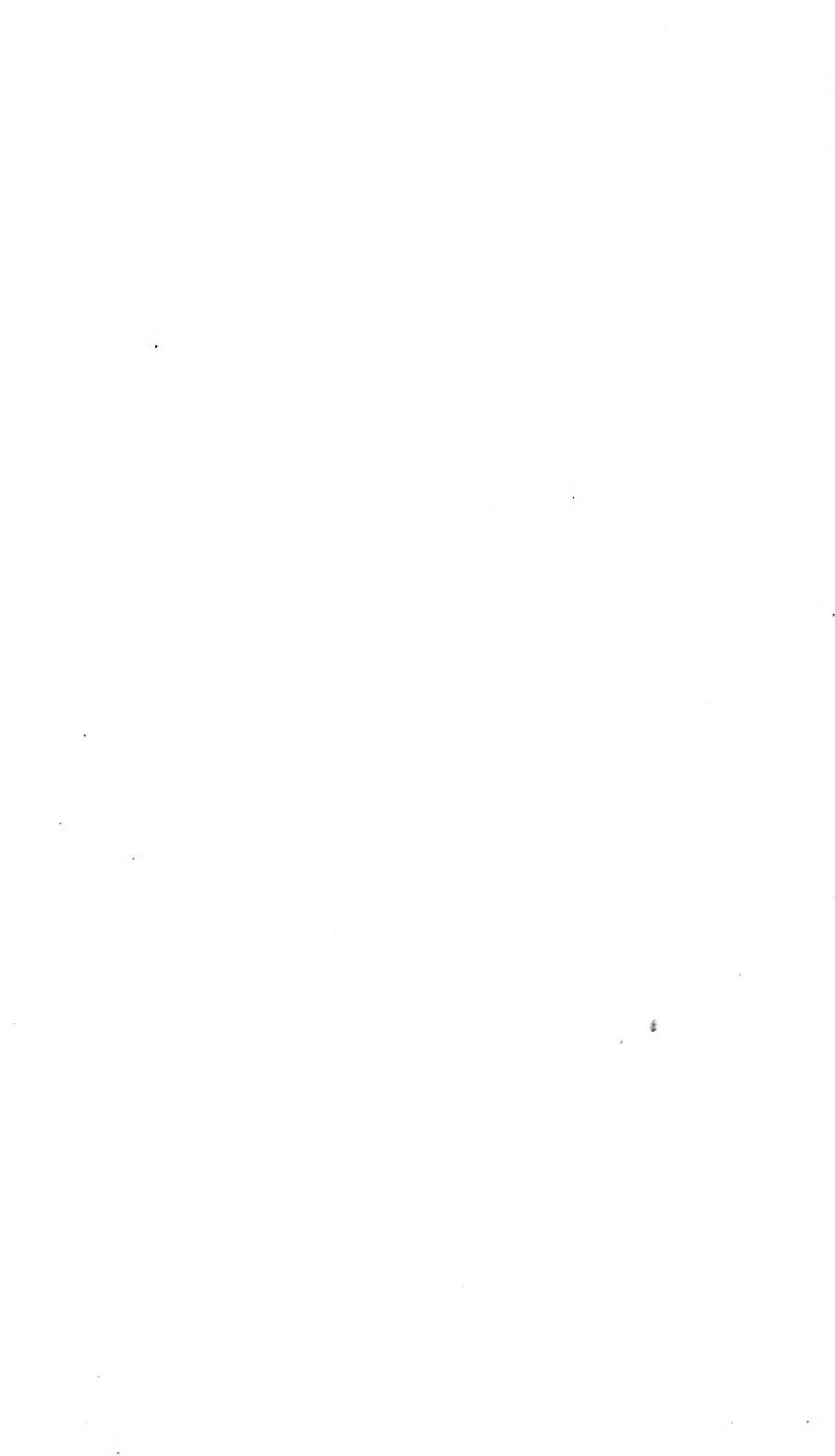
By a Committee of the Association.

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VOL. III.

APRIL, 1847.

No. 6.

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SKETCHES OF A VOYAGE, AND RESIDENCE IN THE SOUTH  
SEA ISLANDS. NO. III.

Early in February, my travelling Companion, Mr. N., and myself, visited the Island of *Kauai*, or *Atooi*, as it is named on the old maps. This is one of the leeward islands, and is at the distance of about one day's sail from Oahu.

The Brig "Avon," owned by my excellent friend Jno. Coffin Jones, Esq., the American Consul, was sent to this island for a load of goats, and we were kindly offered a passage in her. On Kauai but two white families reside, these being missionaries. There is no town on the Island, properly so called; but it is sprinkled all over with little native villages, which present a very picturesque appearance. Our object, in leaving Oahu, was to spend about five days here, and return, at the end of that time, in the same vessel, which was to make a second trip. We took possession, on our arrival, of a large native house near the beach, furnished us by Capt. Hinckley, the commander of the brig, who also left with us a native man as cook and *valet de Chambre*. On the same evening the Avon sailed on her return trip, and the next morning, to our surprise, we were called upon by the King, and two of his favorites. His Majesty had come several days previously, and informed us that he intended remaining another week. He, and his companions were on horseback; they were sitting on large Mexican saddles, having heavy wooden stirrups, and each horseman carried a long *lasso*, or noosed leathern cord, hung to his saddle-bow. The King informed us that one of his objects in visiting the Island, was to enjoy the sport of hunting wild cattle, which abound on the hills, and in the forests here, and that they had mounted their horses for a hunt, when he heard of our arrival, and had lost no time in calling to pay his respects. This we thought very kind, and quite respectful considering that he was a king.

On leaving us, which he did in a few minutes, he remarked that we were not well attended, and left with us one of his own body servants, saying, that in the afternoon he would order some provisions to be sent to us.

We were soon after called upon by the Rev. Mr. Gulick, the missionary, who insisted upon our leaving the poor tenement, which had been provided for us, and making his house our home during our stay. This at length we consented to do, stipulating for a native house in the vicinity of his dwelling, as a *sanctum sanctorum*, in which to prepare and deposit our collections, &c.

In the afternoon a native called at our cottage with a hand-cart filled with provisions of various kinds;—the present which the King had promised us. There was a very large hog, three pigs, three or four turkeys, and several pairs of chickens, all living, with vegetables in great abundance, taro, sweet-potatoes, melons, &c. The man informed us, in broken English, that the King had sent them to the “*hauris*” (foreigners,) who had just arrived, and directed him to say, that in *three* days he would send us as much more. His Majesty must have thought the “*hauris*” huge gastronomists, but, as we had determined to accept the invitation of the good missionary, we concluded to countermand the order for continued supplies.

We spent our time very agreeably at this island in collecting the various and beautiful objects of Natural history which abounded on it, and we were most hospitably and kindly entertained by the lovely family of the excellent missionary. After we had been here about four days, however, a heavy S. W. wind sprung up, blowing steadily towards Oahu, in consequence of which the Avon could not leave her anchorage, and we were compelled to remain where we were. Under some other circumstances this detention would not have been irksome; but we had made provision for only a few days' residence, and in a very short time all our ammunition, poison for preserving specimens, &c. were exhausted, and it was impossible to obtain even substitutes for these indispensable articles at this place. So we had nothing for it, but to yield to our fate with what grace we could, and spend the remainder of our forced sojourn in collecting plants, shells, and such other matters as the “*moth and rust would not corrupt.*”

Instead of five *days*, we remained five *weeks* on this island; and, barring the impossibility of preparing birds (my favorite avocation,) we were very happy. Our treatment in the house of the good missionary was uniformly kind and cordial, and when I bade adieu—probably forever—to him and his excellent and interesting family, my heart swelled with emotions of gratitude and affection, which I could not, and did not

attempt to express. Since my return home I have had the pleasure of receiving several very interesting and affectionate letters from this good man, and have endeavored, in my replies, to express at least a portion of my gratification in being thus remembered, and to assure him of my deep thankfulness for his uniform and unwearied kindness to the stranger. The King, *Kauikeaouli*, was of course, in the same predicament as ourselves, unable to return to Oahu. Several vessels had sailed expressly for him, but were compelled to put back after making the attempt. His Majesty soon became weary of hunting the wild cattle, and after the expiration of a week, would gladly have returned to his *own home*, as he affectionately styled it; but like his royal brother, Canute, the winds and the waves refused obedience to his behests, and, King as he was, he was compelled to bide his time. He was observed soon to become impatient and exceedingly fretful, snapping, like an ill-tempered cur, at all who approached him; and after the expiration of three or four weeks, although his people strove, in every way, to amuse him, he became so petulant and irascible, that his best friends and favorites feared to approach him. Like all uncultivated people, reverses fretted and soured him. He was unused to have his slightest wishes thwarted, and he frequently gave way to bursts of ungovernable and foolish passion, which usually terminated in a fit of childish sobbing and weeping. Thus did he conduct himself until the gale abated and one of his ships arrived and took him and his followers away. His joy was then as extravagant as had been his grief before.

Among the edibles of the Sandwich Islands, I have omitted to mention several articles of which the natives are extremely fond. These are, sea-animals of various kinds; the *Echinus*, or Sea-Hedgehog, a large ovoidal animal of the size of a man's fist, covered with stony spines four or five inches in length; and the black, lumpish substance, called *Beche la mer* by the French, who use ship-loads of it in the manufacture of some of the soups for which they are so celebrated. Both these animals are eaten by the islanders as they are taken living from the water: the spines of the *Echini* are knocked off against the rocks, and the soft contents of the case sucked out: the *Beche la mer*, after having the tough, outside skin removed, is eaten like a banana, which it, in form, somewhat resembles. But the animal which is considered by them the greatest delicacy, is the *Sepia*, or *Cuttle-fish*. This is a large, ill-looking creature, with an oval body, and eight or ten long arms or tentaculæ; within the cavity of the thorax is a sack, containing a fluid resembling ink, and, as the teeth are sunk into this, the black juice

squirts into the face of the masticator, while the long feelers are twisting about his head, forming a complete *caput Medusa*.

In the latter part of March, we set sail in our brig to return to the N. American coast, taking with us about thirty Sandwich Islanders, to assist the new American Company in the Salmon fishery. Six of these natives, or *Kanakas* as they are called, were permitted, by our Captain, to take their wives with them. When they embarked, they were accompanied by several of their friends of both sexes, who, I was surprised to observe, prolonged their visit even after the pilot had taken to his boat, and returned to the shore. We were then more than a mile outside the coral reef which surrounds this, and most other islands in the South seas, and nearly two from the shore. Still the natives remained to have the *last words* with their friends, and it was at least fifteen minutes after, when the vessel was fully three miles from the land, that they were observed to touch noses,\* and prepare for their departure. This preparation, with the women, consisted simply in removing their single calico dress, and binding it with a cord, on the shoulders. They then appeared without clothing, except the *maro*, or fillet of calico bound around their loins. The whole party then sprang into the sea, and made for shore. Upon my remarking to the Captain that this exposure seemed almost suicidal, for that, if they escaped drowning, there was great risk of their being bitten by the sharks which were known to abound near the edge of the reef, he replied that I might be under no apprehension; that the circumstance which had excited my admiration and filled me with terror, was of almost daily occurrence, and that an instance of an islander perishing in the water, by any mode, was scarcely known. The Sandwich Island boys are said absolutely to *play* with the large blue shark. A number of them repair together to the coral reef which surrounds the Island, each one being provided with a short, hard wood stick. After wading over the reef, they plunge fearlessly into the deep sea beyond, and by their noise and splashing, soon attract to them some large marauder, which is sure to be prowling in the vicinity. The boys swim around, calmly awaiting his approach, and even allowing him to get within biting distance. As the shark rolls upon his side with the benevolent intention of nipping off the head or one of the limbs of the venturesome youth, he receives a blow on the nose with the stick, which stuns him and causes him to turn. He is immediately attacked, in a similar manner, on the other side: and thus he is turned and cud-

\* This is a mode of salutation peculiar, I believe, to the Sandwich Islanders. They do not kiss, although their lips are necessarily involved in the salute. The nostrils are brought in apposition, and each party gives a vigorous *sniff* at the nasal appendage of the other.



geled, until, with his snout smarting and bleeding, he is fain to retreat before his persevering and pitiless little foes.

I have never witnessed this sort of contest, but have so often heard it described, both by the foreign residents and missionaries, that, problematical as it may appear, I have perfect confidence in its truth.

After my return to the North American coast, I spent nearly two years travelling in Oregon, for the purpose of studying its Natural history, and collecting specimens; and, about the middle of December, 1836, again visited the Sandwich Islands on my return to the United States. I was gratified to find all my old friends living and unchanged. They received me with their wonted kindness, and during the three months that I remained, their civilities and attentions to me never flagged.

I take great pleasure in embracing every fitting opportunity of expressing my great obligations to the resident merchants and missionaries of these islands, for the unvarying politeness and hospitality which I experienced at their hands.

One of the most important public events which occurred during this visit, was the death of the amiable native Princess, *Harietta Nahieuaena*, sister of the King. Loud wailing and lamentation was heard in every part of the island during several days and nights after the occurrence of this sad event. On the afternoon succeeding her death, I walked to the King's palace to see the mourners who were collected there. The large enclosed space surrounding the house was crowded with natives of both sexes, to the number of perhaps a thousand, all weeping in their loudest key. Young, active men and women, and the old and decrepit, who had just strength enough to crawl to the scene of action, Chiefs and common people, public functionaries and beggars, all were mingled in one common herd, bewailing in chorus their common loss. Then commenced the most disgusting part of the mourning ceremonies. A number of men and women, and even some little boys and girls, laid themselves upon their backs on the ground, and a man approached them with a small ivory wedge and a large oval stone in his hand. He commenced his operations upon the first of the victims, who was a fine looking young man, by placing the wedge between two of his front teeth, and striking it a hard and quick blow with the stone. This loosened it effectually; then by inserting the wedge upon the opposite side, and giving another similar blow, out flew the tooth in an instant. In this manner, every person who was lying there, lost some two, others three of his front teeth, and during the whole time the crying was not suspended for an instant. These ceremonies were continued for the

space of five or six days, during which time, it was said, that at least a thousand teeth had been extracted in the manner above described.

After lying in state for ten or twelve days, the remains of the Princess were deposited in the vault of the Island Kings.

*Philadelphia, Feb. 25th, 1847.*

J. K. T.

LOOSE LEAVES FROM MY JOURNAL. NO. VI.

BY J. G. M.

THE BRITISH MUSEUM.

A naturalist abroad will, of course, seek out every collection, private and public, that is of any special interest, and in most instances, unusual facilities of examination are afforded him. You can always distinguish a naturalist even among a crowd of spectators in a museum; there is a *knowingness* in his inspections, a *specialness* of observation; a comparison of one animal, mineral or plant with others of the same genus, and a fixedness of attention to many objects superficially or entirely passed over by the mere gazer, that always distinguishes the connoisseur.—“I see you are a naturalist,”—said a stranger to me one day in a public museum. “How do you know that?”—I asked. “From your manner of looking at this collection,”—was his reply. This gentleman was a returned missionary from Ceylon in bad health, and was now amusing himself with natural history studies, which I regard as the most efficient dispellers of *ennui* or sick room tædium that any man can employ.

No palace, cathedral, monument, church, park, exhibition, gallery of pictures, or the thousand other “lions” of London, interested me so much as the British Museum. I happened to have one of the Professors as a correspondent, and I was most cordially welcomed by him, and introduced to five or six of his colleagues, among whom are names which have gone to the ends of the earth. Day after day, I went into their *sanctum*, an immensely large room, where they are all at work, writing, describing, cataloguing, arranging, drawing, or painting figures for illustrated books. I was happy in meeting here a countryman who was painting an animal for Audubon and Bachman’s great work on the *mammalia* of our country. Does it not appear strange that an American must come all the way to London to paint an American animal? Yet, so it is. It was a rare one, it is true, and found in no American collection, but brought to London by the agents of the North West Fur Company. I never before felt the truth of an observation made to me some years ago by a distinguished countryman of ours, said he: “If

you want to see a good collection of American Natural History, you must go to Europe." And no wonder; the governments encourage it; they or learned societies, in part supported by governments, send out agents, collectors and travellers to bring home the productions of every climate, and country, and there they now stand open to the observation and study of every body.

It seems almost absurd to attempt to give a description of the British Museum in a single article like this, when the reader is told, that the synopsis or general description of its contents, intended for the use of persons, who, like the generality of its visitors, merely take a cursory view of it, occupies 400 closely printed pages. I can now only take a glance at it and that a very superficial one.

The British Museum, which has now become one of the most splendid national collections in the world, was established in 1759. The vast and very extensive library of books and manuscripts, together with the artificial and natural curiosities collected by that great physician and naturalist, Sir Hans Sloane, at an expense of \$200,000, was purchased by Parliament for \$80,000, and this is the foundation of the museum. The old Montague House, in which it was deposited, was bought for \$40,000, and this building was 216 feet long and 57 high. But since that time, an entire new edifice has sprung up—a magnificent and immensely large structure, worthy of the British nation. I believe there are at present more than 30 rooms occupied by the collection, and when you consider that many of these are twice as long as Pennsylvania College, you may have some idea of the vastness of the establishment.

There are some apartments to which strangers are not admitted, but under the wing of my friends the Curators and Professors, I was conducted into many a room forever closed to the mere laical visitor. It was a glorious privilege, and I was sometimes almost overcome by the inconceivable extent of the literary and artistic treasures there collected.

The library contains 300,000 volumes, and is constantly increasing. Five thousand dollars a year are expended in the purchase of *old* and *foreign* publications, and the library is further enriched by *a copy of every new work published in Great Britain*. The whole range of rooms on *one floor only* allotted to books and MSS. even in the *old building* was 900 feet in length, about seven times as long as your College edifice, and I presume that now, it cannot be less than 1200 feet. The collections of minerals and fossil organic remains occupy galleries more than 600 feet in length.

The first apartment you enter, in the regular course of your circuit, is the Ethnographical Room. It contains 61 large cases full of all sorts

of implements, dresses, instruments, divinities, models, figures, fruits, sculpture, hieroglyphics, ornaments, and ten thousand other things of Indian, Chinese, North American and African nations.

The Mammalian Saloon has 52 large cases, and all the animals are, of course, systematically arranged, and so set up, that they can be seen to the best advantage. In four table cases, i. e. horizontal, is arranged a series of the skulls of the smaller mammalia, to explain the characters of the order and families, which is indispensable to the comparative anatomist.

The *birds* are contained in 166 cases, and I suppose there are 6 or 7000 specimens. The eggs of birds are placed in the smaller table cases along the sides of the rooms; they are arranged in the same series as the birds in the upright cases.

The *univalve shells*, in 31 horizontal cases, are shown to great advantage, and the *bi-valves* in 15. Here the conchologist has a glorious treat, such a one as is seldom afforded.

Suspended from the walls of this section of the zoological gallery are 116 portraits of distinguished men.

In another section, you see an immense collection of reptiles and Batrachian animals, preserved dry and in spirits, and near them, the first part of the collection of the hard part of radiated animals, including the sea eggs, sea stars, and encrinites.

In another apartment there are 43 cases of monkeys and squirrels; 20 cases of corals, and in another 26 of fishes, and 11 of *crustacea*. The room for the minerals is immensely long, and contains 60 large horizontal cases full of them; and it is well known to oryctologists, that this museum contains one of the richest collections of fossil organic remains in the world.

The Gallery of antiquities is almost endless. The famous Elgin marbles are known the world over. The Egyptian saloon is almost unequalled, and the infinite number of medals, coins, inscriptions, and every thing ancient that is curious, I cannot begin to mention.

This British museum is a great place of resort, and crowds of visitors constantly throng its long saloons. Admission is free, and you are not even allowed to give the men a fee who take charge of your cane and umbrella. It is not so on the continent; there, every one expects and receives a fee, and well powdered, liveried, white stockinged lackeys who keep your cane, hold out their hand and bow obsequiously when you drop the Kreuzer. More than 550,000 persons visited this museum in one year, and the whole establishment is a magnificent and enduring monument to the liberality and scientific zeal of the British

Government.—We shall have something similar when our present grand collection of the Exploring Expedition and that of the National Institute, are all united under the care of the Smithsonian, which has begun its operations with so much promise of brilliant success.

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ON THE DOCTRINE OF LATENT OR INSENSIBLE CALORIC.

1. It is well known, that when a body is condensed or its particles are brought into closer proximity to each other, heat is produced. Thus, when air is suddenly condensed in a syringe, sufficient heat is evolved to light tinder; and when a piece of metal is hammered on a smith's anvil, for some time, it is said, that it can be rendered red-hot. Thus too, friction and all other means, by which the condensation of particles can be produced, are attended with the same result. It is in this way, that the Indian and hunter are said to have occasionally lighted their fires. It is in this way that many explosive compounds are kindled, and the spark is evolved "from the smitten steel."

Now in all these cases caloric, which did not appear to exist there before, is set free or given out from the bodies acted upon. Mechanical action did not form it, but only, as it were, drove it from its hiding places. It was in the bodies, but in their ordinary state, there was no evidence whatever of its existence there. Hence it has been called *latent* or *concealed* caloric; and, because it did not affect the thermometer or the sense of touch, it has also been denominated *insensible caloric*.

2. By a reverse process: that is, by causing the volumes of bodies to expand, heat seems to be lost, and cold produced. Thus when air, and other bodies are rarified, their temperatures become reduced. A portion of the caloric, which constituted their *temperature* or the degree of their *sensible* heat, becomes lost in the expanded bodies. This is obviously the reverse of the preceding. Whatever of sensible caloric is lost is added to the insensible, and, *vice versa*, whatever is taken away from the insensible or latent caloric by condensation is added to the sensible temperature. It follows, therefore, from this, that the sum of the sensible and insensible caloric of any body is always the same. Further, that, as expansion produces cold by rendering caloric insensible, which had previously been sensible, the more we rarify a body the more do we increase its power of holding heat in a concealed state, and consequently a vacuum must have the greatest capacity for caloric. This, to a very great extent, will explain the intense cold which is known to prevail in the more elevated portions of the atmosphere; for if a portion of air, from near the surface of the earth, were carried upwards

it would become constantly colder by expansion, until it would, at length, have so much of its sensible caloric taken away in the form of insensible, that its temperature would be reduced to, at least,  $100^{\circ}$  below that of freezing water.

3. A curious conclusion is derived from the preceding statements, and it is principally for the presentation of it to your readers, that these lines have been penned. The conclusion is, that the interplanetary spaces, or the spaces between the atmospheres of the planets, and that profound abyss existing between the myriads of stars which float in immensity, though inconceivably cold, yet contain an immense amount of *insensible* caloric; and therefore, if caloric be matter, there is properly speaking, no such a thing as a *vacuum*, but the Universe is a *plenum*. Hence there is an immense ocean of calorific matter, which fills all space and every pore of matter, and which is in no degree dependent for its existence or source to sun, or star.

4. It would appear, that the existence of heat in a sensible form is mainly due to the impenetrability of matter; that is, that two bodies, or two particles of matter cannot occupy the same space at the same time. In proportion as the number of particles of ponderable matter increase in a given space, or as their density increases, the insensible caloric of that space becomes sensible, and the temperature rises. This may be regarded as the *general* law; for different kinds of matter, though of equal density, do not give out precisely the same amount of caloric under the same circumstances; and this is, no doubt, to be referred to a specific attraction, which each has for it, and which, therefore, causes a slight modification of the general law.

5. In the case of fires or of ordinary combustion the resulting heat is not generated, but merely liberated during the process. The fuel, but especially the oxygen of the air, contained previously in a latent form the heat, which now makes itself to be felt. The new compounds, which are formed between the oxygen and combustible, have a smaller capacity for caloric than the materials had in their original form, and consequently caloric, which was before incapable of affecting the thermometer or the sense of touch, now becomes sensible. Combustion, therefore, instead of forming caloric, only gives us a draft upon that vast, unexpended and inexhaustible fund, which is co-extensive with the Universe itself.

6. We must not suppose that the sun and stars, which shine with so much splendor, and which pour forth, from their fervid masses, an ocean of fire into the abyss of space, which surrounds each, are the sole fountains of heat. The former is indeed the great dispenser of the

heat to our earth and its sister planets, which causes summer to emerge from the dreariness of winter, but it is only affording us gradually a portion of its superfluous temperature with which it was originally created. The earth gives decided evidences that its temperature was once far more elevated than at present; and we doubt not, that originally the planets too, as well as it, had the same temperature as the sun, but being small bodies, they have, by cooling, long since reached the point of equilibrium; and that at some distant day the sun will wander through space as cold and rayless as the frigid earth. And however, high its present temperature may be, the total amount of heat which it contains may be very small when compared with that vast amount of insensible heat which fills all space.

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#### ON THE PROBABLE EXISTENCE OF UNDISCOVERED PLANETS.

BY D. KIRKWOOD, OF LANCASTER, PA.

Previous to 1845, when Astrea, the fifth asteroid, was first detected by the keen eye of Professor Hencke, the hope of discovering any new planetary members of our system seems to have been generally abandoned. The two recent additions, however, to the number of planets render it now an interesting inquiry whether the exploration has been sufficiently complete to furnish grounds for deciding upon the probability or improbability of further discoveries. We shall consider :

1. *Whether there are probably any planets within the orbit of Mercury.* The distance from the centre of Jupiter to the nearest satellite is about three times the equatorial diameter of the Primary. If, therefore, we suppose the distance of the nearest primary planet to have the same ratio to the diameter of the sun, the orbit of such planet will be somewhat less than three millions of miles from the sun's centre. Consequently, in the interval of thirty-seven millions of miles there may be four planets, the orbit of the nearest having the dimensions above stated, and their respective distances increasing in the ratio of Mercury's distance to that of Venus. Such bodies, however, in consequence of their proximity to that luminary, could hardly be detected, except in transiting the sun's disc.

2. *Whether there be yet any undiscovered asteroids between Mars and Jupiter, or any similar bodies in the other interplanetary spaces.* We think no sufficient reason can be assigned for concluding that none of this interesting group of planets have hitherto escaped observation; but if such bodies exist there can be little or no prospect that they will ever become known by their disturbing influence upon any of the other members of the system. Consequently there remains no other method

of discovery but that of thorough telescopic exploration, which would, indeed, be almost a hopeless task, were it necessary to examine minutely every part of the Zodiac. But as these planets perform their revolutions in a little more than four years, it is obvious that by making regular and particular observations in two opposite points, any moving body discoverable by the telescope employed, must necessarily be detected in one half of that time. For half a century to come, this space between Mars and Jupiter will perhaps afford greater probabilities of successful examination than any other.\*

In the immense intervals between the orbits of Jupiter and Saturn, Saturn and Uranus, and Uranus and Le Verrier, it is possible that similar bodies may circulate, at least equal in number to all the planets, primary and secondary, now known; but at these great distances bodies so small could scarcely be rendered visible by any instrument yet constructed.

3. *Whether there be any planets beyond the orbit of Le Verrier.* The distance of the nearest fixed star, *Alpha Centauri*, is more than two hundred and ten thousand times the radius of the earth's orbit, or seven thousand times the distance of Le Verrier's planet.† It would certainly be presumptuous to affirm that this vast interval is a cheerless blank. On the contrary, the existence of planets more remote than Le Verrier, may, we think, be regarded not only as possible, but as highly probable; and if their magnitudes be equal to those of Uranus and the new planet, undoubtedly one, if not more, may be descried by our telescopes. Of this, however, there is not much probability for at least half a century to come; for, as the illustrious astronomer who developed the planet which now bears his name, justly asks: "Who is there, who would resolve to search for a telescopic star in the twelve signs of the Zodiac?" But if, in the course of fifty or a hundred years, astronomers should detect, in regard to the new planet, any want of agreement between theory and observation, the mathematician will again be enabled to calculate the longitude of the disturbing body; and, it is evident that when we shall have reached the limit of *optical* discovery, the orbit of at least one more exterior planet, if any exist, may be accurately determined.

\* This is altogether improbable. The asteroids between Mars and Jupiter collectively occupy the place of a planet, otherwise wanting in the series.—ED.

† The Linnæan Journal of December, 1846, contained some estimates of the distance, period, magnitude, &c., of the new planet. These calculations were based upon the assumption that its true distance was that indicated by the law of Bode. The observations, however, which have been made, although necessarily insufficient for determining with accuracy the elements of its orbit, render it probable that its mean distance is no more than about thirty times that of the earth, or, 2,859,999,600 miles. The corresponding period is about 165 years.



4. *Whether there be any satellites yet undiscovered.* It is by no means unlikely that Uranus has several satellites which have hitherto escaped the observation of astronomers. The new planet is doubtless attended by a considerable number; some of which, in favorable circumstances, might possibly be reached by our most powerful instruments.

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THE AGE OF PERICLES. NO. III.

In connection with music, the arts of sculpture, painting and architecture were advanced to a degree of perfection never since surpassed. Pericles found the treasury of the city enriched to triple the amount of her revenues. The magazines of Athens abounded with wood, metal, ebony, ivory and all the materials of the useful as well as of the agreeable arts. The luxuries of Italy, Sicily, Cyprus, Lydia, Pontus and Peloponnesus were imported. Experience had taught them greater skill in working the silver mines of Mount Laurium, and the splendid marble veins had been recently opened in Mount Pentelicus. Here then were all the materials at hand, necessary for the sculptor and architect, under the control of Pericles, with a taste to appreciate and direct, and wealth and power to gratify all his wishes.

The city was speedily adorned with temples and porticoes, and theatres, and baths, and statues, and altars, which in the language of ancient panegyric rendered Athens the eye of Greece. Sculpture and painting existed before the age of Pericles, in a rude form, it is true; this great statesman, by his unbounded patronage, brought them to perfection. He reasoned correctly, when he asserted, that it was the duty of a statesman to provide not only for the army and navy, and the judges, and others immediately connected with the public service; but the great body of the people demanded his constant and anxious care. The erection, therefore, of public buildings, splendid and imposing, would give an impulse to the arts, would stimulate domestic industry, and leave an imperishable monument of the glory and power of Athens. Under the influence of such motives he boldly opened the treasury, and expended about 4000 talents, a sum which then might command as much labor as six or seven millions sterling at the present time. Such an impulse was given to the arts of design, and the work in general necessary for the embellishment of the city, that the most ingenious strangers from all quarters flocked into Athens as the best market for their skill.

It was the peculiar felicity of Pericles to find his native city not only well provided with all the materials of art, but also the artists who knew how to employ them to the best advantage.

The most distinguished sculptors who adorned this age were Phidias, Polycleetus, Scopas, Acamenes and Myron, and their cotemporary painters equally distinguished were Panænus, Zeuxis and Parrhasius. Specimens of the genius and skill of the latter have not come down to modern times. Their paintings were generally made on wood and other perishable materials. But we can learn from cotemporary writers that they attained the perfection of the art, conveying in the posture and face, and in general in the expression of the whole figure, not only pain and sorrow and the fierce and turbulent passions of the soul, but what may be said to be the triumph of the art, representing and recommending the social affections. Xenophon tells us, that in the days of Socrates, they represented by the outward air, attitude and features, whatever is most engaging, affectionate, sweet and amiable of the inward sentiments and character. So that as early as Socrates the art of painting was carried to a considerable degree of perfection.

In statuary the merit of Phidias was acknowledged by all. He was employed by Pericles to superintend all the embellishments of the city, so that his own hands added to them their last and most valuable ornaments. The most wonderful production of this artist is the statue of Jupiter Olympus, in Elis. "It was sixty feet high, sitting on a throne, and touching the roof with its head. This vast colossus was composed of gold taken in the sack of Pisa and of ivory, then almost as precious as gold, which was brought from the East by Athenian merchantmen. The god had an enameled crown of olive on his head, an image of victory in his right hand, and a burnished sceptre in his left. His robes and sandals were variegated with golden flowers and animals. The throne was made of ivory and ebony inlaid with precious stones. The feet, which supported it, as well as the fillets which joined them, were adorned with innumerable figures. Among which you perceived the Theban children torn by Sphynxes, together with Apollo and Diana shooting the beautiful and once flourishing family of Niobé. Besides these, there were statues representing the various gymnastic exercises and paintings, on the pillars supporting the throne, by Panænus the brother of Phidias, representing the Hesperides guarding the golden apples, Atlas painfully sustaining the heavens with Hercules ready to assist him, Salamine with naval ornaments in her hands, Achilles supporting the beautiful, expiring Penthesilea."

The services of Phidias, and under him the most distinguished artists of Greece, were employed during the period of fifteen years in the embellishing of his native city. During this short period he completed the Odeum or theatre for music, the Parthenon or temple of Minerva,

the Propylæum or vestibule belonging to the citadel, together with the sculptured picturesque ornaments and immortal works, which, as Plutarch remarks, when new, expressed the mellowed beauties of time and maturity, and when old still retained the fresh charms and alluring graces of novelty. The Parthenon which still remains justifies this panegyric. It is 21,729 inches long, composed of beautiful white marble, and acknowledged by travellers to be the noblest piece of antiquity existing in the world. The Pæcile was a splendid edifice painted by Panæus, designed to contain paintings of the most important events in Grecian history. Here was painted the siege of Troy, the victory of Theseus over the Amazons, also the battle of Marathon, where the only distinction allowed Miltiades was to be represented more conspicuously than the rest. What a stimulus to glorious achievements must have been such an edifice containing the collected heroism of the whole nation! The whole extent of the Acropolis, above six miles in circumference, was so diversified with works of painting and statuary that it became one continued scene of elegance and beauty. The crowning work of this great master was his statue of Minerva set up in the Parthenon. The first effect of these works of art, so unrivaled in their excellency, unquestionably was to increase their devotion to the deities represented in such a masterly manner. Such splendor and wealth and pomp could not fail to strike the minds of the multitude with awe. If the unaided genius of man could produce such a representation, what must be the originals? But these arts, which at first were hand-maids to virtue and religion, which elevated and refined the feelings, degenerated into sources of impurity and licentiousness. To paint a Venus, or to make her statue combining in one all the charms of form and face, is but to pander to the lowest passions of our nature. Licentious pictures are mentioned by ancient writers as a general source of corruption, and considered as the first ambush that beset the safety of youth and innocence. If moral excellency, patriotism, disinterestedness, or some form of public or private virtue, or piety is not to be illustrated, these arts tend to degrade rather than elevate, and the skill and genius of the artist are employed in sapping the foundations of all that is holy and good in man. Thus it was at the close of the life of Pericles and subsequently. He sought to embellish the city, and with those embellishments, introduced corruption and crime. Other causes, however, were equally operative and far more powerful in their nature. The very genius of her religion tended to licentiousness, and when the frugality and sobriety of the laws of Solon were violated by the introduction of every species of luxury, and the public purse filled by contributions from the auxiliary

States was opened, and its contents lavished indiscriminately upon an idle multitude, what other consequences could be anticipated?

In addition to this, we must not forget the dissolute school of the accomplished and wanton Aspasia. Previous to the period under consideration woman was secluded and confined to the retirement of the domestic circle, except on certain festival occasions. It was considered immodest for a female to be seen abroad. At home she was admitted to the privilege of superintending the affairs of the household, but never to an equality with her husband. Ignorant and degraded, unlike her sex in the rival state of Sparta, she was the slave of her master. But now from the fruitful and sunny plains of Asia where the colonists had learned the refinements and luxuries of the East, Aspasia returns to the mother city, endowed with every personal charm to captivate, and richly stored with those mental attainments, which render conquest not only secure but permanent. With these attractive charms she brought passions fanned into licentiousness by the nature of her education and manners, lewd and wanton from the customs of her native country. If philosophy and the arts passed from the East to the West, from Ionia to Greece, they were accompanied by the corruption which had so long been nourished by the sensuality of Asia Minor. Aspasia, with all the defects which belonged to her character, must have been a wonderful example of female accomplishment, else Pericles would neither have been guided by her counsels, nor the venerable Socrates sat at her feet a humble disciple. It is said, that her instructions helped to form the greatest and most distinguished orators of Greece. However, this may be, her example and instructions helped to introduce a bold and opened shameless licentiousness, such as had not before been seen at Athens. From this time forward laxity of morals advanced in an increased ratio, until this city became emphatically, if not the most, one of the most dissolute, in all Greece.

At the same time, there flourished at Athens the sophists, who, possessing in truth, the art of persuasion in a high degree, and skilled in all the rhetorical rules of the day, employed their genius and skill not in recommending virtue, but in acquiring fame and wealth, and pandering to the desires of their wealthy pupils. They sought the friendship of the rich and the many. They professed the knowledge of every art and science, and during the celebration of the great Grecian festivals had presented to them the finest field for the display of their power. Their manners were elegant, their life splendid, and their language glowing and harmonious; in a word, they were the polished gentlemen of no principle but selfishness; by their polish and taste captivating the

young, decking out a false philosophy with meretricious ornaments, and instilling into the mind those lessons of morality, exemplifications of which the school of Aspasia was daily exhibiting. They were the infidel gentlemen of Pagan Greece furnishing lessons which not only tended to undermine the existing religious views, but laid the foundation for all the sophistry on that subject, which has subsequently appeared.

Against these time-servers, these destroyers of morality and correct reasoning, Socrates lifted up his voice. He exposed them to ridicule, showed the fallacy of their reasonings, and triumphed over them. Confining himself in his reasonings within the limits of what could be known by man, and reasoning from facts, by exhibiting the truth in its native simplicity, he showed that his opponents were mere theorists and had erected superstructures without foundations. The cup of hemlock and his parting discourse with his disciples so full of tenderness teaches us how short-lived was his triumph, and how deeply seated in the minds of the people were the principles and reasoning of his enemies. Without dwelling longer on this topic, which alone would furnish an interesting and instructive essay, and without deducing those practical reflections, we will hasten to a conclusion, which the subject awakens in such abundance. The age of Pericles then, the glorious age of Greece, presents us with a picture full of interest and instruction. Pericles stands on the fore-ground proudly-eminant. With a mind vast and capacious, a genius at once lofty and versatile, eloquence so overpowering that he was sur-named the Thunderer—he employed all for the elevation of himself and his country, and having raised his country to a pitch of glory unexampled in her previous history, he prepared the way for her ruin by his extravagance. Next we see Aspasia introduced and maintained by him in his native city, to the scandal of the virtuous and the destruction of good morals. Next we have the stage, once employed for the instruction of the populace in piety and virtue and heroism, degenerating into a theatre of lampoon and obscenity, and finally the false logic and false sentiments of the sophists ultimately triumphing in the death of Socrates and the dispersion of his disciples. Gradually the lights of Greece, one by one, expire, her philosophers degenerate into quibbling sophists, and her generals and orators become the venal tools of a foreign foe. Finally, the eye of Greece is closed, and Athens, shorn of her glory, sits solitary and in sack-cloth, the slave of those she formerly ruled. Yet the Parthenon remains a monument of her architectural greatness, and her poets and philosophers and historians will exert an influence whilst there is on earth correct taste and feeling.

## THE TWIN CONVERSIONS.

BY PROF. W. M. REYNOLDS, OF PA. COLLEGE.

COLERIDGE somewhere (in his *Friend* I believe,) refers to the following anecdote, but I know of no book current among us in which the epigram of ALABASTER is to be met. I have, therefore, thought the *Record* might be doing a favor to this age and land of controversy, by renewing the memory of this singular event. Rightly interpreted, I think that it furnishes us with a lesson of liberality and modesty, which the heat and turmoil of disputes in politics and religion, have almost banished from among us. At least I think, that it will always be well for us to remember that there may be something in an opponent's arguments as well as in our own.—But to my story, which I intend to tell not for the sake of this moral which is prefixed, but on account of the epigram which follows.

HENKE (in his Appendix to Villier's *Spirit of the Reformation* pp. 152—153,) gives this story upon the authority of Bayle as follows: John and William Reynolds were twin brothers, the one a Protestant and the other a Roman Catholic. They were both Englishmen, and the former resided in his native country, which the latter had been compelled to leave on account of his religious views, and to take up his abode in the Spanish Netherlands. They were both learned men, and alike zealous in their faith. On account of their mutual and tender attachment they were greatly concerned for each other's eternal salvation. This was the constant burthen of their letters to each other, and after a correspondence of many years, in which the great points in dispute between them were fully discussed, they were so successful that *each renounced his own belief and adopted that of his brother*, when with his faith he had also to change his place of abode.

William Alabaster, who may well be supposed to have equally sympathised with both the brothers, having first been a Protestant, then a Romanist, and again a Protestant, has celebrated this circumstance in the following epigram, which, if it be not as elegant as some of Martial's, is certainly not discreditable to the scholarship of England in the beginning of the 17th century, when it was written.\*

Bella inter geminos plus quam civilia fratres  
 Traxerat ambiguus religionis apex.  
 Ille reformatæ fidei pro partibus instat;  
 Iste reformandam denegat esse fidem.  
 Propositis causæ rationibus, alteruterque  
 Concurrere pares, et cecidere pares.

\* Alabaster died in 1640.

Quod fuit in votis, fratrem capit alteruterque ;  
 Quod fuit in fatis, perdit uterque fidem.  
 Captivi gemini sine captivante fuerunt,  
 Et victor victi transfuga castra petit.  
 Quod genus hoc pugnae est, ubi victus gaudet uterque,  
 Et tamen alteruter se superasse dolet ?

Which I have tried to put into English in the following pentameters, which may answer until some true poet gives them a more melodious character :

Twin-born brothers a contest worse than civil were waging,  
 Goaded to strife by some point dark in religion and faith.  
 This one appears of reform the bold and ardent defender ;  
 That one denies that the faith ever could need a reform.  
 When they had marshall'd their reasons, fiercely each rush'd to the battle,  
 Equal the strength of each, equal the heroes fell too.  
 Just as their prayers had been, each made his brother a captive ;  
 Just as the fates decreed, each of his faith was bereft.  
 Two poor captives there were, but no capturer ready to hold them,  
 Lo ! the conqueror here unto the conquer'd deserts.  
 What kind of battle is this, where the conquer'd elated rejoices ?  
 Yet, that *he* conquer'd, each weeping laments and bewails.

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EPISTLES TO STUDENTS. NO. VI.

YOUNG GENTLEMEN :

You are now in the membership of a literary institution. Having been submitted to a probation, you were admitted, at its close, to matriculation, and your college considers you as one of her sons. She has sons of almost every grade of character. Some are distinguished for high moral purity ; they are disciples of Christ. Others are adorned with the virtues of gentlemen, and abhor the grosser forms of vice. Others, again, assume the exterior of correct deportment and desire to make a favorable impression upon their instructors, but secretly are ready for mischief to almost any extent. These, with the uncouth and the wily, whose trickiness may be read in their eyes and faces, though not embracing every variety of character, may suffice as an enumeration at present. The rank which a student occupies, generally depends on his training before he enters. It is true, that great changes have taken place in young men during their college-life. These changes may be from good to bad, or the contrary. It is very probable that in the college to which you belong, more have been reclaimed from vice, and rendered morally good than the contrary. Many, it is known, have been brought under religious influence during their stay at college. Others,

who have appeared to lose in moral purity, have in a great majority of instances, doubtless, been deficient in moral principle before they came. Young men, spoiled elsewhere, have acted out their principles and incurred disgrace, but they imbibed the poison before they entered the walls of that institution, which is too often unjustly charged with their offences.

Upon you it will depend to determine whether your career shall be honorable or dishonorable, whether you will finish your studies and reap the reward of fidelity in the coronation and blessings of your mother, or terminate it suddenly, midway, and disappear amongst the hisses of the friends of virtue, whose principles you have desecrated, and the mournings of your parent for her degenerate offspring.

There is nothing within your reach—save an interest in the righteousness of the Son of God—more desirable than a youth unstained with crime. In every future period of life, it will contribute greatly to your happiness to be able to look back on the days of peculiar temptation and to feel that, though not adorned with the graces of Christianity, you were kept from the gross forms of transgression. It does not take long to perform deeds which can never be obliterated. They may be unknown to any human being, or but to few, who equally implicated, will have the strongest motive to conceal, so that there can be no danger of divulgement; they may be washed away in that blood which cleanses from all sin, and the hope may be entertained on the best ground that the vengeance of God will not smite on account of them, but notwithstanding all this, they will hang around the memory with chilling power, and with sad periodical visitation harrow up with bitter anguish the spirit. When the mind becomes fully prepared to measure moral delinquency, to test actions by the light of the divine law, it is then that it sees and feels them in all their intensity.

It is not the estimate which we may now make, it is not that which is made by those whose moral sense has lost its power, but that which is made by an enlightened conscience, which should be regarded as correct. It is, we are persuaded, the iniquities of the young which will cause them to become their own tormentors, and what others may have pardoned, they will not be able to forgive. Great then should be your solicitude to pursue such a course as will not destroy self-respect, as will awaken no remorse in the future, as will call for no restitution in order to ease the pangs of a guilty conscience, as will subject to no disgrace, if it should become known. How important this is, is understood by some, and has been deeply felt by those who have preceded you. Could they tell you how God set their sin before them and troubled



them, how they rested not till some atonement had been made, how, after all, they have been compelled to grieve over and lament their wickedness, and when forgiven by all, have not forgiven themselves, it would plead in favor of youthful purity, in tones such as if resisted would be resisted by hearts, whose callousness is like that of the nether millstone. For your own sake—if not to meet the desires of your parents and teachers—should your abstinence from evil be rigorous, and your devotion to what is right, earnest and persevering. Never let it be forgotten, that every offence committed by you does to you a deeper injury, far deeper than it can to any one else—that you will be the real, the great sufferer, that vengeance will recoil on your own guilty souls. Departing from this topic, you may be properly reminded that your situation is one which affords invaluable privileges. No greater blessing can be conferred on any young man, which has not an immediate connection with his happiness in a future world, than is his, who in the providence of God, is favored with an opportunity of acquiring a learned education. Many a young man has desired it, but it was not placed within his reach. Many have toiled for it by the most self-sacrificing labors. Many have secured it by privations almost beyond human endurance. These were noble spirits! They have aspired and acted well. They have taught a most useful lesson, and their reward has far exceeded their toils. They unite in testimony with all, who have properly appreciated the value of education, to its unspeakable worth. Look around and see how many desire to be what you are, and cannot, who would gladly avail themselves of your places and faithfully fulfill their duties, but it is denied. You have been made to differ from them—this is your glory. You have been invested with larger responsibilities—this is the price which you must pay for your pre-eminence. If your elevation is high, and it is high;—how fearful your responsibility! Much is given you and much will be required of you. We cannot press this subject further now. Our conclusion is, may you have strength, such as God alone can give, to enable you to walk as becomes you, and through the whole of this path of peril so to progress as to attain the true goal.

Yours, &c.

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#### LINNÆAN OPERATIONS.

An active member of the Association has kindly furnished us with some account of the operations of the *Linnæans*, which we give to our readers, supposing that it will be interesting to those who have already gone forth from the walls of their *Alma Mater*. They will, no doubt,

be gratified to learn what their successors are accomplishing and how industriously they are engaged in advancing the interests of the Institution. Although yet in its infancy, the Linnæan Association has done much. The members deserve much credit for their industry and zeal; to their enterprise we are indebted for many valuable improvements; and from the activity and energy they have already displayed, still greater results may be expected.

The Linnæan Association was organized in June, 1844. Its primary object was the cultivation of the study of Natural Science in the Institution, by fostering among its members a spirit of investigation and a love for the works of Nature. The Association immediately divided itself into different sections, each section directing its attention to some particular branch of study or department of inquiry. Among the subjects designated are Zoology, Entomology, Ornithology, Conchology, Mineralogy, Botany, Numismatology, Chemistry and Antiquities. Efforts were at once put forth for the formation of a Museum, and through the active exertions of the members and the liberality of kind friends quite a handsome collection has already been secured. So rapidly did the Cabinet increase that in a short time the room occupied for the purpose was found inadequate to contain all the articles, and hence a little more than a year ago, the Association engaged in the project of erecting a large and commodious Hall for the reception of the valuable collection of minerals, shells, birds, quadrupeds, reptiles, insects, coins, fossils, medals, &c. &c. The members industriously set themselves to work to procure subscriptions, and soon their success was such as to justify the commencement of the building. The corner-stone was laid last August with appropriate ceremonies; the edifice now stands under roof, and when finished, it will be an ornament to the College, and an enduring monument of the zeal and perseverance of the students of 1845-46, who projected the enterprise. The exercises, connected with the dedication of the Hall, will take place, sometime, during the approaching summer, on which occasion DOCTOR MORRIS, of Baltimore, is expected to deliver an address.

Soon after the organization of the Society it was found necessary to have some permanent record to facilitate its operations, and accordingly the JOURNAL was commenced. It has already reached its third volume, and has thus far not only served as a valuable source of information on many branches of study in which the members are interested, but it has likewise proved a vehicle of pleasant communication with those who once sojourned in the College.

The efforts of the Association have also been directed to the im-

provement of the College Campus, to beautifying the grounds and ornamenting the avenues with trees and flower-girt paths. Through their laudable exertions a substantial road, from the College edifice to the town, has been constructed, which contributes so much to the convenience and comfort of those who are obliged to traverse the *Via Benedicta*, that we cannot indeed feel too grateful to the Linnæans.

Monthly meetings of the Association are held, which are frequently enlivened and rendered profitable by the delivery of lectures and the reading of reports, essays, and explanations of various phenomena, &c. Lectures have already been delivered by the following honorary members of the Association :

President KRAUTH, "*On the nutritive relations of the animal and vegetable kingdom*;" Prof. STOEVER, "*The practical effects which the labors of the learned have had on the prosperity and happiness of mankind*;" Prof. HAUPT, "*The implements of warfare and the modes of attack and defence*;" Prof. HAY, "*Glaciers*;" Prof. REV-NOLDS, "*The Natural History of man*;" Prof. SCHMUCKER, "*The Aborigines of America*."

Dissertations have also been presented by the following active members :

J. M. CLEMENT, "*The Characteristics of the age*;" M. DIEHL, "*Fourierism*;" P. ANSTATT, "*Unity of the Human Race*;" A. C. WEDEKIND, "*The Imagination*;" G. A. NIXDORFF, "*Universal Progression*;" A. ESSICK, "*The influence of Science in dispelling superstition*;" W. A. RENSHAW, "*Early History of Adams County*;" W. M. BAUM, "*The influence of Study on the development of Mind*;" G. J. MARTZ, "*Animal Magnetism*."

The following gentlemen constitute the Board of officers :

President, *John G. Morris, D. D.*; 1st Vice Pres., *William M. Baum*; 2d Vice Pres., *Augustus C. Wedekind*; Cor. Sec., *Moses R. Zimmerman*; Rec. Sec., *John A. S. Tressler*; Treasurer, *Reuben A. Fink*; Curators, *John K. Plitt, William P. Ruthrauff*.

All our friends, we are confident, will unite with us in the wish that the same spirit of enterprise may continue to animate the Linnæans—in the hope that their commendable efforts may be displayed in still further improvements. If they are encouraged by the success which has attended their past endeavors, may they find new motives for zealous exertions in the fact, that much more remains to be effected; may they press on, adopting as their motto the injunction of the Roman moralist :

*"Nil actum reputans, si quid superesset agendum."*

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#### PENNSYLVANIA MEDICAL COLLEGE.

The Commencement of the Medical Department of Pennsylvania College took place on the 4th ult. The public papers represent the exercises of the occasion as having been exceedingly interesting and calculated to furnish the highest gratification to those interested in the prosperity of this rising school.

The degree of Doctor of Medicine was conferred upon thirty-two, who, after passing over the prescribed course, had sustained a satisfactory examination. R. S. Taliaferro, of Va., and Jno. Paddock, of St. Johns, N. B. were also admitted to the honorary degree of M. D.

Prof. Atlee's address to the graduating class, "*On the responsibilities and duties of the medical profession*," is spoken of as an admirable performance, and in every way worthy of the high reputation which the author enjoys.

We are happy to learn that the number of students during the past session was larger than at any previous period, and that the prospects for the next term are unusually encouraging.

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A LITERARY FRAGMENT.

Mr. Editor—The following fragment seems to have slipped out of the archives of a literary, or at least, debating society. By publishing it, you will afford the owners an opportunity of claiming it. Its publication may likewise furnish your readers encouraging evidence of the hitherto undiscovered fact, that the Augustan age of classical Latinity is about to be revived, which is certainly a matter of sincere congratulation to all lovers of the muses.

Yours, truly,

*Congrediuntur, deliberandi specificamque causa, juvenes multi, valde vociferantes.*

*Praeses.* Orderum, O boies, nunc keepare debetis—

*Eduardus.* Suntne, Sir, Mr. President, shamefullè inebriati?

Nondum audiunt vocem quam justnou pronouceras tu;

Shoutere nunc velis loudiùs: sunt confoundedlè surdi.

[blolupam!

*Praeses.* (*Clamat in mirum modum.*) Orderum jam keepatôte, vos nomscols, ne vos

(*Thwackat mensam.*) Horresco referens quem runpum in maek hir in aulâ.

Silence nunc, in orderum domus veniat, jam hora est.

(*Juvenes lakunt subselliâ. Praeses, stans rostro, inquit.*)

Proh pudor! Hushuppitate uproarium! Tenete nunc tungas!

Et tu, Mr. Scriba, altâ voce read the last minutes.

*Scriba.* (*legit.*) Quaestio fuit, utrum nos boies debeant Tutores

Whippere, necne, si lessonas non cognossemus.

Censum unanimiter est, quòd non, desidedlè quòd non.

Praeses mulctavit Joanne Bawlerum sippo,

Quia bellôaverat loudiùs, objurgationes

Praesidis non mindans, sed altius shockinglè hollerans.

Blackmarkavimus Bullum obscrimen pinchendi naborem,

Jamesum Longofingarum ejecimus, eheu, jam serò,

Quia nostrorum multos librorum hookarat.

*Jamesus Longofingarus.* Num me furem fecistis? Meos fingaros hic suappo

Vobis in ora, et challenjo vos hoc crimen pruvare.

Quo pacto, Sir, Mr. President, sunt hie studentes absentes

Abusandi et sic beliundi? Sir, ego standere canno

Suchum insultum, et vobis showebo quod nunc gettetis.

Ibo pede aequo ad Squierum vos prosecuturus.

*Bullus.* Non, Sir, pinchivi naborem: falsa dixistis,

Estis liari omnes, et hic vos omnes defio.

*Bawlerus.* Quam nonsensicam mulctam, O ninnii—

*Praeses.* Ohe! Silentium nunc tene, O tu Bawlere. cito—

*Bawlerus.* } unâ } —mulctam vobis payare? Such'thingum nunquâm, Sir,

*Bullus.* } con- } —Blackmarkum eradendum est, seu certè blackpincham

} cla- } vos omnes.

*Longofingarus.* } mant. } —Waitite alittel, et mox constabuhun cito fetchabo.

Cum multo uproario concio din imitur, cunatunditur, et exeunt omnes, horribile

conclamitantes.

*Receipts during March.*

Rev. John Heck, Waynesboro', Pa.	\$1 00	Vol. 3
Rev. F. A. Barnitz, Jersey Shore, Pa.	1 00	3
Rev. R. H. Ball, Baltimore, Md.	1 00	3
Rev. P. Anstatt, Hollidaysburg, Pa.	1 00	3
Rev. T. W. Corbet, Cambridge, O.	1 00	3
Rev. C. Reimensnyder, Westminister, Md.	1 00	3
Rev. J. P. B. Sadtler, Pinegrove, Pa.	1 00	3
Rev. H. Wheeler, Claverack, N. Y.	1 00	3
Rev. W. B. Rally, Mt. Eaton, O.	1 00	3
Henry Deaver, Petersville, Md.	1 00	3
C. W. Collier, Georgetown, D. C.	1 00	3
Wm. Leiser, Milton, Pa.	1 00	3
Peter Aughinbaugh, Gettysburg,	3 00	1, 2, 3
Prof. H. Haupt, -	2 00	2, 3
D. M. Smyser, Esq. -	2 00	2, 3
J. B. Danner, Esq. -	2 00	2, 3
John S. Hawk, -	1 00	2
Neinstedt & Gillespie, -	1 00	3
Dr. D. Horner, -	3 00	1, 2, 3
Dr. John Cox, -	1 00	3
Geo. Critzman, -	50	
Wm. Boyer, -	1 00	2
William Ulrich, -	1 00	3
Alexander N. Breckenridge,	1 00	3
John Hossler, -	1 00	3
Christian Diehl, -	1 00	3
A. Essick, -	1 00	3
R. R. Wagenseller, -	1 00	3
C. J. Ehrehart, -	1 00	3
Peter Born, -	1 00	3
Daniel Garver, -	1 00	3
G. B. Kelly, -	1 00	3
Jacob H. Heck, -	1 00	3
Anderson Ellis, -	1 00	3
J. A. Bradshawe, -	2 00	3, 2 copies
J. K. Plitt, -	1 00	3
J. C. Badham, -	1 00	3
D. W. Badham, -	1 00	3
L. F. Melsheimer, -	1 00	3
C. E. Weldy, -	1 00	3
D. J. Barrick, -	1 00	3
L. E. Albert, -	1 00	3
Frederick A. Schmucker, -	1 00	3

TO SUBSCRIBERS.—The promptness, with which many of our friends have paid their subscriptions to the *Record and Journal*, certainly calls for an expression of our gratitude. And should this notice meet the eye of any one who is still delinquent, we should be very glad if he would be influenced by their example. We are under additional obligations to the printer every month, and unless our friends are prompt, we shall be unable to meet them. The number of subscribers is so limited that *we cannot let one off* without doing ourselves an injury.

# Pennsylvania College, Gettysburg, Pa.

## FACULTY AND INSTRUCTORS.

- C. P. KRAUTH, D. D.—*President and Prof. Nat. and Rev. Rel., Ethics, &c.*  
Rev. H. L. BAUGHER, A. M.—*Prof. of Greek Language, Rhetoric and Oratory.*  
Rev. M. JACOBS, A. M.—*Prof. of Mathematics, Chemistry and Mechanical Philos.*  
Rev. W. M. REYNOLDS, A. M.—*Prof. of Latin, Mental Philosophy and Logic.*  
M. L. STOEVER, A. M.—*Prof. of History and Principal of Preparatory Department.*  
Rev. C. A. HAY, A. M.—*Prof. of German Language and Literature.*  
H. HAUPT, A. M.—*Prof. of Mathematics, Drawing and French.*  
D. GILBERT, A. M., M. D.—*Lecturer on Anatomy and Physiology.*  
J. G. MORRIS, D. D.—*Lecturer on Zoology.*  
A. ESSICK.—*Tutor.*  
J. K. PLITT.—*Tutor.*

PENNSYLVANIA COLLEGE has now been chartered about fifteen years. During this time its progress has been such as to gratify the most sanguine expectations of its friends. The course of studies is as extensive and substantial as that of any Institution in the Country. The *Preparatory Department* provides for instruction in all the branches of a thorough English, business education, in addition to the elements of the Mathematics and Classical Literature. The *College Course* is arranged in the four classes usual in the Institutions of this country.

The government of the students is as energetic as their circumstances seem to require. They attend three recitations a day, Church and Bible Class on th Sabbath, and are visited in their rooms so frequently as to preclude the danger of any great irregularities. They are all required to lodge in the College Edifice, special cases excepted.

The annual expenses are—for board, tuition and room-rent, during the winter session, \$63 62½; for the summer session, \$43 12½. Washing, \$10 00; and Wood, \$3 00. Total expense, \$119 75. Boarding can be obtained in town at \$1 25 per week.

There are two vacations in the year, commencing on the third Thursdays of April and September, each of five weeks continuance.

The winter session closes on the 15th inst., and after the vacation of five weeks the summer session commences on the 20th day of May.

## Donations to Cabinet.

1. From *J. P. Lower*, Philadelphia Mint, per *Prof. Gilbert*, two Medals, one, a representation of George H.; the other, of the burning of Kittanning, by Col. Armstrong.
2. — *Rev. W. A. Passavant*, Pittsburg, per *Prof. Stoever*, the Lord's Prayer in Chinese.
3. — *J. Hock*, Pinegrove, Pa. Pebbles from Fort Mackinaw.
4. — *V. L. Conrad*, supposed Sole of a Sandal (petrified,) found near the Dead Sea.
5. — *Geo. W. Martin*, of the Army in Mexico, a lot of Shells, from Brazos Island—a large Citron, from the garden of Gen. Arista, Monterey—a beautiful Mexican Powder-horn—three packs of Mexican Segars—a Mexican Lasso—a purse made by a Mexican female.
6. — *J. A. Brodshaw*, one English Coin.
7. — *P. Born*, seventy-three Specimens of pressed Plants, also a Coin.

## Donation to Library.

Proceedings of the Academy of Natural Sciences of Philadelphia, for November and December, 1847—From the Academy.

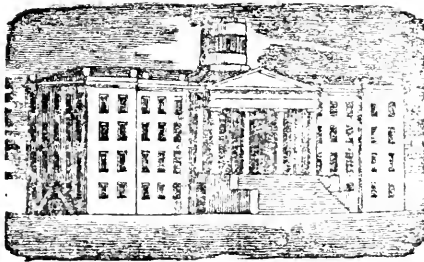
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THE  
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Of the *Union Association of Pennsylvania College.*

MAY, 1847.



CONDUCTED  
 By a Committee of the Association.

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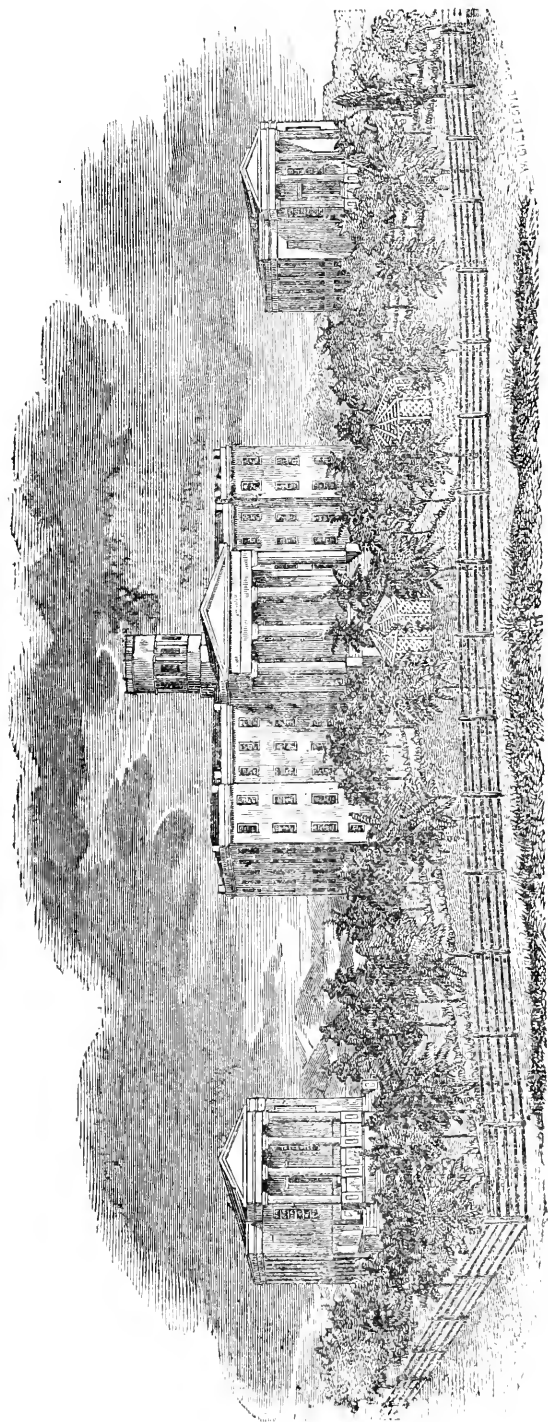
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THE LITERARY

RECORD AND JOURNAL

OF THE LINNEAN ASSOCIATION OF PENNSYLVANIA COLLEGE.

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VOL. III.

MAY, 1847.

No. 7.

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PENNSYLVANIA COLLEGE.

We are indebted to the politeness of *D. A. Buehler, A. M.*, Editor of the Gettysburg Star, for the cut of the College edifice which we have placed on the opposite page. The impression is regarded as a correct one, except that the small building on the eastern end of the College has not yet been erected—the one on the western side is the *Linnean Hall*, the corner-stone of which was laid last Summer by the *Hon. James Cooper*.

The College edifice is a chaste specimen of the Doric order of architecture, consisting of a centre building and two wings, with end projections. The whole length is 150 feet. The building is four stories high, with blocking course two and a half feet high, resting upon a heavy cornice around the entire building. On the centre is placed an octagonal cupola 18½ feet in diameter and 24 feet high, with an observatory on its top. The entire front of the centre building (46 feet) is occupied by a portico consisting of four fluted columns four feet in diameter at their bases, and 22½ feet high, resting on abutments brought up to a level with the floor of the second story. On these columns rests an appropriate entablature, together with the roof, cornice and blocking course of the centre building. The portico projects 14 feet from the centre building, and is made accessible on the outside by a flight of steps equal in width to its whole front. The edifice is composed of brick, and the whole exterior is painted white. The building, besides a hall of 11 feet width from front to rear in the centre building on the second floor, and corridors on every floor, the entire length of the building, contains seventy-five apartments or rooms, fifty-four of which are designed for the use of students—the remainder are a College Hall (42 by 22 feet,) and a Library of the same size, two rooms for the Literary Societies, each 43 by 19, on the fourth story, six Recitation rooms, Refectory, together with the necessary apartments for the Steward and family.

HISTORY.—Pennsylvania College had its origin in the wants of the German portion of the community. A Theological Seminary, under the auspices of the Lutheran Church, having commenced operations in Gettysburg in the year 1826, it was soon discovered that another institution was necessary, in which young men designed for the Gospel ministry might receive Academic training. Accordingly in June, 1827, a Classical School was established under the direction of the Rev. D. Jacobs, A. M., and in April, 1829, a Scientific department was connected with it under the care of his brother, the present Professor of Natural Science. In the Summer of 1829, the plan of the institution having been enlarged and its facilities increased, the name was changed to that of the *Gettysburg Gymnasium*. The Institution was, however, speedily called to mourn the death of him, whose qualifications seemed so well adapted to the important station to which he had been invited, and whose brief career justified the formation of high expectations in reference to his future success. He discharged the duties of his office with untiring fidelity, until he became the victim of disease, and was compelled to relinquish his post, to travel South in search of health. When retracing his steps he had almost reached his native place, his frame gradually gave way and he breathed his last in Shepherdstown, Va., lamented by the Church, and beloved by all who knew him. In consequence of the death of Rev. D. Jacobs, in November, 1830, its classical department was vacant, except by temporary supplies, until April, 1831, when Rev. H. L. Baugher, A. M., was appointed to take charge of that department.

As the number of students had considerably increased, and the prospects for more extended usefulness were very promising, it was deemed expedient to place the institution upon a more permanent basis, by enlarging its operations and organizing the Gymnasium into a Collegiate form. Application was, therefore, made to the Legislature for a charter, which was obtained in April, 1832; and during the ensuing Summer, on the 4th of July, the Institution was organized under the title of "Pennsylvania College." On which occasion an appropriate address was delivered by the Hon. Calvin Blythe. We suppose the subjoined brief extract from the address will be read with interest, as the success of the College has more than realized the predictions of the orator :

"The Institution organized this day, there is every reason to believe, will prove a valuable auxiliary in the great cause of education. Located in a healthy country, in the midst of an active and intelligent people, under the direction of men of approved learning and ability, it may with confidence be predicted that it will receive, as it assuredly will deserve, the public patronage."

On the same day the patrons of the College assembled and selected the following

*Board of Trustees.*

Hon. Calvin Blythe, *President*; J. G. Morris, D. D., *Secretary*; J. B. McPherson, Esq., *Treasurer*; Hon. A. Thompson, LL. D., J. G. Schmucker, D. D., D. F. Schaeffer, D. D., J. C. Baker, D. D., Rev. A. Reck, Hon. D. Sheffer, Rev. C. F. Heyer, M. D., E. L. Hazelius, D. D., S. S. Schmucker, D. D., R. G. Harper, Esq., Hon. T. C. Miller, J. F. Macfarlane, Esq., C. P. Krauth, D. D., Rev. J. Ruthrauff, Rev. J. Medtard, B. Kurtz, D. D., Rev. Emanuel Keller, Rev. A. H. Lochman.

In the evening the Board of Trustees met and organized the following

*Faculty.*

S. S. Schmucker, D. D., *Professor of Intellectual Philosophy and Moral Science*; E. L. Hazelius, D. D., *Professor of the Latin Language and German Literature*; H. L. Baugher, A. M., *Professor of the Greek Language and Belles-Lettres*; M. Jacobs, A. M., *Professor of Mathematics, Chemistry and Natural Philosophy*; J. H. Marsden, A. M., *Professor of Mineralogy and Botany.*

Whilst we record the early history of the College, we cannot express our obligations too strongly to those who, from the very beginning, toiled for its advancement, and with a noble perseverance labored, through difficulties and discouragements, to uphold its interests.

In consequence of their duties in the Theological Seminary, Doctors Schmucker and Hazelius having consented to aid in the instruction only until other appointments could be made, in the Fall of 1833, the Institution was enabled to dispense with their services, which had been kindly and gratuitously rendered, by the election of C. P. Krauth, D. D., of Philadelphia, to the Professorship of Moral and Intellectual Science. In the Spring of 1834, Doctor Krauth was appointed to the Presidency of the College, and at the commencement of the Winter Session was inducted into his office. Subsequently the corps of instructors was filled by the appointment of Rev. W. M. Reynolds, A. M., who had for some time previously been officiating as Principal of the Preparatory Department, to the chair of Latin Language and Literature.

During the winter of 1833-4, through the noble and disinterested efforts of our representative in the State Legislature, the enlightened patron of education, *Hon. Thaddeus Stevens*, an appropriation of eighteen thousand dollars was procured for the College. This donation dispelled at once all fears with regard to the success of the Institution. It was a day of great rejoicing, when the intelligence reached us, that *Governor Wolf*, who, from the first, evinced a deep interest in the Institution, and recommended in his message to the Legislature appropriations in behalf of the Germans, had signed the bill. The students celebrated the joy-

ful event with illuminations and music, and all felt that a new era had commenced. This appropriation enabled the Trustees to erect an edifice more suitable than the Academy, for the enlarged operations of the School. In the year 1836 the building was commenced, and in the Autumn of 1837, it was sufficiently advanced to admit of its occupancy by a part of the students.

In consequence of the increasing prosperity of the Institution and the annual appropriation of one thousand dollars, for several years granted by the State to this, in common with the other Colleges of the Commonwealth, the Trustees were enabled to extend the facilities for the acquisition of knowledge, by the appointment of an additional instructor. Accordingly in the autumn of 1838, Rev. H. I. Smith, A. M. was elected Professor of German Language and Literature, History and French. In 1843, Prof. Smith, having been called to preside over an Institution in the North, this Professorship became vacant. In 1843, M. L. Stoever, A. M., who had, for some time before, been at the head of the Academical Department, was appointed Professor of History. Instruction in the German was, as previously, again given by one of the other Professors, until the Winter-term of 1844, when Rev. C. A. Hay, A. M. entered upon the duties of that Department. In the spring of 1845, the number of instructors was still further increased by the appointment of H. Haupt, A. M. as adjunct Professor of Mathematics.

Vacancies in the Board of Trustees have at different times since the organization of the College been supplied by the election of the following individuals: W. G. Ernst, D. D., Rev. D. Gottwald, T. Stevens, Esq., Dr. D. Gilbert, T. J. Cooper, Rev. J. Oswald, A. M., Rev. B. Keller, Rev. J. N. Hoffman, Rev. C. F. Schaeffer, S. T. P., S. Fahnestock, S. H. Buehler.

In the spring of 1844 a new Board was constituted, consisting of the following gentlemen: J. B. M'Pherson, *President*; Prof. D. Gilbert, M. D. *Secretary*; S. H. Buehler, *Treasurer*; C. P. Krauth, D. D., S. S. Schmucker, D. D., S. T. P., J. G. Morris, D. D., Rev. J. Ruthrauff, Rev. A. H. Lochman, A. M., R. G. Harper, Hon. T. Stevens, S. Fahnestock, F. Smith, A. M., D. Horner, M. D., Rev. J. Few Smith, A. M., Hon. M. McClean, Isaac Baugher, Rev. C. W. Schaeffer, A. M., C. A. Morris, Rev. F. W. Conrad, Rev. J. Ulrich, A. M., D. H. Swope.

The Institution has now been chartered fifteen years. During this time its progress has been such as to gratify the most sanguine expectations of its friends.

The annexed table will show the average number of students in attendance during the last ten years:

Year.	Number of Students.	Year.	Number of Students.
1837,	104	1842,	175
1838,	123	1843,	130
1839,	141	1844,	142
1840,	158	1845,	148
1841,	189	1846,	193

The provision at present made for instruction and the extent of the course may be seen in the following list of instructors and their respective departments :

C. P. Krauth, D. D., *President, and Professor of the Evidences of Natural and Revealed Religion, Political Philosophy and Ethics* ; Rev. H. L. Baugher, A. M., *Professor of Greek Language and Literature, Rhetoric and Oratory* ; Rev. M. Jacobs, A. M., *Professor of Mathematics, Chemistry, and Mechanical Philosophy* ; Rev. W. M. Reynolds, A. M., *Professor of Latin Language and Literature, Mental Philosophy and Logic* ; M. L. Stoeber, A. M., *Professor of History and Principal of the Preparatory Department* ; Rev. C. A. Hay, A. M., *Professor of German Language and Literature* ; H. Haupt, A. M., *Professor of Mathematics, Drawing and French* ; D. Gilbert, A. M. M. D., *Lecturer on Anatomy and Physiology* ; J. G. Morris, D. D., *Lecturer on Zoology* ; Messrs. A. Essick and J. K. Plitt, *Tutors in the Preparatory Department.*

#### NUTRITIVE RELATIONS OF THE ANIMAL AND VEGETABLE KINGDOMS.

The objects of the universe may present themselves as they are without their relations to other things. If we examine them thus detached, they may furnish very interesting materials for reflection and gratification. Their properties both numerous and striking, cannot fail to interest us. The intelligence they display solicits our homage to the great Author of them. When they are viewed in their relations to other things, they are still more adapted to arrest our attention, and call forth our admiration. The adaptation of different parts of the creation to each other is so obvious that it was soon ascertained, and extensively understood. It is true that the views derived from a general contemplation were neither very clear nor very profound. In many instances where the general fact of an intimate connection, a close dependence, could not be overlooked, it was very imperfectly understood what was the precise influence exerted, or the effect beyond its most general aspects. As an illustration we may mention the subject of respiration. That the atmosphere which encompasses our globe was necessary to animal life, men were not long in finding out. It was soon known that

so close is the bearing of the one upon the other that without it it could not exist. Breathing by means of an elastic fluid surrounding us, and life, were nearly or quite synonymous. Whilst breath—to use an ordinary mode of speaking—continues, there is life; when breathing ceases, death ensues. When the breath has gone out of a man, according to the vulgar mode of speaking, the vital spark has fled, and over his once active and animated frame reigns universal and irremediable paralysis.—When man was formed of the dust of the earth, he was at first but a statue wonderfully constructed, but lifeless and voiceless; but when the Almighty Creator whose plastic hand had framed him, breathed into his nostrils the breath of life, then he became a living soul. And as breathing gave motion to his blood, and fitted it to support his frame, waked up the nervous energy of his system, and rendered his spirit receptive of impressions through the quickened senses of its clay vehicle, so it is the same that upholds all these phenomena as long as they appear.

But although this was known, known to every body, to the savage as well as to the philosopher, what did they know more than the simple fact? Nothing—absolutely nothing. That they attempted to know more, we are aware, but their speculations were fruitless, and when in their results compared with the approximations to the truth characteristic of a later, of a recent age, they appear to us, as they are, ineffably absurd.

If we look at the philosophy of breathing as exhibited in the pages of ancient writers, it will be evident that they were as wide of the mark as possible. The great Plato, who was so unrivaled in his capacity to dress up his thoughts in splendid language, and to throw over them the drapery of the finest rhetoric, in his great work on the Creation, the *Timæus*, tells us very gravely, that the lungs are a kind of auxiliary to the heart. They are soft and bloodless, they are like a sponge, perforated with holes, they are recipient of air and drink—their design is to cool the heart from too great heat, and placed around this organ, they are *αλμα μαλακον*, and they assuage anger.

In an interesting work of the celebrated German Reformer, Melancthon, entitled *De Anima*, he discourses thus about the lungs. They afford two advantages to the heart, one is to carry to it air, to refrigerate it and the spirits, but they prepare the air first, they temper it, or it would injure, they give an opportunity of exhaling fumes, which, not thus eliminated, would oppress it. They are large in order to contain a sufficient quantity of air to admit of the temporary suspension of breathing. Just before the Lavoisierian Chemistry took the field, the views of physiologists seemed to be that there was some chemical change not well un-



derstood in the blood effected by breathing, mephitic air was discharged, and heat engendered by some phlogistic process.

So the relation of the vegetable to the animal kingdom, and particularly as a nutritive agent, was understood and yet very inadequately. It was very easy to learn that animal life depends upon vegetable life, or the products of vegetable life either mediately, or immediately, but beyond the general fact, what was known? More we may admit than in the other case, and yet mankind had to wait till a comparatively late period of the world's history to receive anything like comprehensive and clear views on the subject.

The question has been agitated, very much agitated, what is the proper kind of food for man? Some have maintained that man is herbivorous, others, that he is carnivorous, and others again, that he is omnivorous, or better, that he is polyphagous.

Originally he seemed to have been herbivorous, he became after the flood, by an additional grant, carnivorous, and adding the one to the other, he has remained polyphagous. The solution of questions of this kind—not difficult on anatomical and physiological grounds—is facilitated by an acquaintance such as modern chemistry furnishes us with the real principles of nutrition in the different species of food. The facts furnished bearing on this point are numerous and satisfactory, and taking considerable interest in them, both as a matter of science, and as illustrating the wisdom and goodness of our Great Creator, we propose to present some remarks on the nutrient relations of the animal and vegetable kingdoms of nature.

The first inquiry that we institute is: What is necessary for the support of animal life?

That animal life has no self-supporting power, and that it is not independent of external influences, it would be the merest truism to assert. Animal bodies are so constituted that they need continual appliances, and of a very gross character, at any rate in their primary forms, to keep them in action.

The Brunonian theory is, no doubt, correct, if not too minutely scanned, that life is a forced state. It is a flame that requires periodical supplies of fuel to keep it up, and it may be incidentally mentioned whilst the figurative representation is before us, that the vegetable world in the one case, we mean real combustion, as in the other, is the great source of the process.

It is not worth while to stop to inquire why this is so, why this dependence exists. It was certainly not necessary, that is, God could have made animal bodies to run a fixed course without this dependence, but he

has not done so, and had he, it would have so modified our world as to make it exceedingly different from what it is. It would be easy to show the mighty influence both upon organized matter and upon spirit—the great moral and probationary results of this arrangement, but natural as it is for us to glide into such representations, and congenial as they are to the best feelings of the heart—we forbear. We and other animals become exhausted, our systems disintegrate, they lose, they need as the consequence the restoration of vigor and the restoration of the materials which have passed away. The restoration of these, the replacing of what is lost constitutes nutrition—or the great process of animal bodies called assimilation.

Then, in addition there is needed for animal bodies the elements of various products, the result of a most extraordinary chemistry denominated secretions.

Then, there is needed a supply of heat. This is essential to animal life. Then there is needed some antidotal remedy for noxious developments. Then there are needed resources, auxiliary in cases of exigency. Then there are needed defecating and purifying processes. We state these things in general terms, expecting to make them clearer in the course of our remarks.

We institute the inquiry, how is this aliment furnished, and what are the arrangements for these subsidiary processes? It is furnished first, and chiefly by the vegetable world. Nutritive agency commences here—it appropriates however, to itself, without materially changing its character, a portion of the animal world. Allying with itself the creature of its power, it marches forward, under God, suspending the reign of death, till He who commissioned it, saith: “Thus far shalt thou go and no farther.”

What is it, however, in vegetables and animals that imparts to them their power? Can we penetrate into their interior and, by a successful analysis ascertaining their constituents, show the relation of those constituents to the animal processes of which we speak? It is the boast of modern chemistry that we can, and to a German chemist, who now enjoys a reputation co-extensive with the civilized world, we mean Liebig, are we indebted for much of the knowledge we possess. Far be it from us to sanction every view of this justly celebrated man; he has, no doubt, in some instances permitted theory to run ahead of facts, he has not always avoided the fault of too hasty generalization, but with every abatement of this kind, enough remains ascertained beyond the shadow of doubt, to justify his endorsement as a great Chemist, and a success-

ful explorer of the recondite operations of the economy of animated existences.

It is not furnished exclusively by the vegetable kingdom—animals are likewise employed in the support of animal life. Not only man, but other animals use, and with advantage, the flesh of animals to uphold the nutritive operations of their systems, and to supply the source of the various chemical combinations, which subserve most important ends in animal life.

The other function is sustained by the atmosphere and by products of the animal powers.

We now institute another inquiry, which we express in the language—what is the difference between vegetable and animal food? Strange as it may appear, there is no difference. We mean, considered as nutritive agents, they are essentially the same, and make the same contributions under digestive influences to the common stock of animal depositories. To divest our assertion of the air of extravagance, and to make it as palpable as possible, we ask chemistry dressed in the brilliant habiliments with which she has lately been appareled to appear, and duly qualified to render a true account of what she knows, touching this thing. Conservative of no secret—open as day—she reveals to us, in a clear voice, and intelligible terms, the following facts:

Condensing her words, it appears that the organic part of plants consists essentially of four classes of substances. The cellular substance, or woody fibre, starch, gum, and sugar, gluten, albumen, avenine, legumin, oil, or fat. Now when we look at the soft parts of the body, indeed the entire combustible part, says a writer in the *North British Review* in an interesting notice on Chemistry in its relations to agriculture, it consists essentially of three substances, or more correctly of three groups of analogous substances.

a. The cellular substance, which pervades and forms the outline of the whole body. When the skins of animals are boiled, a jelly is obtained, to which the name of glue is generally given; by chemists it is called gelatin. When the cartilages of young bones are boiled, they also yield a jelly, differing in some degree from the former, and to which the name chondrin is given. In a solid state, these compounds form the substance and cells and vessels of the animal body.

b. The muscular fibre, which forms the fleshy parts of the body. If a piece of flesh, lean mutton or beef, be washed for a length of time in a stream of water, the blood will be removed, and a white fibrous substance will remain, which is the pure fibre of the muscle, more or less mixed with fat. The white of the egg (albumen,) and the pure

curd of milk, called by chemists, Casein, are analagous to muscular fibre. They are all analagous, also, to the gluten and legumin of wheat and other grains, and, like them, contain fifteen per cent. of nitrogen, and a little sulphur or phosphorus, or both.

c. The fat, which in an animal in good condition, forms nearly one-third of the weight of the soft parts of the body. It is very analagous—in some cases absolutely identical—with the fatty matter of the vegetable food. Comparing the organic parts of both we have

In the plant,	Animal,
1. Cellular substance,	1. Cellular substance—Gelatine, Chondrin,
2. Gluten, Albumen, &c.	2. Febrin, albumen,
3. Fatty matter,	3. Fatty matter.
4. Starch, gum sugar.	

This comparison shows us, that in both animals and vegetables there is a cellular substance performing analagous functions in each, though of unlike composition—that in both there are substances, gluten and fibrin, which are almost identical; the fats, which are often absolutely identical—and that the only marked difference between them consists in the large quantity of starch, &c. which is present in vegetable food.

We can now understand what are the functions which the plant has to perform in reference to animal life, and what purposes are secured by the several constituents of the vegetable food which we eat. The plant has to manufacture the materials—the gluten and fat—out of which the soft parts of the animal are to be built up.

Then as to the purposes of the several constituents of the food,—the gluten is carried into the stomach, and thence to the proper parts of the body to build up almost unchanged the muscular parts of the body. The fat is transferred to the proper localities. The plant thus becomes administrative to the animal necessities.

A very close connection is shown thus between the vegetable and animal kingdoms, and the dependence of the latter on the former is complete.

Moreover the principal difference between plants and animals is in the starch of the former, which is necessary in some of the animal processes. The fundamental substance in all the articles mentioned is Protein. It is the leading constituent in Gluten (of wheat,) Fibrin of muscles, Albumen of blood, Casein or curd of milk, hair and wool. Sulphur and Phosphorus being other constituents in different proportions.

The results of the investigations of Professor Mulder (of Utrecht.) on these subjects are deserving of the particular attention of all interest-

ed in inquiries of this kind, and every intelligent man should feel such an interest.

The source of the various secretions is the great circulating fluid, the blood. This is not only the universal nourisher of the various tissues of the body, but likewise the contributor of materials for the different laboratories of the animal system, in which chemical results are produced by chemical laws under the control of vital agencies. Its constituents, it does not appear necessary to our purpose, which involves merely a general representation, to present; suffice it to say, it contains every thing necessary to subserve animal necessities. Heat is necessary to animal life, and it has been generally admitted since the rise of pneumatic chemistry, that something similar to combustion is carried on in the lungs, or in the system. The earlier theories were simple; they represented the matter as merely a combination of the oxygen of the atmosphere with the carbon of the venous blood, and the consequent disengagement of heat.

This simple view was not considered tenable, and it was supposed to be ascertained by crucial experiments that the nervous system exercised much control over the production of animal heat. It would require much time to unfold the various modifications of the primitive theory, but they are all more or less allied to combustion in their elements. Nor has Liebig presented a system fundamentally different. He transfers combustion from the lungs to the capillary system. This is said to be "the fire chamber where the fuel is consumed, which is destined to set in motion the whole machinery of life." "Internal capillary combustion is the source of animal heat."

"Carbon and hydrogen are burned in the blood, as remarked by Fownes, and this to an extent which will strike with surprise, and at first, incredulity, those unaccustomed to such considerations. Many ounces of carbon are, in every individual, daily rejected from the lungs as carbonic acid. It is impossible that combustible matter can thus be disposed of without the evolution of a vast amount of heat, as much heat, in fact, as if it had been burned in a fire-grate. This heat is manifest in the elevation of the temperature which the animal frame always possesses above that of the surrounding medium, an elevation of temperature always in direct proportion to the amount of nervous and muscular energy of the animal, and to the vigor of its respiration, but never in any single case altogether absent." The lungs and the skin throw off carbonic acid, the product of combustion. Some of the secretions may be considered as defecatory or purifying, and animal fat is a de-

posit brought within the reach of animal necessities in periods when the ordinary supplies cease.

It belongs to that class of food which has reference to respiration. There are two classes, the first has reference to the repair and nutriment of the body, and the other has reference to animal heat by combustion—the first called by Liebig the plastic elements of nutrition—the second the elements of respiration.

First class. 1, Vegetable fibrin; 2, Vegetable albumen; 3, Vegetable casein; 4, Animal flesh and blood.

Second class. Fat, Starch, Gum, Cane sugar, Loaf sugar, Milk, Sugar, Mucilage, Wine, Beer, Spirits.

This then is in general its use, and for details, we must refer you to Liebig.

We ask, finally, what are the circulations between these kingdoms by which they minister to each other. It is not to be denied that if, on the one hand, the vegetable kingdom contributes to the support of the animal kingdom—on the other, the animal contributes to the support of the vegetable. If, moreover, animal and vegetable life depends upon the atmosphere, it is true that it too receives contributions from its beneficiaries by which it is upheld in its power. The remarks already made render it intelligible and satisfactory, that vegetables contribute essentially and largely to the supply of animal necessities, but is the favor returned—is the debt in any way cancelled? The appropriate answer here, we presume, is that animals furnish in various ways substances which are necessary to vegetation. Carbonic acid, ammonia, various saline combinations with water, are all instrumental in the development of vegetable life. The deterioration of the atmosphere and animal processes is remedied by supplies from the vegetable world.

A recent French writer, says Fownes, in his Chemistry as exemplifying the wisdom and goodness of God, has contrasted the opposite functions of plants and animals in a very pleasing manner :

The vegetable	The animal
Produces the neutral azotized substances,	Consumes the neutral azotized substances,
“ “ fatty substances,	“ “ fatty substances.
“ “ sugar starch and gum,	“ “ sugar, starch, & gum.
Decomposes carbonic acid,	Produces carbonic acid,
“ water,	“ water,
“ ammoniacal salts,	“ ammoniacal salts,
Disengages oxygen,	Absorbs oxygen,
Absorbs heat and electricity,	Produces heat and electricity,
Is an apparatus of reduction,	Is an apparatus of oxidation.
Is stationary.	Is locomotive.

We see, then, how these play, as it were, into each other's hand, and what a beautiful circuit is performed by them, and how admirably they minister to each other and keep up these important kingdoms in the universe of God. The mind is irresistibly led, whilst it sees the striking adaptation of things to each other, to admire the knowledge, wisdom, power and goodness of Him whose hand is strikingly displayed in all these arrangements.

We must regard the study of the relations of created things to each other, the dependence of one part of creation upon another, the reciprocal reception and return of needed agents and influences, as wonderfully conducive to the expansion of the intellect and the development of the moral powers. It is when we turn truth brought from the works of God into these channels, that they furnish to us the richest fruits; they add to our knowledge, and they add to our moral excellence.

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LOOSE LEAVES FROM MY JOURNAL. NO. VII.

BY J. G. M.

THE MONSTER CASKS OF HEIDELBERG.

Hail, ancient Heidelberg! enjoying a world-wide celebrity for the charming scenery which surrounds thee! the seat of the oldest University in Germany, from which streams of learning have flowed over all the earth! Hail, Heidelberg! the ruins of thy castle attract thousands of travellers, for here, in the olden times, mighty princes dwelt; here dukes and electors flourished and fought, *drank* and died! Their palace is deserted, their banquet halls are desolate, the towers are prostrate; ruin has driven her ploughshare over that once magnificent mansion, and pilgrims, from all lands, now come to gaze with melancholy admiration on its remains. The man is to be pitied, who has not sat on that fallen column, or mounted that dilapidated stair-way and looked around on the dreary scene. The voice of the troubadour is hushed, the song of the minnesinger has ceased; the clangor of arms is no longer heard; the wine no longer sparkles in the cup; the shout of revelry re-echoes not through the long drawn aisles!

But Heidelberg! famous as thy natural position, at the head of that enchanting valley, has made thee; world-known as thou art for thy university and thy ruined castle, yet if these had never been, the nations would know and admire thee, for that other monument, which after all, is thy richest jewel! How many wanderers go to see that greatest wonder of cooper architecture, *the monster cask of Heidelberg!* It is

the very colossus of wine repositories, within whose capacious sides, 236,000 bottles of German Falernian can find ample room!

Stranger, if you wish to view this extraordinary monument to the god of wine, ascend the high hill behind Heidelberg, whereon the ruins of Furstenberg castle repose in melancholy grandeur! On the terrace of the castle, in the shadow of lofty, but dilapidated walls, you will observe a smaller edifice, the roof of which has defied the corroding tooth of time. Two open lions' jaws gape hideously on you from over the entrance; square windows, in ancient times surmounted by Gothic arches, let in an imperfect light. A narrow door leads into the interior. You descend a few steps, and here in this apartment, which is immediately under the ancient court chapel, the Colossus rests.

Other princes have distinguished themselves for their collection of gems, of paintings and statuary; some have immortalized their names by the richness and enormous extent of their libraries, but the princes of Heidelberg have preferred to float their fame down the stream of posterity on the top of a wine cask! Among the princes who in olden times occupied this celebrated castle, there was one who was a remarkable example of greatness, and a perfect pattern for all rulers and warriors. John Kasemir was his name, a Palsgrave of Rhein and Duke of Bavaria; an orator, a warrior, and a terrible avenger of his enemies. It was he, who first erected one of these wonderful monuments to the memory of the rosy god. For six years he had governed his dukedom in prosperity, and one day in a convivial circle of his friends, whom he was regaling with generous wine, cultivated on his own grounds, he resolved to erect a memorial in praise of its virtues. It was in 1589, that he called a celebrated cooper from Landau, and ordered him to construct a cask the largest in the world; and as every thing good comes from heaven, and can only prosper by heaven's blessing, it was to be deposited under the chapel that it might at least be near the sacred altar. It was finished in two years. It was elaborately ornamented with various devices and inscriptions. Five figures of lions, with the arms of the Palatinate in their claws, grinned, from the top and sides, and numerous other curiously carved images constituted its decorations. This cask contained five hundred and thirty-eight hogsheads. It was twenty-seven feet long, and nearly as high. It was bound together with twenty-nine hoops, composed of one hundred and twenty-two hundred weight of iron. But the designer of this fabric did not enjoy it long, for in the same year he slept with his fathers. His statue still stands against the crumbling walls of the castle. For thirty years, this cask was the wonder of Europe, but it was broken to pieces during the horrors of the



thirty years' war. For forty years it lay in ruins, until the Palsgrave, Charles Lewis, determined to revive the work of his illustrious grand uncle. It was rebuilt on a larger scale, and now held eight hundred and fifty-six hogsheads. It was more richly ornamented with carved-work figures and verses, than before. On the top there was a colossal Bacchus, with a goblet in his hand, and a chained, tongueless lion between his knees. On the edge of the front, there were four large Satyrs playing on winged instruments. On the top was a terrace, large enough to accommodate twenty-four dancers. A staircase of fifty steps led up to it. In 1667, it was filled with the richest wine, and a medal was struck in commemoration of the event.

Thus was John Kasemir's monument restored by Charles Lewis, and it continued during his life, and that of his son and successor, the joyous residence of the life-inspiring wine-god. But a desolating war broke out between France and the Palatinate. A powerful French army ravaged the fertile plains of that unhappy country; the cities and villages on the Rhine were burned; the earth was soaked with the blood of the inoffensive inhabitants, and in 1689 Heidelberg itself and this proud castle of her princes, fell a prey to the savage horde. In 1693, the work of desolation was renewed, and that which escaped the flames and the artillery, the infuriated foe tore to pieces with their own hands. By a remarkable chance, the venerable cask was rescued from the hands of the destroyer. The peace, that ensued, restored the prince to his throne, but the castle of his ancestors was in ruins, and the towns and fields of his country were desolate. He could no longer reside in the midst of his faithful subjects, and Bacchus, too, had abandoned his magnificent dwelling—the cask had been emptied.

It lay empty for forty years. It decayed and almost fell to pieces, until finally, Charles Philip in part restored the castle and established his residence among his people. The modern Colossus, in the subterranean hall, was now remembered; the prince ordered it to be renewed, and if possible, to be decorated more richly than ever. It was begun in 1727, and on the first of May in the following year, it was again filled with wine. Many additional figures were set up around it; a new terrace on the top, and a new stairway were erected. Two lions rampant were so arranged as to appear to support the cask. Numerous verses, in praise of wine and of the prince, were painted on all sides. On the right stood an image of the famous court fool, Perkes, which is to this day shown to visitors, and the cicerone of the establishment does not fail to tell you, that he drank his twenty bottles, regularly every day.

But this cask did not last long; it soon decayed; the decorations

fell off, and its reputation was endangered. The generous Elector, Charles Theodore, in 1751, came to the rescue of the falling monster, and ordered a new one to be constructed out of the most solid materials. No expense was spared to exceed all the previous works in beauty and strength, and 80,000 guilders were laid out upon it. This is the identical cask the visitor beholds at the present time; it is the chief of all similar structures in the world—the most worthy temple of Bacchus now in existence. It exceeds all its predecessors in capacity, and contains the enormous quantity of 934 hogsheads, or 236,000 large bottles. It is 30 feet long, 21 feet in diameter at the ends, and 23 feet in the middle. The staves are 8 inches thick. It is bound together by 18 wooden hoops, 8 inches thick and 10 wide, and over these, are numerous thick iron bands. It stands on an ornamental pedestal, several feet from the ground. It is 26 feet high from the floor, and in front, it is decorated with the crown and coat of arms of the prince, with his name in gold letters on a blue field. The plane and compasses used by the builder are still preserved. The former is seven feet long, and the latter eight. It has a poetic inscription on it, expressive of its wondrous qualities. A stairway conducts the visitor to the top, which is flat and large enough for 45 persons to stand on conveniently. Near this cask, is another of ordinary size, which is remarkable for its construction; it is without hoops, nor is there any visible means by which it is held together. It seems more like a solid trunk of an enormous tree, hollowed out from the bung hole, but yet it is really composed of staves, like any other hogshead. It is a complete puzzle in coopery. Reader, when you go to Heidelberg, forget not, I beseech you, the famous cask.

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SKETCHES OF A RESIDENCE IN THE SOUTH SEA ISLANDS. NO. IV.

The language of the Sandwich Islanders is remarkably soft and agreeable to the ear, and as the missionaries inform us, extremely rich and copious. I have often wondered why it was that these people have such an invincible repugnance to become acquainted with our language, or speaking it. As a general thing they cannot be induced to make an effort to acquire it, and, in many cases, those who understand it, cannot be induced to speak it. This repugnance is probably owing, in a great degree, to the large number of consonants in the English tongue. They find it extremely difficult, and, without much practice, absolutely impossible, to terminate a word without a vowel sound. The native language is full of vowels. Almost every word, and nearly every syllable begins and ends with a vowel. This predominance of vowel sounds, of course,

renders the language very soft and euphonical. As in Spanish and many other languages—*a* is sounded as *ah*,—*i* as *e*,—*e* as *a*,—*u* as *oo*,—*ai* as *i*—and *au* as *aw*. The limit of this number will not permit me to enter into any thing approaching a disquisition on the subject; therefore a single sentence must suffice to give your readers some idea of the structure and sound of the language—thus,

*Heri oe ta mai ka-hari wau.*

Come you to the house of me.

Mr. Andrews, one of the missionaries, and Principal of the High School for native children at *Lahainaluna*, on the Island of Maui, has compiled and published a very full vocabulary of the Sandwich Island language, in a large octavo volume, a copy of which I brought with me, and have presented to the library of the Academy of Natural Sciences of this city.

During my last sojourn, I was furnished with an opportunity of visiting, in a trading vessel, most of the inhabited islands of the group.—My old friend, Captain Hinckley, was the commander, and the *Avon* was again the ship. In addition, we had two gentlemen, resident at Oahu, as passengers, so that our time passed delightfully. Indeed I think I never enjoyed a little voyage of three weeks more. Our visit to the Island of Maui was to me very interesting. We saw the large high school at *Lahainaluna*, accommodating some seventy scholars, and although our visit happened during a vacation, we were furnished, by the Principal, with an opportunity of inspecting the work, and of judging of the improvement of the pupils, which we all, with one accord, pronounced fully equal to that of students in similar institutions in the United States.

At *Hawaii*, the largest island of the group, we found the natives in a good degree unsophisticated like those on *Kauai*. There is, on the island, no large town as at *Oahu*, and the foreigners resident upon it are chiefly missionaries. On landing, we were shown, by several old *Kanakas*, the rock on which Captain Cook fell when he was killed. It is a large block of lava, on the very verge of the sea in *Kareakakua* bay, and is universally known by the name "*Cook's rock*." It is now not one half its original size, in consequence of the curiosity of visitors, who have been in the habit, for years, of chipping off portions of it to carry home as relics.

About a mile from the sea, on an elevated piece of ground, is a rude monument, erected in 1825, by Lord Byron, Commander of His Britannic Majesty's frigate "*Blonde*," to Captain Cook. It consists of a simple red-cedar post, with a brass plate attached, on which is a short in-

scription. This, although usually called "*Cook's tomō*," is nothing but an exceedingly simple monument. Cook's remains have never been found, or the English Government would of course have assigned them an honorable place in Westminster Abbey.

It is well known that after the death of Cook, the natives themselves, even those engaged in the unpremeditated murder, heartily regretted the hasty stroke which laid him low. They were fully aware that he came among them with the best intentions, and that if they had suffered him to live, he would have proved a benefactor to them. They accordingly mourned for him publicly in their usual mode, with loud wailings, disfiguring their persons as for one of the royal family. An old man whom I met on *Hawaii*, and who was present at the death of Cook, informed me that *several thousand teeth* were struck out on the day following his demise. The body was then undoubtedly treated as were the remains of all persons of rank in those barbarous and idolatrous times. It was removed to a *Heiau* or Temple, where the flesh was stripped from the bones, and the latter inhumed in some cave, the locality of which has never transpired.

I have mentioned that the monument was erected by Lord Byron, a Captain in the Royal Navy. This nobleman is, I believe, a cousin of the poet. The object of his visit, was to take home the bodies of the late King, *Rihoriho* and his Queen, for interment. This royal couple accepted an invitation from his Majesty William IV., to visit the Court of St. James in the year 1824. A frigate was accordingly sent for them and after a long, but, in other respects, prosperous voyage, they arrived. They of course immediately became *Lions*; they were feted and fed in the palaces of all the Royal Dukes, and in those of many others of the higher nobility of the realm. They, no doubt, poor unsophisticated creatures, thought it their duty to devour all that was set before them, and they accordingly both died of a surfeit, within a few days of each other, after a residence of less than three months in Great Britain. I have never heard it suggested, but I think it highly likely, that if a few doses *per diem* of good Sandwich Island *poe* could have been administered, they would have recovered.

On my way home I spent three weeks, very delightfully, at Tahiti, one of the Society Islands. The harbor into which our vessel ran, *Papaete*, is, I think, the most beautiful I have ever seen in the South Seas. The native houses are lighter and more fanciful than those of the Sandwich Islanders, being built of interlaced canes or bamboos, and, instead of a thatch of grass, they are covered with the long broad leaves of the *Pandanus*; the ridge-pole, and cross beams being wound with beautiful,

fine sinnet. The Tahitians are perhaps a shade lighter in color than the Sandwich Islanders; much more warlike and spirited, and, unlike the latter, the highest chiefs are uniformly dressed in the simple native costume. Even the Queen, *Pomaré*,\* excepting on State occasions, is clad in a single garment of calico or tapa, and wears neither shoes nor stockings. Shortly after my arrival, I called, in company with the American Consul, Mr. Moerenhaut, upon her Majesty. When we passed through the rustic wicket gate in front of her simple habitation, I observed about half a score of women playing at quoits before the door of the house. One of these ran hastily, upon our entrance, into the cottage. Mr. Moerenhaut whispered me that this was the Queen. We stepped into the house, and I was introduced, by the Consul, in due form to *Pomaré*. She had just time to seat herself upon a pile of mats and to call up some portion of the dignity "which doth hedge a queen," when we stood before her. She received us, however, with more ease than I had expected, considering the undignified nature of her employment a moment previously, and conversed in the native language with the Consul, for perhaps half an hour, without a particle of embarrassment.

I found the language of the Tahitians so similar to that of the Sandwich Islanders, that I was enabled also to converse with her Majesty without much difficulty. She seemed somewhat astonished at this, being aware that the present was my first visit to her island. *Pomare* is married to a common native, whom she selected, doubtless, on account of his good looks. He has no power whatever, and is not in the least degree burthened with the cares of Sovereignty. Indeed, should *Pomaré* die, he would immediately return to the ranks. The only title he receives from natives as well as foreigners is that of the "*Queen's husband*."

I passed my time while at Tahiti, chiefly in procuring specimens of the native birds, of which there is a great number and considerable variety. I had also some very excellent sporting in the extensive forests of the Island. The common chicken is there in great abundance, in a state of nature; and, in company with natives as guides, I enjoyed several days capital shooting.

Another species of enjoyment, however, which the multitude can perhaps better appreciate, I found in going out alone in a canoe and

\* *Pomaré* is properly a man's, and not a woman's name. *Pomaré* was the name of the father of the present queen. At his death, and on her accession to the throne, she assumed his name, adding to it the word *wahiné* (a woman.) She now calls herself *Pomaré wahiné*—the *Woman Pomaré*.

looking for hours into the clear depths of the ocean. I usually paddled my canoe outside the reef, where the water is from fourteen to sixteen fathoms deep. Even at this great depth I could see almost to the bottom, so perfectly clear and pellucid was the water. The bottom is here covered with immense groves of arborescent coral, many of the branches of which rise to within a few fathoms of the surface; and between these branches the magnificent fishes of the tropics were seen sporting in countless numbers, like brilliant birds through the most gorgeously painted foliage. Several times, while on these interesting marine excursions, I had the pleasure of seeing large shoals of flying fish rise at some distance and plunge into the sea near my boat, looking like pieces of polished silver as the rays of the sun fell upon them. On one of these occasions, a Dolphin had been in pursuit of them, and the magnificent depredator leapt so near me, that I could have touched him with my paddle.

A circumstance occurred a few days before I left this island, which was a novelty to me, and I am induced to suppose may possess interest for the readers of the Journal.

Strolling along the beach one fine morning, I overtook the Captain of a whaling vessel lying in the port, who stopped me in passing, to point out a whaler which had just cleared the harbor, remarking, in a professional tone—"She has backed her foretopsail, Sir." "Well," said I, "suppose she has, and what then?" "Why," he answered, "don't you know that means she has a whale?" This information immediately put me on the *qui vive*. I asked him if he would go out with me to see the fun. He replied that he would gladly go, if we could procure a boat. Recollecting that I had seen a whale-boat ashore a few hundred yards down the beach, I requested him to wait a few moments, and ran hastily to the boat, which I secured; and by an offer of a few rials to some native men whom I found in a village near, furnished myself in a trice with six good oarsmen. We pulled back to where I had left the Captain, took him on board, and in a few minutes were clear of the harbor, and in full run for the whaler. Our men gave way handsomely, and in a very short time we found ourselves among the boats which had left the ship in pursuit of the monster. We were too late however to see the first harpoon thrown. One boat had already fastened to the whale, and it was seen clearing the water at a fearful rate. Towards this boat we pulled, and before we reached it, up surged the huge fish to blow. A column of what seemed thick blood was projected from its snout to the height of perhaps fifteen feet, and the sea all around was red with blood. In a moment, a second boat shot by us,

and ran within, what seemed to me, fearful proximity to the wounded animal. The man in the bow rose deliberately, and poising his harpoon for a moment, drove it up to the staff in the whale's side, shouting, as he did so, at the top of his voice, "*Starn all.*" The boat was instantly driven backwards about twenty feet, and at the same moment the whale dived head foremost, striking the sea a blow with his flukes; which might have been heard a mile. By this time, however, the poor creature was so exhausted, that after running out the line for about a minute, he broke water again. A third boat then approached him, running almost upon his side, the bow-man of which passed a long lance into him and drew it forth again with the utmost coolness and unconcern. After this finishing thrust, the whale did not dive, but shuddered so as to agitate the sea all around him. All the boats then drew off from him to the distance of perhaps a hundred feet, and in less than a minute, he went into his "*flurry.*" He whirled his immense carcass once round, and lashed the sea with his tail until its surface was covered with a bloody foam; then, after forging ahead a few yards, he floated dead beside the boats.

The ship immediately made sail, and ran along side the prize; and then commenced the operation of "cutting in," as it is called. This was done by cutting off the blubber with sharp steel instruments called "spades." The operation commences at the head. A large mass of about two feet in width (which, in a fat animal, is from fourteen to sixteen inches, in thickness,) is raised, and a hole made in the end of it, into which a noosed rope is inserted, and prevented from drawing out by a "*tozzle*" passed through the loop. The other end of this rope is rove through a block on the end of the fore or main yard, and as the cutting is continued in a spiral manner around the body of the animal, the carcass rolling over and over in the sea, the hands at the other extremity of the rope sway away until the strip of blubber reaches the block on the yard, when it is severed, and swung in-board in readiness to be cut up and put into the "*try-pots.*" Another piece of the blubber is then raised and *toggled* in the same manner; and thus the operation is continued until the whale is completely skinned. The "*case,*" (i. e., the head,) is then cut off at the *foramen magnum* or occipital hole. The moment the vertebral connexion is severed, the whole head falls, the snout going down vertically, and the *occipital* region lying horizontally just above the surface of the sea. The head, or *case*, of a Sperm Whale, such as I saw killed, is filled with liquid oil. This is pure sperm, and is bailed out with buckets. I did not remain until this process was completed, but, upon inquiring of the Captain what quantity the

case would contain, was informed that in the animal before us, it would probably not be less than *fifteen barrels!*

The whole of this process was to me very interesting, and I had been so anxious to see a whale killed, that I was more than once on the point of embarking in one of these filthy ships, for the sole purpose of witnessing the sport.

In a few days after this incident, I embarked in an English ship for Valparaiso, and bade adieu, probably for ever, to the Islands in the South Seas.

*Philadelphia, 1847.*

J. K. T.

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LATIN-ENGLISH.

On page 144 of the Journal there is a "Fragment" of doggerel Latin, in which a great number of English words are used, as if a Roman had been giving the proceedings of an English Debating Society. The orthography of the piece is, however, not in keeping. The words *you make here* are properly rendered *iu* (better *ju*) *maek hir*; but *keepare*, *shamefullé* (in four syllables) *selence* (*si-len-ke.*) *pinchendi*, *hookarat*, *challenjo* (there is no *kallenjo* in English,) *showebo*, *waitite*, *minutes*, would have been better if written *kipare*, *shem... sailens*, *pintshendi*, *hukarat* (or *hucarat*) *tshallendjo*, *shoëbo*, *wetite*, *minnits*. *Justnou* would be better *djöstnau*, although objection may be made to the first vowel as heard in *murder*, which has no proper character in Latin, although there is one in a solitary inscription, which might be introduced when required to represent this sound. In the "fragment" it is represented by *u* in *rum-pum*, *e* in *orderum*, and by *o* in *nomscols*.

*Columbia, Pa., April 14th, 1847.*

S. S. H.

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*The Literary World, a Gazette for Authors, Readers, and Publishers. New York. \$3 per annum.*

This excellent new periodical is published in large quarto numbers of twenty-four pages each, on good paper. The literary and scientific reviews are excellent, and since the Literary Bulletins of Appleton, and Wiley and Putnam have been discontinued, it is the only medium through which a knowledge of recent publications here and abroad can be obtained. The lists of American, English, French, and German books are very full, so that the work is indispensable to all who wish to be acquainted with the current of literary events. It will be found of great use to authors, in reality or prospectively, as by taking it and



marking the titles of works, having a bearing upon the subjects he may intend to elucidate, he will know what to consult, when he commences writing, and he will thus be the less likely to put forth old views as new ones.

## COLLEGE RECORD.

*Bible Society.* The annual meeting of the "Bible Society of Pennsylvania College and Theological Seminary" was held in the College Chapel on the 3rd ult., and the following gentlemen were elected officers for the ensuing year: *President.*—Prof. M. L. Stoever. *Vice-Presidents.*—A. C. Wedekind, C. Kuhl, R. A. Fink. *Cor. Sec.*—J. K. Plitt. *Rec. Sec.*—W. M. Baum. *Treasurer.*—F. Benedict. *Board of Managers.*—A. Essick, B. M. Schmucker, G. J. Martz, P. Born, H. M. Bickel, S. Sherer, J. A. S. Tressler, P. Raby, P. Sheeder, E. S. Henry, F. W. Brauns, J. Evans.

From the annual report, which has been placed upon our table, we gather the following facts. The Society was organized on the 14th of July, 1839. During the succeeding year, the Board of Managers, in compliance with the request of the State Society, undertook to explore the County of Adams, visiting every family and supplying the destitute with the Sacred Volume. The work was prosecuted with great cheerfulness and zeal, the County was thoroughly explored, and several hundred families, found destitute, were furnished with the Word of God.

Since that period, the Society has appropriated its funds to the use of the Parent Society in Philadelphia, and by its contributions have constituted three of the Professors life members. Several years having elapsed since the former visitation, and a re-supply of the County with the Scriptures being deemed necessary, the Board, last December, determined to renew the effort this Spring. Arrangements are, therefore, making to commence operations, and with the assistance that has been promised by the Female Society of the Borough, it is hoped that the work will be speedily accomplished. During the year, two valuable and useful members of the Board, Messrs. *Renshaw* and *Albert*, whose Christian example is worthy of all imitation, and who had expressed an earnest desire to unite in the contemplated exploration, have, in the Providence of God, been called from their good works on earth, to a blissful reward in heaven.

The Treasurer's report exhibits the sum of *thirty dollars*, which, by order of the Board, has been forwarded to the Parent Society.

The annual address, according to appointment, was delivered on the 14th ult., by Rev. S. W. Harkey, of Frederick, Md.

## LITERARY CONTEST.

The Annual Contest between the *Phrenakosmian* and *Philomathæan* Societies of Pennsylvania College, took place on Wednesday evening, the 14th ult. This is always regarded as an interesting occasion. It is anticipated by the young men, with deep interest, long before its arrival, and for months previous furnishes a prolific theme of conversation.— We would hail its recurrence, if for no other reason than to behold the bright countenances and smiling faces, so expressive of happiness, that greet you on every side. We love to see youthful enthusiasm, and honorable rivalry. Even to one, who has gone forth from his *Alma Mater*, and after a lapse of several years, returns to witness such a celebration, what pleasurable feelings does the occasion enkindle, what pleasing reminiscences does it awaken! The past, with a crowd of gentle associations, rushes to his mind! Every scene is sanctified with happy recollections, every spot is hallowed with delightful incidents! As he gazes upon the white badge, he remembers how often it made his heart beat responsive to its successes, and the blue ribbon, how often with dismay he beheld its proud march to victory. How we love to revert to College days, when our calm bosom was never dimmed by the tears of sorrow, nor clouded by the hand of misfortune; when, secluded from the noise and bustle of a cold and selfish world, and free from the engrossing cares and responsibilities of life, we enjoyed the holy quiet, the peaceful shades of Academus; when our path seemed strown with flowers, and we lived only to be happy! Oh how joyous is the student's life—how full of hope! What fairy prospects are before him! How in imagination, he paints every thing in the brilliant hues of the rainbow! No effort seems too great for the grasp of his anticipations—no flight too high for the aspirations of his ambition! Is it not a glorious era in a man's life? In our subsequent joys, we experience, nothing comparable to it.

But we have wandered from our object. When we took up our pen we only designed to make a record of the Contest, which recently came off, in the College Church, in the presence of a large and attentive audience.

The following programme presents the order of exercises:

PRAYER by Rev. Dr. MORRIS.

ESSAYS—"The Crescent and the Cross"—*W. H. Morris*, Baltimore, Md.  
 "The Curse of Genius"—*V. L. Conrad*, Pine Grove, Pa.

ORATIONS—"Extinction of Polish Liberty"—*W. H. Witherow*, Gettysburg, Pa.  
 "Divorce of Josephine"—*L. E. Albert*, Hanover, Pa.

DEBATE—"Can the Drama be made subservient to Intellectual and Moral Culture?"—Affirmative—*R. A. Fink*, Middletown, Md. Negative—*J. A. S. Tressler*, Loysville, Pa.

BENEDICTION by Rev. Dr. KRAUTH.

Every thing passed off apparently much to the satisfaction of all concerned. Although the service was protracted beyond three hours, the assembly gave little evidence of weariness, and seemed reluctant to leave the place which had afforded them so much pleasure.

The Music was charming, and fully sustained the high reputation which the Haydn Association enjoys.

### Receipts during April.

Rev. M. G. Allman, Danville, Pa.	\$3 00	Vols. 1 2 & 3
Rev. J. V. E. Thorn, Carlisle, Pa.	1 00	- 3
Rev. J. Winecoff, Bedford, Pa.	1 00	- 3
Rev. W. G. Laitzel, Martinsburg, Pa.	1 00	- 3
Rev. R. Weiser, Selinsgrove, Pa.	1 00	- 3
Prof. S. S. Haldeman, Columbia Pa.	1 00	- 3
Rev. A. Berg, Shrewsburg, Pa.	1 00	- 3
Rev. G. A. Nixdorf, Frederick, Md.	1 00	- 3
Rev. Dr. Schmaucker, Gettysburg,	3 00	- 1 2 & 3
Rev. L. Eichelberger, Winchester, Va.	2 00	- 2 & 3
Rev. H. Bishop, Indiana, Pa.	1 00	- 3
Rev. John Ulrich, Petersburg, Pa.	1 00	- 3
Rev. P. Sahn, Blairsville, Pa.	3 00	- 1, 2 & 3
J. P. Smeltzer, Funkstown, Md.	2 00	- 3 & 1
James Ellis, Chester co.,	1 00	- 3
Henry Tritle, Waynesboro', Pa.	2 00	- 2 & 3
T. Stecker, Gettysburg,	1 00	- 3
F. W. Brauns, -	1 00	- 3
D. J. Lyler, -	1 00	- 3
W. K. Gilbert, -	75	- 2
Joshua Evans, -	1 00	- 3
W. P. Ruthraul, -	1 00	- 3
E. G. Falmestock,	1 75	- 2 & 3
S. H. Buehler, -	1 00	- 2
Philomathean Society, -	2 00	- 2 & 3

### Donations to Cabinet.

1. From *Rev. Dr. Morris*, per *Prof. Storer*, 18 Birds skins, 11 Reptiles, 1 Squirrel, a lot of Indian implements, a lot of Paste-board Trays for minerals, also an Ostrich egg.
2. From *Rev. W. A. Parsons*, per *Prof. Storer*, Specimens of writing in forty different languages.
3. From *Rev. B. Weber*, per *J. Davis*, a specimen of Peacock Coal from Schuylkill county, 1 Indian Axe, Grapes shot from Ft. Augusta, Lepida Dendra from Bedford county, Sulphuret of Iron from Schuylkill county, Iron ore from Greensburg of New Jersey.
4. From *Wm. B. Howard*, per *M. Posey*, Bullets brought from the battle ground of New Orleans.
5. From *Rev. G. A. Nixdorf*, 1 Coin.
6. From *P. Barn*, 1 Coin.
7. From *H. S. Faber*, Hanover, a handsome specimen of Limestone.

### Donations to Library.

1. From *Prof. M. L. Storer*, Cassin's copy by P. A. Browne, LL. D., of *Philadelphina*.
2. From *Rev. Dr. Morris*, 3 Vols. on Natural History.
3. From *Rev. Dr. Kurtz*, Baltimore, Md., per *Prof. Storer*, *Fac Simile* of a tablet of bronze, on which is engraved a senatus consultum (Roman Act of Parliament,) prohibiting Baecanid, etc. etc. promulgated in the year of Rome 597, or B. C. 186, (Livy, xxxix. 8-15). It is probably hung up at some public place at Rome. Procured at the Imperial Library at Vienna, Austria, June 25, 1845.

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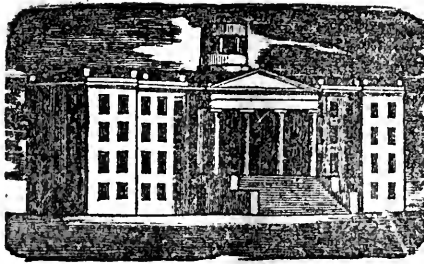
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[NUMBER 8.

THE  
**LITERARY RECORD AND JOURNAL**

*Of the Litinaean Association of Pennsylvania College.*

JUNE, 1847.



CONDUCTED  
**By a Committee of the Association.**

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NATURAL HISTORY RECREATIONS. NO. II.

BY AN AMATEUR.

In the February number of this Journal, I gave a paper on those minute and remarkable animals called *Infusoria*, from the fact of their being developed in infusions of vegetable or animal substances.

Since that time, I have been amusing myself and friends by a more scientific examination of them, and we here give you a few of the results.

A good microscope is essential for this pursuit. There is no optical instrument which affords more solid amusement than this, for it displays to the wondering gaze the most extraordinary operations of nature. I bought one in Paris of the celebrated Chevalier manufacture, which cost me there about twenty-five dollars, and which answers every purpose.— A cheaper one would serve for ordinary observation.

It will not appear strange to those who have any idea of the progress of modern science to hear, that these infinitesimal animals, most of which are invisible to the naked eye, have been systematized, classified and named as to genera and species, just as the quadrupeds, fishes and birds have been. Splendid works have been written on the subject of these animals, most of which are illustrated with finely engraved and colored figures of them.

I shall mention, at present, but a few species, beginning with the most simply organized.

The first class embraces those, which have a stomach composed of many sacs, but have no intestinal canal, and hence no posterior aperture.

These are the smallest of all known organisms, and how large do you suppose they are? It seems ridiculous to apply to them any word indicating size, for often they are not the 2000th part of a line in length!

A *line* is the tenth part of an inch, so that these animals are 2000 times smaller than this —. Can you conceive that? Of course, they must be magnified several hundred times to be seen at all. Under my glass, magnified about 300 times across, they appear about the size of the period which closes this sentence. Some persons may think this all fiction, but let them call at my study any day or night, and I will convince them. Seeing is believing. They are developed in all decomposing substances, and it is they which occasion the cloudiness of all liquids in which animal or vegetable matter is infused. Some of this family are destitute of all *processes*, i. e., appendages; others, have *ciliae* or hairs, and others have feet like processes. Some are globular, some oblong, and others change their shape. They multiply by division or separation. You can see this process under the microscope. The old animal gets a furrow through it, which becomes deeper, until it divides in two, and then these are two perfect animals. This separation is going on constantly, and requires only about an hour's time, so you may have an idea of the number of them. Does it not seem queer to talk of the *depth* of a furrow in an animal that is more than one hundred times thinner than this paper!

The *Monads* (Monds) are the smallest yet discovered. They are mere globules without tail and eyes, and swim very rapidly through the water. Immediately behind the mouth there are from two to six stomachs, which when filled with coloring matter, still do not embrace half of the animal. If you calculate the size of the smallest *Monad* at  $\frac{1}{5000}$  of a line, then these little stomachs would be only  $\frac{1}{5000}$  of a line and some of them from 6 to 12000 times smaller!!! The smaller species *M. Terms* is 2000 times smaller than this—and you may try to conceive how many of them could be contained in a single drop of water—5000 million is the number calculated. They are developed in infusions of various kinds. Whence do they come? How are they generated? The atmosphere is essential to their development, and hence you may say that their eggs are floating about through the air and accidentally fall into the water. In that case, the air must be so densely crowded with the eggs of many hundred species of infusoria and thousands of millions of specimens, that it would be rendered obscure, and *with every inhalation*, we would take millions into our lungs, whence they would be mingled with the blood. They would be developed there, and what would be the consequence? We should be inwardly consumed with infusoria.

The dusk like *Monad* (*Enchely pulvisculus*) is oval and green, and is found in the green slime attaching to wood or stones in ditches.—



They are large in comparison with the former, and are only 150 times smaller than a line.

I wish I dared enter largely into the description of many of these infinitesimals of creation, but my limits will not allow it. I must be very general, and of course, not satisfactory to many readers.

In the milt of fishes, there are millions of minute animalcules, which have tails. The Genus is *Cercaria*. It has been observed that the milt does not perform its function, until these animals are developed in it, so that they act an important part in the economy of nature. There is nothing too small for God to work with, and there is nothing so small or mean as to be beneath our scientific investigation.

I said that many of these animals are furnished with *ciliae* or hairs, which they keep in constant motion. Some of them have these only in front, and by their motion an eddy is occasioned in the water, by which still smaller animalcules are forced into their mouths. Many (*amoeba*) have the faculty of assuming all sorts of Protean shapes, and are constantly undergoing changes of appearance. The most bizarre figures are taken on, and immediately they assume another, so that you are reminded of an expert posture master on the stage.

Some (*Baccillaria*) adhere to each other and look like a tape worm; then they divide and form all sorts of regular figures.

Some (*Vorticella*) have the appearance of a flower, attached to a stem by styles. This style is spiral and can be extended to a great length. They draw themselves back with the rapidity of lightning and then gradually unfold the style. Their appearance and habits are very singular.

The wheel animal (*Rotifer*) is one of the most remarkable. Its *ciliae*, in front, look like wheels which are constantly turning round when the animal is at rest, and the water flies about in a complete wheel.—Now, all this convulsion of the water takes place in a space not larger than the smallest word in this sentence!! and yet it is a convulsion, for under the glass it is seen in a violent commotion, *something* like the whirlpool below the Falls of Niagara. This is the animal which is said to revive after having been dried for many years, and hence is called *Rotifer rediviva*.

Endless amusement is thus afforded by the microscope. Thousands of animals may be seen at one view in a single drop of water, and if you have good eyes, you will not soon grow weary of looking at their fantastic evolutions.

## ANOTHER LOOSE LEAF.

For five years I had a most valuable zoological correspondent at Cassel. He was the most liberal *exchanger* with whom I ever had any commerce. He usually returned five for one, and all his *Naturalien* were so clean, so neatly labelled, so nicely packed—the boxes were so firmly secured—so perfectly protected—his letters were so studiously worded—the signature was so precisely written, and his sonorous title “Kontrollleur der Staat’s Kasse” so conspicuously marked—in a word, all had such a prinky and old maidenly air, that I concluded he must either be a bachelor or that his wife helped him in his zoological labors. The wives of naturalists do sometimes aid their husbands, and it was not long ago that a correspondent thus wrote to me: “I find in my wife a most admirable assistant.” (He had just been married.) “She writes my labels—copies out in her beautiful and fair hand, my spider track manuscripts—mixes my colors and washes my brushes when I wish to draw an animal—sharpens my knives when I am going to dissect, and even this morning, held the leg of a rabbit which I was skinning—(it was a fresh subject)—she dusts the stuffed specimens so profusely scattered round my room, and keeps all things snug. You would not now stumble over that crocodile, nor sweep down with your cloak that bald eagle as you did when you were last here. My work shop is as snug as a parlor, for it has been swept with a new broom. In her anxiety to help me, she sometimes even forgets to give out the meat and vegetables to the cook, so that I have a late dinner, but *n’importe*, this is one of the sacrifices we must make for science.” But I have forgotten my German friend and I will return. Well, I mounted up to the fourth story of a large and splendid house to see him. I had gone there in a new two horse barouche—the coachman was in livery—his blue coat was profusely ornamented with silver lace—his breeches were of stainless yellow plush—his boots, the tops of which kissed his knees, were of shining black—his hat was banded with a broad silver stripe and an enormous leather cockade, after the fashion of a peacock’s tail, extended four inches above the top of it. I had not ordered such an un-republican equipage. I called for a coach and this was brought, and any gentleman will be accommodated with the same establishment if he orders a coach in the office of the Hotel des Römischen Kaisen, at Cassel.—Well, I mounted to the fourth story and my friend was not at home.—Could not I have learned that from the servant below? No, for in these large houses, each story is occupied by a different family—each family has its own servant. All you can ascertain below is, on which story your friend lives, and that is usually designated on one of the numerous

bell pullers, or by a *portier* who is a sort of directory for the whole house. I left my card and drove home. I well knew that card would bring my friend as soon as he returned. It was not long before a gentleman rushed into my room,—he was about forty-five—extremely precise in dress—somewhat hurried in manner, and so rapid in utterance that I could scarcely understand him. He came up to me as an old acquaintance. He seized me eagerly by the hand and overwhelmed me with congratulations, at such a rate, that I could not slip in a word with the little end foremost. I attempted to speak, but it was in vain—he loaded me with compliments—he welcomed me to Cassel—he offered me his services—his house—every thing—he considered himself the happiest man in the world at seeing me, and a long string of equally extravagant “assurances of his distinguished consideration.” This was my friend Herr von R—. I at once accompanied him home and such a day as we spent none but a naturalist can imagine. He is a bachelor and lives in a style becoming a high officer in the Hessian Government. His entomological treasures were at once displayed, and we revelled in delight as drawer after drawer was opened to our view. Herr von R— is a most industrious naturalist,—he is quite distinguished in one department and devotes all his spare time to the cultivation of Zoological science. We were as intimate and familiar as friends of many years standing, and it was amusing to compare the ideas we had formed of each other’s personal appearance. In our case, as in most others, the idea was entirely different from the reality. He thought I was an old man in specs and wig, with a rather mahogany colored face and considerably sprinkled with pock marks,—a sort of aquiline nose and high cheek bones; and I thought he was a young man with a ruffled shirt and wide wrist bands—with numerous rings on his fingers, and redolent of cologne and pomatum. A noble hearted, upright gentleman, is my friend, Herr von R—.

He conducted me to another *Savant* of Cassel, who received me after the genuine German fashion, barring the kiss. He literally screamed with delight, and in grasping my hand, jerked me half way across the room. This was Professor D—, of the Gymnasium. He is a geologist, and quite distinguished in his department. He is young, ardent in the pursuit of science, and enthusiastic in his attachment to friends. How flattering it is to an American abroad, to hear such men speak in high terms of our *Savants* at home. Prof. D— was well acquainted with the names and labors of many of our geologists, and spoke in exalted strains of the rapid strides our young republic had made in physical science. His wife is one of the few really handsome women, according to our American standard, you meet in Germany.

The next day I dined with the Professor, in company with a Lieutenant General of the Hessian army. Said he in a playful style, "One of your countrymen has greatly injured a member of our family." "In what way, Sir?" I asked with much concern. "Why, Sir, my father was among the Hessian troops in your revolutionary war and came home *minus* a leg, which one of your ugly Yankee bullets knocked off." "He had better remained in America as many of his countrymen did, whose children are now among our most respectable citizens," I replied. "Ah! if he had remained there, I would not have been a Lieutenant General in the Hessian army." "But you might have been something better in America, and possibly Governor of a State!"

The conversation turned on the sermon we had just heard in the Garrison church. A whole regiment and the prince were there, and a splendid military spectacle it was. "To-day the Prince suffered some in church—Pastor Martin did lay it thick on him," said the General.—"How so?"—I inquired—"I did not observe any thing particularly applicable to the Prince?" "Did you not hear how forcibly he denounced unfilial conduct?" "Yes." "Well, all that was applicable to the prince, probably intended for him who is at loggerheads with his father, and rumor says, he is an undutiful son."

After church, the prince reviewed the regiment and gave audience in the street. This is the man who literally bought "for a consideration" the wife of another man—married her, and now lives with her.

I had a letter to Professor P—, and was highly delighted with this world-known conchologist. He speaks English better than any German Savant I remember encountering. Most of them understand our language well enough to read it, but few speak it fluently or correctly. Prof. P— kindly presented me with several Nos. of his conchological journal, and showed me other evidences of polite attention. He is a man of middle age and vigorous constitution.

I do admire the frank and whole hearted generosity of these Germans at home. There is no disguise in their demeanor—no *hautecur* in their bearing. In most cases, even without a letter, you are most cordially welcomed, if you are a man of science, and even if you are not, and announce yourself as having come to pay your respects to them as men of science, they are flattered with the compliment and treat you kindly, if they are at leisure.

There are several naturalists of high distinction, in Cassel, and not a few amateurs. They complain bitterly, if not loudly, that their prince does not foster science. Prof. P— said, "Sir, the Hessian soil is not favorable to the cultivation of science." "But" said I—"it has pro-

duced many flourishing plants, for are not you and Prof. D—, and Mr. von R—, and Dr. T—, all Hessians?" "Not all of us, but then a sterile soil sometimes produces fragrant flowers, while all else around is crowded with noisome weeds—without a figure, Sir, our prince does not patronize science." Still most of these men, by the mere force of genius, have gained a European reputation and will be cherished by the scientific world, though they are neglected by their prince, but what else could you expect of a man who would buy and then marry another man's wife!

J. G. M.

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#### AN ADVENTURE WITH "BLACK-FEET" INDIANS.

The trading party, under the escort of which I placed myself for the purpose of travelling over the Rocky Mountains, with the object of exploring that interesting region in search of novelties in Natural History, had arrived at a beautiful little grove of Cotton-wood trees, near the head waters of the *Nebraska* or Platte River. For nearly three weeks previously we had traversed waving prairies, sandy plains, covered with aromatic worm-wood, and sterile tracts supporting no vegetation, except the short, dry buffalo-grass; where not a bird enlivened the scene with its melody, and nothing varied the dull monotony except an occasional herd of bounding antelopes, a straggling bison, or a crouching hare. We had not, in all this period, seen a tree. It may therefore readily be imagined that the very sight of this *Oasis* in the inhospitable desert was cheering to the eyes and heart of a young and enthusiastic naturalist. Our matter of fact fur-traders, however, did not sympathize in my delight. The party passed slowly by, but I found it impossible to resist the impulse to explore the grove, feeling assured that it abounded with beautiful birds, wholly unknown to the naturalist. I accordingly fell back, taking care to elude the observation of our leader, whose orders were peremptory that no one should detach himself from the main body on account of its being known that hostile Indians were in this vicinity, and quietly entered the wood. After dismounting, I fastened my horse by the long "trail-rope" to a sapling on the verge of the forest, and in five minutes was in my glory. As I suspected, the trees were literally crowded with beautiful birds, most of which were entirely unknown to me. The arches of the little forest rang with the rapid reports of my double-barreled detonator; new birds were falling around me in every direction, and I was gathering them from the ground with hands that trembled with eagerness and delight, when I was startled by a shrill, quick and loud neigh from my faithful and affectionate

companion tethered on the borders of the wood. I listened, and in an instant distinctly heard the clattering of horses hoofs upon the hard prairie in a direction opposite to that in which the party had travelled. To deposit my cherished specimens in my game-bag and run to my horse was the work of but a single instant; and well it was for me that I lost no time, for, within forty yards of me came three tall Indians in their war paint, their horses leisurely trotting on the trail of our party. How I unbound the trail-rope from the sapling I do not know; but in an instant it was disengaged; I sprang upon my horse's back like lightning, without, as I believe, touching the stirrup, and, with the long rope trailing on the ground behind me, dashed off at top speed. At this instant the Indians could not have been ten yards from me. They set up a simultaneous yell that froze the very blood in my veins; and then the whole party called *Abseròkie, Abseròkie*, at the top of their voices.— This word I knew to be the countersign of the Crow Indians, who were at that time nominally friendly to the white traders, but I had listened to more than one story of this call, being used by the Black-feet to entice straggling white men to their destruction, so I spurred on faster than ever. I knew by the sound that I was gaining on my pursuers on account of the superiority of my horse, and turned in my saddle to assure myself of the fact, when a shrill whistle sounded close to my ear, and instantly after I heard the sharp crack of a rifle. This was getting to be rather warm work, and I commenced to sway my body from side to side to elude a second aim. In this I was perfectly successful, for, although the next moment another gun broke the silence, the leaden messenger flew wide of its mark. Still we went tearing on; the sound waxed fainter in the rear, and when I looked behind, my savage pursuers were quite out of gun range. My courage revived; I pointed my piece with one hand over my shoulder and fired my single remaining charge at the foe. This drew a long, loud yell from them, evidently expressive of rage and disappointment. My gun had been charged with small shot and of course the missiles did not reach one tenth the distance; but it had its effect, for I saw them halt immediately after, and apparently engaged in consultation. I gave them but one look, and dashed on, never relaxing my speed until the rear of our caravan appeared slowly moving along the plain. The Indians were then no where to be seen. Upon joining the party, I mounted a fresh horse; and thenceforth, during our long and tedious journey, was careful never to lag far behind the main body.

J. K. T.

Philadelphia, May 29, 1817.

## REGIMEN SANITATIS SALERNITANUM.

“Reader, the care that I have of thy health, appears in bestowing these Physicall rules upon thee: neither needest thou be ashamed to take lessons out of this school, for our best Doctors scorne not to read the instructions. It is a little *Academi*, where every man may be a graduate, and proceed Doctor in the ordering of his owne body. It is a garden where all things grow that are necessarie for thy healtie. This medicinable Tree grewe first in *Salerne*, from thence it was removed, and hath born both fruit and blossomes a long time in England. It came to me by chance, as a jewel that is found, whereof notwithstanding I am not covetous, but part the treasure amongst my countrymen.”

Such is the highly laudatory language in which the editor of “The Englishman’s Doctor” of 1607 introduces the Schola Salerni to his readers. The appeal of the modern French editor, Dr. Pougens of Montpellier, is somewhat more modest. “Voici, ami Lecteur, un livre qui vous fera sans doute plaisir, car vous y tronverez, nous l’espérons, des conseils sages, joints à l’agrément, l’*utile dulci* d’Horace.” Sir Alexander Croke offers no apology for his edition of Oxford, 1830, other than the simple remark, that above one hundred and sixty editions, all now exhausted, sufficiently attest the merit of the work. These considerations will serve as my excuse for bringing to the notice of the readers of the Journal, this ancient and singular treatise, little known out of the medical world, but having charms for all who care for curious learning. It is indeed somewhat remarkable that it should be so generally unknown. Jean Paul alludes to it as “the Salernic spinning-school, in which one is taught to spin out the thread of life in fairer wise and without foreign mixture,” and Carlyle, in translating him, frankly admits his ignorance of the allusion,—an ignorance surprising in a person of his singular erudition. The fact may be accounted for by the professional and somewhat technical character of the work.—Always popular with medical men, it has now assumed a value for the general reader from its mere antiquity, and as being one of the few literary relics of the age in which it was written.

It derives its name from the Medical Faculty by whose authority, and, perhaps, by whose joint labor it was prepared. The city of Salerno was favorably situated during the dark ages for literary culture.—It was comparatively removed from the assaults of the barbarians. After its capture by the Normans under Robert Guiscard in 1075, it enjoyed a degree of repose, unusual in that warlike time. It had intimate commercial relations with Constantinople and all the ports of the East. It became the refuge of oriental scholars and their books, while its students,

by their proximity to the Arabians, were enabled to become possessed of their learning also. The precise date of origin of its medical school cannot be fixed. Ordericus Vitalis speaks of it in 1059 as existing "ab antiquo tempore." Giannone asserts that it existed in the time of Pope John VIII. (872 to 882.) Neither are its founders better known. Mazza, on the faith of an ancient chronicle, asserts that they were Rabbi Elinus, a Jew, Pontus, a Greek, Adala, a Saracen, and Salernus, a Latin. Others declare that the medical reputation of Salerno was originally due to the cures performed there by the bones of St. Archelais. The more probable story is that the founders of the school were the monks of the monastery of Monte Casino, founded by St. Benedict in 528. It was about this period that Cassiodorus recommended to all monks: *Legite Hippocratem et Galenum*. We know that the practice of physic, and also of the law, was in the hands of churchmen until the decree of the Council of Lateran forbade it in 1139, and, even after this, they continued to practice, notwithstanding the decree of the Council of Tours in 1163 and that of Honorius III in 1216. The Jesuits always have continued to dabble in medicine, and have owed much of their missionary success to this fact. The title of *Pulvis Patrum* was given to the Peruvian Bark from its use by the Jesuits before it was received into favor by the profession. The monks of Monte Casino appear to have practiced medicine according to the rude empirical rules of their day, the principal agent in use being the lancet, employed both as cure and preventive. One of the most curious passages in the ancient Chronicle of Jocelyn of Brakelond, recently published by the Camden Society, is the mention of the gossips of the monks at their sociable session in the refectory, "*tempore minutionis*"—at the time of general blood-letting.—The first abbot of Monte Casino mentioned as encouraging medicine is Bertharius, who was murdered by the Saracens. Alfanus the Second, who became abbot in 1057, wrote upon medicine, and the abbot Desiderius, who afterwards was Pope Victor III, is mentioned as a skilful physician.

The fame of the school did not become extended until it had gained the services of Constantinus Africanus in 1075. He was a native of Carthage, studied thirty-nine years at Bagdad, travelling occasionally, and took refuge from the persecutions of his rivals at Salerno, where he was converted to Christianity. He appears first to have made the monks acquainted with all the treasures of Arabian learning. His disciples spread over all Italy, and with them the fame of the school. The pupils became numerous and soon included their ecclesiastics. There is reason to believe that about this period, the practice of medicine began



to pass into other hands than those of the monks. Still, we find St. Bruno practising physic, until his death in 1126, and the archbishop of Salerno, Romualdus II, called to attend medically William, King of Sicily, in 1127. Some of the names of eminent physicians which appear about this time are apparently Jewish, and it seems that even the women of Salerno studied, practiced and taught medicine. Four females wrote acceptable works on medicine, at least one received the honors of the doctorate, and Sentrà Guerna stands as the name of the only individual of the fair sex, who ever filled a chair of the Practice of Medicine! The School seems to have assumed the style of a University, about the beginning of the 13th century. Its faculty consisted of ten Doctors, the eldest of whom had the title of Prior. Their seal bore the proud inscription *Civitas Hippocratis*. The form of conferring the degree was peculiar, the Prior placing a book in the hands of each candidate, next a ring on his finger, then a crown of laurel on his head, and finally implanting a kiss on his cheek!

Such was the School which produced the little work we are noticing. The book consists of aphorisms, containing instruction for preserving health and curing disease. The first lines explain the immediate object of its composition.

Anglorum regi scribit Schola tota Salerni,  
Si vis incolumen, si vis te reddere sanum, &c.

Some of the French copies read *Francorum regi*, which is evidently an alteration, and is regarded by Sir A. Croke as a striking evidence of "that mean spirit of envy, too often found even among superior Frenchmen"—a sweeping condemnation of a whole people, because of the follies of some stupid editor, which proves only the surly John Bullism of Sir Alexander Croke. The King referred to, is evidently Robert, the eldest son of William the Conqueror. He passed the winter of 1096–97 at Salerno on his way to the Holy Land. He returned there in 1099 suffering under an obstinate fistula on his arm, arising from the wound of an arrow, supposed to be poisoned. Here he became attached to and married Sybilla, daughter of Geoffrey, Count of Conversano, in 1100. The next year (1101,) according to Fougens, the fistula still remaining open, the Faculty of Salerno gave, as their opinion, that the wound was poisoned, that it could be cured only by suction, and that whoever performed that operation would fall a victim to the poison. Sybilla would gladly have run the risk, but her husband refused. Watching her opportunity while he slept, she sucked the wound, he recovered, and she received no injury. This story is of course apocryphal, although it is certain that Robert recovered his health under the judicious care of the

Salernic physicians. At his request, they prepared a series of aphorisms, which may be divided into prophylactic and therapeutic. These constitute the *Regimen Sanitatis*, or *Flos Medicinæ*, the compilation of which is generally ascribed, after Haller and Eloy, to one John, of Milan. Pougens says positively that it is the production of this person, "alors Medecin fameux et professeur dans cette Faculté." No mention of this name, however, can be found in any document older than 1418, and Arnoldus de Villâ Novâ, who wrote his commentaries prior to 1363 makes no allusion to him. The physician John, who is mentioned as a pupil of Constantine, appears to have left Salerno prior to Robert's visit, so that the whole subject remains in doubt.

The text considered most correct is that given us by Arnoldus de Villâ Novâ, which contains 363 verses. Others have taken the liberty of adding aphorisms of their own to the original, so that its value to the antiquarian becomes nearly lost. Pougens asserts, on what authority I know not, that the original contained 1239 verses. This edition contains 474, many of which are the production of his countryman, Levacher. The character of these may be inferred from the following Homœopathic proposition, which makes M. Levacher, if he be its author, a fair subject for Father Mathew's benevolent labors.

\* Si nocturna tibi noceat potatio vini,  
Matutinâ horâ rebibas, et erit medicina.

This sentiment is too strong even for M. Pougens, who regards it as rather a *plaisanterie* than a piece of good advice. He nevertheless is loud in his praises of good wine, permits it to be taken after a full repast, and quotes Ovid as authority for using it to "drive away dull care" and procure moments of pleasure,—sentiments not consistent with the didactic dignity of the Schola Salerni.

Much of the *Regimen* relates to articles of food, condiments, esculent and medicinal herbs, bathing, cleanliness and blood-letting. I will quote but one aphorism, which is well worth remembering.

Si tibi deficient medici, medici tibi fiant  
Hæc tria, mens læta, requies, moderata diæta.

Some of the copies put the comma after *moderata*, which has puzzled the commentators considerably. The amended form of Lombard, who endeavored to render the poem classically accurate, reads as follows :

Si desint medici hos canones servare memento,  
Præstantis medici poterunt qui munere fungi.  
Mens sit læta, quies, medicis regula victus.

The burlesque French paraphrase of Martin is worthy of preservation. This treatise is dated 1649.

Trois medecins, non d' Arabie  
Ny de Grece, ny d' Italie,  
Te pourrent ayder au besoin,  
Sans les aller chercher fort loin,  
Ils sont meilleur que l' on ne pense,  
Et ne font au cun depence.

Le premier c' est la gaieté,  
C' est le fine fleur de Santé,  
C' est de notre vie la sosse  
Sans qui vaux mieux estre en la fossc.

La second, Repos moderé  
De corps, et d' esprit, assuré,  
Ferme, tranquille, invariable.

Le troisieme, c' est Courte Table,  
Antrement la Sobriété,  
C' est la Grand-mere de santé,  
Si nostre Grand-pere Hippocrate  
D' un faux oracle ne nous flatte.

Dr. Philemon Holland thus construes it :

When phisicke needs, let these thy doctors be,  
Good diet, quiet thoughts, heart mirthful, free.

William Withie (1575,) renders it after this fashion :

When phisicke hard is to be hadd,  
Three things may be in stede.  
The mind in noewise must be sadde,  
Meane reste, and diette muste thee feede.

The anonymous translator of the "Englishman's Doctor" is the happiest :

Use three physitians still, first Doctor *Quiet*,  
Next Doctor *Merry-man*, and Doctor *Dyct*.

This translation is cited by Burton (*Anat. Melanch.*) who speaks highly of these "three Salernitan doctors."

There is a deep wisdom in this humble couplet, and it seems little wonder that such extended commentaries should have written upon it. We first generally forget that disease is never a permanent state of the system. It is a *dis-order*, which tends either to a perfect restoration to health, a restoration with loss of parts or alteration of structure, or death. Most cases of sickness will end in a spontaneous restoration to health or the normal order. All that medicine does is to diminish the number of fatal cases, prevent accidents, relieve suffering, shorten the duration of disease, or, in incurable cases, to prolong life. To ascribe the fact of recovery, in every case, entirely to the medicine used, is a blind empirical error, out of which quacks have generally made their capital. *Post hoc, ergo propter hoc*, is a logic that will not hold

good unless there be shown *invariable* sequence. The man who, in the story, literally swallowed the *prescription*, under the impression that it was a cabalistic formula, could give an unhesitating testimony to its efficacy. But the spontaneous return to health will be retarded or accelerated by the circumstances of the individual, and among these, none are more important than the three mentioned in the aphorism; the meaning of which is, that in the absence of judicious medical care, a calm mind, rest and diet may be regarded as medicine, while they are, under all circumstances, powerful adjuvants to other treatment.

The *mens hilaris* cannot be too much insisted upon. Care, anxiety, grief, fear and remorse are frequent sources of disease, and always increase its intensity and danger when arising from other sources. Men do really die from the effects of the depressing passions in other places than in novels. The venerable man, from whom I received the first lessons in my profession, used to tell us, in his quiet way, that he could not say much, from his own experience, about broken hearts, but he had seen a good many cases of *broken stomach*. Under distress of mind the digestive powers fail, and, if long continued, there is laid the foundation of incurable dyspepsia. If it can so seriously affect the healthy, we may readily comprehend its influence upon the sick. Hence the sick-room should be made an abode of cheerfulness. Its gloom should be dissipated as far as possible. The conversation should be cheerful, yet placid and unexciting. I have no sympathy with the feeling that would hang the skull and cross-bones as a *memento-mori* before the eyes of every sick man. Let him contemplate them, when in health and full vigor of mind. I would put a vase of fresh flowers in their place, and by all means, lighten the heart of its load, that the body also may have rest. Hence the gravest philosophers have not disdained occasional recreation. We all know the story of Æsop and his bended bow. A more striking figure to me is that of Socrates, in Valerius Maximus, when “*interpositâ arundine cruribus suis, cum filiis ludens, ab Alcibiade risus est.*” We must not, however, confound cheerfulness with mirth. To be happy and to be merry are two different things. Pougens well observes that the truly happy man is he whom wisdom has raised above the influence equally of desires and fears. Hector Boethius, (*De Consol. Philos.*) has a similar thought,

Quid tantum miseri feros tyrannos  
Mirantur sine viribus furentis?  
Nec speres aliquid, nec extimescas:  
Examnaveris inpotentis iram.

In disease, this tranquil mind is a powerful promoter of recovery, while a perturbed, anxious and distressed condition as much retards a

cure. Let the sick man, therefore, abstract himself from all the cares that disturb his daily life. Let his friends and attendants carefully exclude every cause of excitement or perturbation. It rests with the physician to say what these are, and hence he is sometimes thrown into the delicate and difficult position of judging the character and amount of religious conversation admissible. I have seen the visit of an over-zealous and injudicious religious instructor heighten the wandering of fever into fierce maniacal excitement. On the other hand, nothing can be more soothing and pacifying to the suffering than the consolations of Christianity, properly presented. There is no balm that can so assuage the sting of disease and death as the hope of the Gospel. The best translation we could have of this medicinal *mens hilaris*, would be a soul filled with the peace that passeth all human understanding.

The *requies* of the Salernic Faculty is as often printed *requies moderata*; as by Pougens, who says the words are not to be translated “un doux repos” but rather “un doux exercice,” which is somewhat different. The difficulty of finding any meaning for the words is met by supposing that our aphorism is purely hygienic. But its structure evidently shows that it relates to therapeutic means, which may be resorted to when no physician can be found. I have no doubt that Sir Alexander Croke and others are correct in asserting that the adjective refers to the subsequent word, and not to *requies*. Rest is an agent of no little power, or rather I should say, it is a condition indispensable in most cases to the return to health, whether with or without medical aid.—Common sense would teach us that a broken limb will not knit while motion is allowed. The same is true, in some degree, of every diseased part. It must be allowed a season of repose, which is sometimes sufficient of itself to allow the *Vis Medicatrix Naturæ*, as it has been called, to complete the cure.

Last, though not least, we come to Dr. Dyet—*moderata diæta*.—There can be no doubt that the table, as asserted by the proverb, has slain more than the sword. By quantity and by variety of diet we daily offend against the laws of health. Hear what Burton has to say on this subject. “We account it a great glory for a man to have his table daily furnished with variety of meats: but hear the physician: he pulls thee by the ear as thou sittest, and telleth thee, that nothing can be more noxious to thy health than such variety and plenty. Temperance is a bridle of gold; and he, that can use it aright, is liker a god than a man: for, as it will transform a beast to a man again, so will it make a man a god!” He cites as a good example Berengarius,

Cui nor fuit unquam  
Ante sitim potus, nec cibus ante famem.

We can easily understand that an agent which can produce so much disease, is of importance in the treatment of disease when existing. It is indeed not easy to over-estimate the value of the *moderata diata* in medical practice. Celsus informs us, that by the Greeks, physic was divided into three parts, one of which (the *δαιτητική*), cured diseases by diet alone. He also informs us that "there is no one thing more relieves an indisposed person than a reasonable abstinence." (*Grievés' Transl.*, p. 79.) Our sick would be somewhat startled at a Celsian prescription to give the patient food every third day. Aretæus is particularly strong in his praise of diet: "Si recens malum sit, ad pristinum habitum recuperandum, alia medelâ non opus est." In the words of the School of Salerno:

Ex magnâ cœnâ stomacho fit maxima pœna,  
Ut sis nocte levis sit tibi cœna brevis.

The general repose and quiescence of all the organs, that are necessary to recovery, are not possible when the stomach is distended. Even in health, there is little sleep to a full stomach. Incubi and succubi are swallowed with our suppers, and, by the same means, we too often neutralize all the therapeutic effort of the physician. "Absolute diet," by which physicians mean absolute want of diet, "is a potent means of cure in many cases." The Arab physicians of our own time, as I am informed by my learned friend, Mr. G. R. Gliddon, cure patients of many obstinate skin diseases, by keeping them for sixty days on an allowance of dry biscuit and water and giving an alterative pisan. We can readily understand which is the active means of cure. The last medical novelty, received from Germany, (where they can manufacture systems of medicine as rapidly as they can Nürnberg dancing dolls,) is a practical application of the plan of diet in its fullest extent. Its inventor is one Schrott, a retired serjeant-major of the Austrian service, who has opened at Lindewiese in Silesia, what he calls a "universal-remedy-establishment on the hunger-and-thirst system." (*Graham's Grafenberg, London, 1844.*) His treatment consists mainly of rigorous diet, and if successful, will prove the truth of what no one has disputed since the days of Hippocrates,—that rest and diet are often enough to cure, unaided, very many diseases. I would merely add in conclusion, that by diet in this sense, we understand total abstinence from all alcoholic beverages.

The principal error of the aphorism, is that it confines the attention too exclusively to the three important points mentioned. A fourth should be added, *personal cleanliness*. The bath must not be forgotten.

There are too many persons, who, in the words of Pougens, “ne prennent pendant leur vie d’antre bain que celui du baptême.” For the benefit of such, it would have been well to insist upon the necessity of maintaining in health and disease a sound condition of the cutaneous surface.

I trust that these remarks may serve to give the unprofessional reader an idea of the character and value of the venerable *Flos Medicinæ*, which has not yet lost all its fragrance. It is by no means the only curiosity of medical literature. No science has had the copious bibliography possessed by our own, and among these treasures are many quite as curious and interesting as the *Regimen Sanitatis*.

H. S. P.

Philadelphia, May 20, 1847.

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COLLEGE REMINISCENCES.

BY AN OLD STAGER.

“The remembrance of youth is a sigh.” *Persian Poet.*

It was a cold December night, and I had just lit my last pipe, preparatory to a philosophical meditation before retiring to bed, when I was roused from my luxurious arm chair, by a quick succession of thundering raps at my front door. My servants had been long asleep, and I went down in study mantle and slippers. I opened the door and there stood a young man of about eight and twenty;—his beard was of four days growth,—his hat had the regular watch-house kink, bent in on one side,—his shirt collar had soil enough on it to plant turnip seed,—his eyes were inflamed and shone like polished brass buttons on a seedy blue coat,—the corners of his mouth were deeply stained with tobacco juice, and his whole appearance bespoke the poor, drivelling inebriate. As soon as he recognized me, in a sort of hilarious chuckle, he cried out, “Ha! old codger, I have got you at last!—how d’ye do, old fellow?” I shrunk back. “What, old chap, I see you don’t know me!—a little altered since you saw me last,—don’t you remember the poet of No. —, in old Nassau Hall? the Sophomore, who led his whole class in Greek; the Junior, who distanced all competitors in Mathematics; and the Senior, who walked over the course with most of the honors? don’t you remember the writer of the *Honoriams*—the orator of the Societies,—the favorite of the ladies,—the presiding *genius* of all convivial clubs,—the author of all the mischief—and the *bore* of the Faculty,—I say, old codger, don’t you remember —?” “Stop, Gordon,—I know you well enough, and am very sorry to see you in such

a plight." I took the poor inebriate in, and disposed of him as I could for the night, intending to learn his history in the morning.

It was near noon next day when I entered his room. He was still in bed, and as soon as he saw me, he wept convulsively. I tried to soothe his tortured feelings, but he refused to be comforted. I had not seen Gordon for twelve years,—I had lost sight of him amid the bustle of professional life, and only remembered him as the gay, talented, witty, mischievous collegian. He soon told me the story of his melancholy career. He had learned to drink intoxicating liquors in College, for he was the life of every social club, keeping the bacchanalians in a roar by his exhaustless fund of stories, inimitably told, and charming them by songs, sung in a voice of exquisite power and tone. Thus he continued after he left the Academic halls, degenerating every year,—losing credit, health and reputation, until he was compelled to leave his native place, a bankrupt in fortune and character. He arrived at our village, pennyless—he remembered that I had settled there, though we had had no communication since we parted on Commencement day, twelve years before. I compelled him to remain with me a fortnight, and supplied him with every thing he needed. I never saw a more grateful and more humbled man. From that day he renounced the use of alcoholic stimulants, and vowed before God and myself, that he would forever totally abstain. "Dr."—said he—"I swear by Him, who"—"No, Gordon, do not swear,"—I replied,—"there's no necessity of the solemnity of a positive oath,—you are a man of honor,—and will keep your word—resolve—promise—pledge yourself to me that you will abstain"—"Well then, here in the presence of the Heart Searcher and yourself"—and he looked reverently up to heaven—"I promise by His help never to"—he halted—"never to"—\* \* \* "never to taste intoxicating drinks." He covered his face with his hands and wept. My own eyes moistened and for a while we were silent. He wept, not for regret at parting with what he had fondly and almost fatally loved, but at the thought of what he might have been, had he not yielded to the voice of his accursed seducer. Two years have elapsed since this event, and Gordon is still a sober man. I procured him employment as a subordinate clerk at a Rail Road depot,—I could get him no higher birth, for people have little confidence in a reformed inebriate;—his talents for engineering were soon discovered, for he was a fine Mathematician;—he soon rose in office, and his advance has been so rapid and his services are so highly appreciated, that I would not be surprised to see him President of the Company in two years more.

Alas! how many noble young men lay the foundation of their ruin



at College! I could tell many a tale of woe, and probably shall, in the course of these papers, of blasted health, of broken hearts, of lost reputation, of crippled fortune and of premature death, all occasioned by excesses during College life. All are not disenthralled from the iron bondage, as was poor Gordon, but many continue under the dominion of the tyrant foe, and their sun goes down while it is yet day.

Since I have become a man, for I was a boy at College, and have associated as a man with my former Professors, I have been surprised at the accuracy of their information about almost every College trick and the chief actors in almost every unlawful College adventure. I presumed, as all collegians do, that the Faculty were rather a stupid set in discovering the authors and promoters of mischief,—that they had no suspicion of any particular man, and that among a crowd, it was easy to escape suspicion. But in calling to their recollection this prank and that disturbance—this cracker explosion and that instance of key-hole closing, I was amazed at their knowledge of facts and persons connected with the whole transaction. So it is now;—let young men know that no hen roost is robbed—no iron ball rolled in the passage—no out-house fired—no midnight yell screeched—no acts of rowdyism in town perpetrated,—of which the authors are not almost certainly known. Young men flatter themselves that no body knows or suspects them:—herein they are mistaken. But how are they known? Not always from observation, but from a perfect acquaintance with the general character and temperament of every student,—from the conduct of the *generally* suspected immediately after the occurrence of a fracas, for few young men can wash the guilt stains from their faces, and a close observer of human nature can almost with unerring certainty read the fact plainly written on the countenance of a scamp, especially the morning after an adventure. The more he tries to conceal it, the more plainly it is revealed, and I presume there are few Faculties who cannot go over the College roll, and say to the authors and generally too, the abettors of almost every case of mischief, *Thou art the man*. Young men, unsuspecting themselves, deem others so, and having no knowledge of mankind, presume that others are as ignorant as they. They little imagine the facilities which Faculties have of detecting defaulters, and the system of police pursued in a well regulated institution. It is true, all known offenders are not brought to justice, because all are not discovered in the act of transgression, but they are marked men, and sooner or later, they are caught in the trap which their own folly has laid.

## DESCRIPTION OF A REMARKABLE AURORAL ARCH.

BY DANIEL KIRKWOOD.

During the evening of the 7th of April, 1847, the northern sky was illuminated by a brilliant aurora; the streamers sometimes extending at least sixty degrees above the horizon. These disappeared, however, about 9 o'clock, and shortly after, the auroral light itself partially subsided. This was followed, about 10 o'clock, by an extraordinary and magnificent phenomenon—the formation of a white, luminous arch, having a striking resemblance to the tail of a comet, and spanning the heavens from a point about  $20^{\circ}$  south of east, to another directly opposite, or  $20^{\circ}$  north of west. When first observed, its summit was a few degrees south of the zenith, which position it preserved with the exception, that shortly before its disappearance, which occurred about 11 o'clock, it gradually moved somewhat further southward.—The arch was generally about four or five degrees in breadth, and was observed to be agitated by a rapid motion from the east toward the west.

As this appearance was undoubtedly of the same nature as the ordinary aurora borealis, it furnishes an opportunity of determining the important and much disputed question, whether that meteor is *within* or *beyond* the limits of the atmosphere. On this subject, Brande's Encyclopædia has the following statements :

“There is great difficulty in determining the exact height of the aurora borealis above the earth, and accordingly the opinions given on this subject by different observers are widely discordant. Mairan supposed the mean height to be 175 French leagues. Bergman says 460 miles, and Euler several thousand miles. From the comparison of a number of observations of an aurora that appeared in March, 1826, made at different places in the north of England and south of Scotland, Dr. Dalton, in a paper presented to the Royal Society, computed its height to be about 100 miles. But a calculation of this sort, in which it is of necessity supposed that the meteor is seen in exactly the same place by the different observers, is subject to very great uncertainty. The observations of Dr. Richardson, Franklin, Hood, Parry, and others, seem to prove that the place of the aurora is far within the limits of the atmosphere, and scarcely above the region of the clouds; in fact, as the diurnal rotation of the earth produces no change in its apparent position, it must necessarily partake of that motion, and consequently be regarded as an atmospherical phenomenon.”

In the present instance, it is evident that the difficulty here referred to does not exist, and that a few observations made at points considera-

bly distant from the line of direction of the luminous arch will constitute data for ascertaining its elevation. The observations which I have been able to collect, although not of sufficient accuracy to determine the exact height, unquestionably establish the fact that *it was beyond the region of the atmosphere.*

The papers of New York, Philadelphia, Baltimore, Washington, Pittsburg, Chambersburg and Carlisle, all describe it as passing either through or near the zenith. Professor LOCKE, of Cincinnati, has given in the Pittsburg Gazette, a particular description of the appearance as witnessed by himself on the Ohio River, between 10 and 29 miles below Pittsburg. He states distinctly that it passed "a little south of zenith." In reference to his description, a Philadelphia paper says "The appearances were exactly the same as observed here and in other cities." A correspondent of the United States Gazette, writing from Dennisville, Cape May County, New Jersey, describes it as passing, when first observed at that place, "directly through the zenith." He also mentions the fact noticed at other places, that a short time before the arch began to fade, its summit swayed several degrees to the southward.

According to the preceding data, the elevation of the luminous band or arch was certainly more than 50, and probably exceeded 100 miles. This fact may, we think, be regarded as favoring the ingenious hypothesis suggested by M. Poisson in order to account for the spontaneous combustion of aerolites, above the limits usually assigned to the atmosphere: viz., that the electric fluid, in its neutral state, forms a kind of atmosphere, extending far beyond that of air; which is subject to the attraction of the earth, although physically imponderable; and which consequently follows our globe in its motions.\*

Since writing the above, I have learned from the London Athenæum of January 2nd, 1847, that a similar phenomenon was observed in Canada, on the 21st of September, 1846, and also in England on the same night. It is worthy of remark, that during that evening also the common aurora borealis was very brilliant. Mr. Langton, of Fenclon, Upper Canada, who has given a very interesting description of the arch as seen at that place, gives its general direction as almost exactly east and west, and its average breadth about 4°. He states likewise that the light appeared to roll from east to west in irregular cloudy waves. "The beauty and singularity of the arch," he says in concluding his description, "induced me to observe its different features minutely at the time; and the coincidence of a similar appearance, in England, on the same night, has led me to communicate the particulars;

\* See Note 33, p. 113, of the English Translation of Humboldt's *Cosmos*: Published by the Harpers, New York.

more especially as, from the large portion of the globe, over which the electric action appears to have extended, it may probably have some connection with the tremendous hurricane which the Great Western encountered that night on the Atlantic."

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GREAT DISCOVERIES.

The labors of the illustrious Faltenschwanem in the department of Classic Antiquity have not been in vain. His researches into manners have been particularly rich in their results. It is known to all profound scholars—and of course to all *our* respected readers, that Prof. F. has proposed to himself, as a main object, the tracing of all existing customs to their primitive origin. Taking as he does, in a strictly literal sense, the declaration, that "there is nothing new under the sun," he has endeavored to show that even the most trivial peculiarities of social life have an origin, which dates back of the memory of man; and his most untiring efforts have been directed to the discovery of some great primitive type of usages, which will bear the same relation to manners that the Sanscrit is supposed to bear to languages. The public are awaiting the appearance of his magnificent work with impatience. We are informed by the learned author, that an unavoidable delay has taken place, owing to the slowness with which the elaborate engravings are executed, which form the illustration of one of the most original and profound chapters "on the rudimental traces of the coat tail in the time of Hesiod, with a comparative sketch of its rise in Antiquity, its meridian in the last century, and its present decline." We understand from a confidential friend of the author, that in this chapter the brilliant paradox is started, and a powerful attempt made to sustain it, that Homer himself was provided with what is now known as the box-coat, furnished with enormous pockets, designed for the reception of the supplementary cold victuals, which he might receive for his singing and his performances on the harp, which Prof. F. shows to be the classic father of the *bango* of our land.

We have our information from the lips of the author himself, that he has traced the modern practice of applying the thumb to the nose and with the fingers grinding an ideal coffee-mill. He says that it is based on the ancient gesture of derision, whose memory is preserved in the line of Persius (1. 58:) "*A tergo quem nulla cicoia pinsit*"—whom no stork pecks at from behind—which consisted in directing the bended forefinger toward the object of contempt, and moving it in imitation of a stork pecking with his beak.

## FLATTERY.

When some doughty champion has been fairly levelled in controversy, how often do friends gather around him giving him full assurance that he has gained the victory. I was taking my morning walk in the Eastern part of the city. A little "Dutch" boy coming up the cellar stairs tumbled side-ways against the wall. Two streams of tears ran down his cheeks. He "roared amain." Up rushes the anxious father. "Ach, little boy, shust see here how he's smashed the bricks mit his head." The child looked and seemed to see an enormous dinge where his head had come in conflict with the bricks. Delighted with the idea that he had inflicted a greater injury than he had received, he gathered up his dirty apron and wiping the tears from the channels which they had worn in his unwashed face, piped merrily, like a bullfinch in an ecstasy. Self-confidence sprang from the bosom of his grief, and the compliment, which gave preternatural hardness to his head, softened his heart and nullified his pain.

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NAVAL APPOINTMENTS.—At an examination of candidates for the post of Assistant Surgeon in the Navy, held at Philadelphia in April last, nearly two hundred presented themselves for examination, of whom, the following were found qualified and assigned to rank as Assistant Surgeons in the following order, viz :

1. W. T. Babb, of Pa., a graduate of the *Medical Department of Pennsylvania College*.
2. R. J. Farquharson, of La., a graduate of the University of Pennsylvania.
3. A. Robinson, jr., of Va., a graduate of the University of Maryland.
4. E. R. Squibb, of Pa., a graduate of the Jefferson College.
5. S. G. White, of Ga., a graduate of the Jefferson College.
6. B. R. Mitchell, of Mo., a graduate of the University of Penn.
7. J. S. Gilliam, of Va., a graduate of the University of Penn.

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TO CORRESPONDENTS.—Several interesting articles, intended for this number, but crowded out for want of space, will appear in the next.—The name of the author must always accompany the communication to insure its admission into the Journal.

## COLLEGE RECORD.

Mr. Editor: As the *Journal* professes to give a record of the events connected with the College, it may not be amiss to furnish your readers with some account of the College Temperance Society. The idea of introducing the subject was suggested by a late interesting meeting of the Association, held in the College Chapel on the 29th ult., at which appropriate addresses were delivered by Messrs. *Raby* and *Essick*, and *Prof. Baugher*. The Society was originally organized in the summer of 1834, and was in successful operation for several years; but in consequence of the strong hold, which Temperance principles obtained in the Institution, and nearly all the members becoming pledged to *total abstinence*, the Society was permitted to lose its organization.

Recently a very successful effort was made, to revive the Association, and there is every reason to believe that the interest, which has been excited, will be productive of good. A large number of signatures to the Constitution has already been secured, and the hope is indulged that before long, every student of the College will be enlisted under the banner of Total Abstinence.

The officers of the organization for the current year are:—President—*Professor Stoecker*. Vice Presidents.—*Messrs. A. C. Wedckind* and *A. Essick*. Recording Secretary.—*Mr. J. K. Plitt*. Corresponding Secretary.—*Mr. J. H. Heck*. Censors.—*Messrs. P. Baby* and *G. C. Maund*.


The speakers selected to address the Association at its next meeting are *Messrs. W. M. Baum*, *R. A. Fink* and *J. A. Bradshawe*.

The cause is certainly a worthy one, the end it contemplates most laudable, and the Society may be instrumental in preserving many a noble youth, for whose feet, perhaps, a snare is spread, from a dishonored life and a hopeless grave. So great is the misery which the vice of intemperance infuses into the cup of domestic happiness, so often does it cause a parent's heart to bleed over the son of his love, a mother to shed tears, the most bitter, over a child early ruined—so blighting is its influence, so fatal its power, so sad its consequences, that the most earnest efforts should be put forth to arrest the entrance of a young man into the temple of Bacchus, before the coils of the dragon are twisted around him, and the poison of its fangs is rankling in his veins.

PENNSYLVANIA COLLEGE.—The Summer Session of the Institution opened on the 20th of May. The students of the last term have generally returned, the accession of new ones is larger than was expected, and as we have been in operation scarcely a fortnight, there is reason to believe that the number will be considerably increased.

*Receipts during May.*

	\$		Vols.	
Rev. Dr. J. C. Baker, Lancaster, Pa.	2	00	2 & 3	
Rev. N. H. Cornell, Haverford, Pa.	1	00	-	3
Rev. J. Kohler, Williamsport, Pa.	2	00	-	1 & 2
Rev. A. Weiting, Middletown, Pa.	1	00	-	3
Rev. Levi Williams,	1	00	-	3
Rev. S. Oswald, York, Pa.	1	00	-	3
T. D. James, Esq. Philadelphia, Pa.	1	00	-	3
M. Frederick,	1	00	-	3
N. Richards Mosely,	1	00	-	3
Dr. W. H. Lochman, Harrisburg, Pa.	1	00	-	3
Dr. Adam Carl, Greencastle, Pa.	2	00	-	2 & 3
P. G. Sauerwein, Baltimore, Md.	2	00	-	2 & 3
F. K. Heisley,	2	00	-	1 & 2
Mrs. P. A. M. B. Eyster, Jefferson, Md.	1	00	-	3
H. C. Eckert, Littlestown, Pa.	1	00	-	3
W. A. Huber, Lebanon Co., Pa.	1	00	-	3
R. A. Fink, Gettysburg, Pa.	1	00	-	3
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G. Sprecher,	1	00	-	3
W. H. Roedel,	1	00	-	3
A. C. Wedekind,	1	00	-	3

 The portrait of President Krauth, engraved by Sartain, for the Linnæan Association, is now ready for delivery, and can be procured by application to Messrs. Daniels and Smith, corner of Arch and Fourth streets, Philadelphia, or S. H. Buchler, Gettysburg, Pa.

# Pennsylvania College, Gettysburg, Pa.

## FACULTY AND INSTRUCTORS.

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Rev. H. L. BAUGHER, A. M.—*Prof. of Greek Language, Rhetoric and Oratory.*  
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JOHN G. MORRIS, D. D.—*Lecturer on Zoology.*  
ABRAHAM ESSICK.—*Tutor.*  
JOHN K. PLITT.—*Tutor.*

Pennsylvania College has now been chartered about sixteen years. During this time its progress has been such as to gratify the most sanguine expectations of its friends. The Trustees have much encouragement to hope for its continued prosperity and to expect future favor. The proximity of Gettysburg to Baltimore and Philadelphia, the healthiness of the place, the morality of its inhabitants, the cheapness of living recommend the College to the patronage of parents. The course of studies is as extensive and substantial as that of any institution in the country. The *Preparatory Department* provides for instruction in all the branches of a thorough English, business education, in addition to the elements of the Mathematics and Classical Literature.

The *College Course* is arranged in the four classes usual in the Institutions of this country.

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The annual expenses are—for board, tuition and room-rent, during the winter session, \$66 62½; for the summer session, \$45 12½. Washing, \$10 00; and Wood, \$3 00. Total expense, \$124 75. Boarding can be obtained in clubs at \$1 00 per week.

There are two vacations in the year, commencing on the third Thursdays of April and September, each of five weeks continuance.

The Annual Commencement occurs at the close of the Summer Session, the third Thursday of September.

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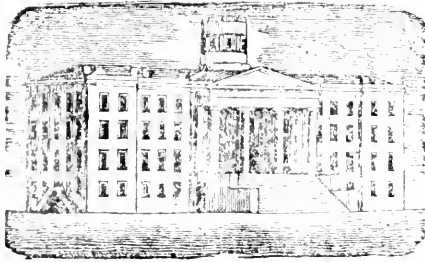


THE

# LITERARY RECORD AND JOURNAL

Of the German Association of Pennsylvania College.

JULY, 1847.



CONDUCTED

By a Committee of the Association.

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THE LITERARY

# RECORD AND JOURNAL

OF THE LINNÆAN ASSOCIATION OF PENNSYLVANIA COLLEGE.

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VOL. III.

JULY, 1847.

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PHILOSOPHY OF STORMS. NO. VI.

BY PROF. W. L. ATLEE, M. D., PHILADELPHIA, PA.

The immense force of the steam-power, generated by the condensation of vapor into cloud, must be apparent where, for every cubic foot of water condensed from vapor in a gaseous state, the air itself, which receives the latent caloric of the vapor, is nearly 7000 cubic feet larger in bulk, than it would have been, without having received this latent caloric. This expansion of the air by means of the heat which previously existed in the vapor is the result of calculations, based upon established principles of chemistry, which never have been contradicted. The following are the data :—

1st. The specific heat of atmospheric air is  $0.2669$ .

2d. The sensible and latent heat contained in vapor is 1212 degrees : according to Prof. Johnson 1242 degrees. \*

3d. Air is expanded 1-460 its bulk at zero, for every degree of Fahrenheit to which it may be heated.

For example : a pound of steam, at the temperature of  $212^{\circ}$ , contains  $1000^{\circ}$  of caloric of elasticity ; and as the sum of the latent and sensible caloric of steam is the same at all temperatures, it follows, that a pound of steam being condensed in 1180 lbs. of water at  $32^{\circ}$ , would heat this water up one degree ; and, as the specific caloric of air is only  $0.2669$ , if a pound of vapor should be condensed in 1180 pounds of air, it would heat that air nearly 4 degrees, or, which is the same thing, it would heat 100 pounds of air about 45 degrees. And in all these cases it would expand the air about 8,000 times the bulk of water generated ; that is, 8,000 cubic feet for every cubic foot of water formed out of the condensed vapor. And as it requires about 1,300 cubic feet of vapor, at the ordinary temperatures of the atmosphere, to make one cubic foot of water, if this quantity be subtracted from 8,000, it will

leave 6,700 cubic feet of actual expansion of the air in the cloud, for every cubic foot of water generated there by condensed vapor.

If, therefore, the air on the outside of a cloud cools one degree for every hundred yards in height, while the air in the cloud cools only half that quantity for every hundred yards; and if every cubic foot of water, condensed from the ascending vapor, expands the air nearly 7000 cubic feet, taken in connexion, too, with the fact that the vapor in the cloud has a specific gravity only 5-8 lbs. that of the air outside, it forcibly explains, on philosophical principles, the cause of the up-moving column being specifically lighter than the surrounding air; the sinking of the barometer, under the base of the cloud; the immense power and velocity acquired by the condensation of vapor; and the self-sustaining power of a storm once commenced. This last circumstance, in my opinion, is a feature of great merit in Professor Espy's theory.

*This great expansion of the air in the cloud will cause it to spread outwards above in an annulus all around the ascending column.* The barometer will, therefore, not only fall below the mean under the centre of the ascending column, but *it will rise above the mean under this annulus*, outside of the ascending column. And the increased pressure of this annulus will cause the air to rush in towards the centre with greater velocity than it did before. In consequence of the pressure of the atmosphere being greater in the annulus or border of the storm than it is in the centre, the air must descend in the annulus and ascend in the centre of the storm. So long, therefore, as the circumstances are favorable, the process of nimbification must be continued. These favorable circumstances are an elevated dew-point, hot air below, and a slow and properly directed current in the upper regions of the atmosphere. Whenever the dew-point is high, it indicates a large quantity of vapor in the atmosphere, and consequently the existence of a great steam power in the air below, and this, also, diminishes to a considerable extent the specific gravity of that particular body of air. These conditions, even unaided by increased temperature, must create an ascending column; and should the upper current of the atmosphere, at this time, be moving so slowly and in such a direction as to permit this up-moving column to penetrate it perpendicularly, or nearly so, then the formation of cloud must continue to go on, particularly if aided by an elevated temperature below.

Many causes, however, prevent up-moving columns from increasing until rain is the consequence: 1. When the complement of the dew-point is very great— $20^{\circ}$  or more—clouds can scarcely form; for as the column must rise twenty hundred yards before cloud can be formed, it is likely either to be dispersed or it acquires the equilibrium of the sur-

rounding air. Clouds may form even under such circumstances, but they are the result of rising masses of air having become detached from up-moving columns underneath. If these clouds be closely observed they will be seen to dissolve soon after they form. 2. When the ground is colder during the day than the air in contact with it, ascending columns cannot exist, and of course cumuli cannot be formed. This we sometimes see after a period of cold weather, when a warm breeze sets in from the south, saturated with moisture to such a degree, that a portion of it is condensed upon the cold bodies, with which it comes in contact. 3. When there has been a great rain just before, up-moving columns will fail in producing the rain cloud. The upper air has still within it a large quantity of caloric, resulting from the previous condensation of the vapor, and therefore, the ascending columns, for want of buoyancy, will not continue their motion in it far enough to produce rain. 4. When, as is sometimes the case, the air at some distance above the surface of the earth, and below the base of the cloud, is very dry, rain will not be produced; because much of this air goes in below the base of the cloud and up with the ascending column, and consequently large portions of the air in the cloud may thus not be saturated sufficiently with vapor to produce rain. 5. When there are cross currents of air strong enough to break into an ascending column, clouds cannot form of any very great size, and rain cannot occur.

The upper current of the atmosphere, although it does not contribute to the formation of cloud, has much to do with its integrity and continuance, after it has been formed. In order to insure the formation of rain, it will be necessary for the ascending column of air to go up sufficiently high, not only to deposit its vapor, but also high enough for a large quantity of this condensed vapor to accumulate. For this purpose a favorable condition of the upper current is necessary. If it should be too strong, or its direction contrary to that of the current below, it will cut off the tops of these column clouds, no matter how rapidly they may be generated. Whenever the tops of these clouds are swept off by the upper current of air, the heavens become studded with them in the form of *cirro-cumuli*, which are a sure indication, that it will not rain on that day. The reason is, that although enough vapor may be condensed, which if accumulated in the ascending column, would ultimately descend in rain, yet as fast as a cloud is generated, its top is broken off and carried, beyond the storm-power, into regions, where it is reconverted into gaseous vapor, instead of falling in the form of rain.— If, however, the upper current is in the same direction, and of similar velocity with the current below, then the up-moving column of air is

not arrested or broken off in its course, and the vapor which it deposits is permitted to collect until its weight will cause it to descend in rain. Thus we find that even though the dew-point may be high, and all other circumstances favorable to the formation of cloud, yet the want of correspondence in the direction and velocity of the several strata of air must strongly influence the production of rain.

Besides the controlling influence exercised over the forming cloud by the upper current of the atmosphere, it also acts as the great pilot in directing the course of storms. Impinging on the upper portion of a storm cloud, it causes it to lean in the direction towards which the current blows, and carrying this part of the cloud on before it, without destroying its continuity with the lower portion, it thus leads the storm over a great extent of country. Were it not for this wise provision the storm would be comparatively stationary, and confer its benefits upon narrow geographical limits. How admirable is this beautiful contrivance of nature to cause the storm to move along over the surface of the earth, and shower down its blessings upon the just and the unjust!

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#### THE WORLD AT THE ADVENT.

To obtain clear ideas of any portion of the era in which the incarnation of the Divine Word opened a new dispensation, we must have at least some general acquaintance with the colossal power which at that time enthralled the greater portion of the world.

The Roman Empire had risen from a feeble origin. The blood of its founders, whether, in fable or in truth, they had sucked the strange dam assigned them, coursed madly as that of wolves. Romulus gave an impress to the national character which ages could not efface. His success in a social condition, in which valor was its only pathway, as well as the poetic legends, proves that he was indomitably fierce. His own character was transmitted fresh and vital as original sin, in the strictest creed, to his nation. Rome traced with bloody finger her name in the dust of every land. Often beaten, but never conquered, catching new spirit from adversity, and under despair itself writhing into fresh vigor her defeats, not less than her victories, were pledges of her ultimate triumph.

The Roman Empire at last became the world—and its monarch, king of the world. The throbbing heart, which tingled and thrilled and quickened the nations, was Augustus. He said indeed "The Senate and the citizens are the guides of the Republic. Their governors and presidents, sent by their will and subject to it, rule every province though it

be at the world's end. If vanquished nations are still ruled by their kings and laws, it is by the sufferance of the people. These were their conquests, and these are the objects of their control." These fair words were designed not to convey but to conceal the truth. The semblance and the semblance only of freedom remained with the Senate and citizens. One man was Rome—one man was the world. His titles were High Priest, Censor, Tribune, Proconsul, Emperor, and in a Roman's eyes scarcely higher than the last, God. He had all titles of power, and no title was a sinecure. He could afford to tell the people they were free.

A splendor, not entirely his due, has been thrown around Augustus. His age was pre-eminently one of Literature and the Arts. The sweet song of Virgil, the polished wit of Horace, the elevated taste and munificence of Mecaenas, have not been without their effect, in ennobling the Emperor under whose reign and in whose court they flourished. Augustus himself was a judicious critic and an excellent writer. So attentive was he to accuracy of expression, that even in discussing a subject of importance with his own wife, he would write down every word and read it to her. His encouragement of Literature and the Fine Arts was munificent. He looked for men who presented in the greatness of their intellect—God's patent of nobility. Mecaenas, his favorite, has left a name forever equivalent to patron of the Arts. The witty, pithy, and shrewd Horace comes, to hear from his condescending Emperor reproaches for writing such little volumes, which Augustus declares proceeds from his fear, lest his books should be bigger than himself, for Horace, like all jolly fellows, past the memory of man, was short, fat and round. Horace was troubled with a flowing from the eyes. Virgil had the asthma. The monarch sitting down pleasantly between them, now turning to Horace with his swimming eyes, and Virgil with his wheezing breath, would rally them by saying "that he sat between sighs and tears."

In the character of Augustus, we may doubtless find one reason for the general diffusion of literature, the noblest literature, for it includes the Greek, which the world has ever seen. The arts in their perfection with the most subtle and comprehensive philosophy, found their way into lands where they had not been before.

But with all these splendid and deceptive considerations we must not forget that the power of Augustus was based upon murder. Cicero was killed by one of the Triumvirate, of which Augustus was a member. Among his successful soldiers were divided the finest lands of Italy. Three hundred senators of Perugia, after its surrender, were slaughtered as sac-

rifices to the shades of Cæsar. He divorced his own wife to marry the wife of another, from whom she was taken by force. The winning graces of his manner and address were but accessories to his scheme of making himself supreme in the Roman empire. He gave a splendid burial to Anthony and Cleopatra, though it was to escape from his hands they had slain themselves. As though this were not enough to satisfy his restless apprehensions, he murdered the two sons of Cleopatra, one of whom she had by Anthony, the other by Cæsar. His efforts were successful. With a show of submission to the Senate, he stepped into the throne. The splendor of royalty hides all defects. A prince who was at once cruel and sensual, had altars erected to him during his life, received the title of Father of his Country after his death, and has been handed down to posterity with a character, in which every virtue is blended with every grace.

Yet we do not find fault with Augustus because he had a power as absolute in degree as it was wide in extent. Who would not reign if he could? Nor do we blame the Emperor for all the evils, which unquestionably existed under his government. In a kingdom so unbounded in extent, no principles could be perfectly exhibited, and no form invariably carried out. But when extensive provinces, many languages, conflicting claims pressed by stupidity, avarice and cruelty, concur, offences inevitably arise. It is enough in excusing Augustus and the Roman empire, to be satisfied that mild and humane laws were provided, which exhibited equitable constitutional principles. Such doubtless they meant them to be, and such, perhaps, we should allow they succeeded in the main in making them. Yet the truth cannot be hidden, that scarcely louder cries were ever wrung by despotism from any people. It was a proof that good governments do not necessarily govern well. Mild when his own ambition was not concerned, and devoted as he was to the humanizing arts, had the body of Augustus been as ubiquitous as his mind, or his arm able to keep company with his heart, his would have been a people as little misruled and as happy as is possible under an uncontrolled despotism. But his body had not as many atoms, as the Empire had families, and the bounds of his domains no created arms could encompass. The ripeness of the fruit is the precursor of its rotting. In many constitutions, too, the secret decay of some vital power is not only unattended by aught external that seems to mark its decline, but that very disease may give a more brilliant hue to the cheek. The face whose flush is deepest and whose eye is brightest, is that of her whose frame shall soon grow wan, until she draws the last faint breath, whilst treacherous Consumption, who laid the gem on



her eye and the rose bud on her cheek, whispers to death, "These were our tokens, strike here." The body politic of the Empire seemed however to exhibit just the reverse. It seemed, that though the extremities might be diseased, the centre of life was sound.

Rome rioted in splendor. Augustus found it brick, and left it marble. The year was a long holiday—but ruin was written on the haggard brow of every province as plain as Death could write it. The heart seemed sound, and no irregularity of the pulse could be detected, but the purple was beneath the nails, and the eyes were glassy. Many of the magistrates were authorized plunderers; much that was called justice was legalized murder. The tax-gatherers or publicans to whom the revenues had been farmed, extorted to the last degree, they sheared the sheep to the quick, and took blood with the fleece.

Yet in this huge and overgrown empire, the lust of possession was not satisfied. The daughters of "the horse-leach" were the tutelaries of Rome. The cry of a people crushed by what they had already, was, Give! Give! New lands must be subdued. To do this, new forces must be raised and the provinces drained of wealth and men. These seeing that the choice was between oppression and death at the hands of the Romans, or at the hands of the nations against whom they were led by their conquerors, rebelled again and again. Insurrections were daily things, and the rumor of war had not died in one direction, before it was renewed in another. The Romans had almost learned to regard defeat as impossible, except by gross mismanagement. A Roman army never dreamed of meeting those whom they could not beat, if they did their best. A defeat in modern times is not necessarily disgraceful to the general, nor distracting to the monarch. But when Varus was beaten in a battle with the Germans, in which he lost three legions, in his anguish he slew himself, and Augustus, when the news came, let his hair and beard grow, and, as though in utter despair, often cried out, "O Varus, give me back my legions."

It is during unquiet times that great revolutions arise. There was an excitability of the nations, arising from this state of things, well suited to the introduction of another grand cycle of divine providence.—The march of political events demanded all the care of the wise and great of the world. Their friendship would have embarrassed and their enmity retarded the progress of a sublime faith, which, in its lowly wanderings, began its pilgrimage among the illiterate and poor. They followed the track of armies, or the plans of the mighty. They knew not that the angels, who watch the world, hung around the foot-prints of a despised Jew, who, when their names and their empire had passed

away, should, from the throne of his glory, at one glance of his eye kindle into radiance worlds more in number than the men, whom, in their wildest battle-dreams they had seen beneath their thrall. Glutted with spoils, satiated with pomp, writhing under tyranny refined yet galling, a system of self-denial and of universal equality, like Christianity, would at least be likely to secure from them a patient hearing, and sometimes a hearty response. It is sometimes best to talk to a man of the virtues of moderation, when he has eaten himself into a nausea on roast-pig—or of temperance, when his head is yet aching from his last night's revelry.

In this wide dominion of one nation, whose power was embodied in one man, were eminent advantages for the wide diffusion of new opinions. Nations were formed into a sort of confederacy. Their common centre, the imperial city, gave them unity. This tended to soften gradually their differences and erase their distinctions. It was as though the great God in his Providence had reversed his work at Babel, and had descended to harmonize the many tongues; as though He had said "their language is confounded and they understand not one another's speech:" "Go to, let us go down that the whole earth may be one, and have one language." Greek became the medium of universal communication among educated men, and to a great extent among the people. He, who multiplied the tongues of his disciples, was lessening those of the nations.

Remote countries were brought together. The terror of the Roman arms was the safe-guard of the traveller: "I am a Roman citizen" was the dread announcement, at which savage bands grew pale in the presence of a single and unarmed man. This free access, with the union and consolidation which it occasioned, was itself a proof that God designed great changes. Periods of great national concentration always precede important revolutions. There was this compacting of the moral world, at the era of the Reformation. Mind had been thrown into great masses, and cultivated intellect, through the medium of printing, held converse with its fellows. The density given the world in our own day by the increased facility of communication, has been at once a cause and evidence of its revolutionary character. The road-makers, the boat-builders, the printers, and the telegraphers, are the original movers in great, civil and moral convulsions.

In the mine of one nation the nitre has been crystalizing. Sulphur has been swimming on the volcanic bosom of another, the elements are brought together, and mingled by the hand never seen, but doing all.—Some stupendous event inflames them, and when the shower of torn

fragments cast heaven-high has fallen, and the smoke has rolled away—there lie the huge fragments ready for the thoughtful minds and earnest hands of the builders to reconstruct and beautify beneath the guidance of HIM Who sitteth upon the Throne, and saith “Behold I make all things new.”

It was in exact keeping with the economy of the divine providence to introduce the gospel at just such a period. It is making the most of selected agencies. It is human wisdom, in the trite proverb, to kill two birds with one stone. Too homely in its associations to be applied to Deity, this sentence illustrates a sublime verity, which tells the secret of a thousand mysteries. God is not wasteful of his power. He makes such a disposition of cause and effect, and throws mind into such relations with the material world that every impulse produces the greatest possible amount of influence. All, that falls or rises at his bidding, sustains the highest place it can bear in the grand and universal destiny.

There was perfect communication both by water and land within the territorial limits, facilitating the journeys and the preaching of the bearers of the Word. On water little boats glided along every shore. The goose-bosomed vessels with prows ornamented by beautiful or grotesque carvings and mouldings in metal, of beasts and men, and implements of war, mingled in every port. Ships with two prows, sailed like politicians, with the same ease backwards or forwards. The iron anchor, with two flukes, had superseded the huge stones and baskets of sand employed in the heroic age. Nimble sailors ran to the cup above the yard of the vessel to obtain a distant view—and the lead was heard plunging in the water as now. The ships with three banks of oars went with the rapidity of a steamboat, and the powerful navy prevented piracy on the high seas. On land magnificent roads, whose compacted strata, after the lapse of more than a thousand years, are left unbroken, traversed the country in every direction. The little cow-path, which ran round Rome or led to the neighboring villages, gave way to those stupendous structures, to take part in whose formation conferred a title of honor which Consuls and Emperors were proud to add to their names, and which was thought worthy of inscription on the tomb-stone. They ran straight as an arrow through morasses, down ravines, up mountain sides, and over rivers. These huge trunks cut by thousands of roads, each less models of the great national arteries, connected the whole Empire with Rome, and brought the ends of the world together.

In the midst of the local wars, to which we have referred, the general condition of the Empire was one of peace. There was enough

war to employ the restless and ambitious, but the mass of the people were left in a tranquility highly favorable to the propagation of the truth. Had there been less war, the new Religion would have suffered more from the interference of those in power. Had there been much more a theme might have been furnished to the popular mind, too absorbing to render easy the introduction of any other. The peace was considered a remarkable one. The very tradition, though a false one, that the temple of Janus Quirinus, closed only in times of entire peace, was shut at the Redeemer's Birth, is a proof of the general impression of its peaceful character. Augustus indeed had closed its gates about ten years before Christ, but they were opened the following year. It is said they had been closed but once before.

We have fewer historical facts in regard to nations that lay without the Roman Empire—a loss not so great as it sounds, for that Empire embraced almost all that possessed interest. The Eastern nations were crushed by tyranny, but indolent and voluptuous, with softened bodies and enervated minds, sufferance was to them more endurable than labor. The slavery, by which they could purchase ease, was more congenial than the liberty, whose price is perpetual watchfulness and unceasing toil.

The nations of the North were comparatively free. Their nerves were strung by the bracing air of a colder clime. Their mode of living gave them more vigorous constitutions, and their religions fostered a fierceness, which was sometimes a most effectual protection against subjugation. The nations under the yoke were almost all the inhabitants of the softer climates. In the colder countries, says Seneca, lying to the North, their minds are savage and severe, like their own clime.

*To be continued.*

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#### GLACIERS.

*Verrons-nous un glacier au jourd'hui?* “Shall we see a glacier to-day?”—said I to my guide, whilst clambering the Alps on the 20th of last June. *Oui, Mons. nous verrons dans deux heures le grand glacier du Rhone.* “Yes sir, in two hours we shall see the great glacier of the Rhone.” I, for a moment, hastened my steps, fearing that the *eternal* ice might be melted before I got there, but I was soon brought to a halt, for I was exhausted. It is no holy-day work, pedestrianizing over those “Alps peeping o'er Alps and hills whose heads touch heaven.” The hardest work I ever performed was footing it over those regions of everlasting snow, but a man, capable of appreciating the grandest scenery

in all creation, is richly repaid for all his expense of sweat, shoe-leather, and money. There are some men who will look, unmoved, on the falls of Niagara, and call it a respectable mill dam, or will see nothing in the ruins of the Colosseum, but old, time-worn walls. Such men should stay at home for want of thought.

But I was going to speak of Glaciers. I had read much about them and studied the theory. I had looked on pictures of them, but could not conceive the reality. We were going along blithely, picking our way, as well as we could, over rocks, fissures, mountain-torrents, mud, snow and ice, the remains of avalanches, and had just passed an Alpine shepherd, who saluted us with the ordinary "*Gelobet sey Jesus Christus,*" to which we returned the accustomed reply "*In ewigkeit, Amen.*" How much more poetical this mountain salutation, than our cold and unmeaning, "*How d'ye do, Sir?*" "*Pretty well, I thank you! how are you?*" Well, just as we passed the shepherd and turned a sharp angle of our path, on one side of which was an elevation of 3000 feet and on the other a precipice of unmeasured depth, there it stood, the sea of ice! about half a mile off to the right. I roared with delight. I was in ecstasy. I danced and sang, and shouted loud enough to awaken a hundred slumbering echoes. I did every thing but swear. One of the most ardent wishes of my life had been realized. I saw a glacier. I had seen Niagara and the Natural Bridge, and had explored Mammoth Caves, but none of these had so completely unstrung me as the first view of that sea of ice. But a man easily loses his dignity on the Alps; that ethereal atmosphere had an influence on me very similar to that of nitrous oxide gas,—and you can laugh and leap and sing and shout without any effort or expense of dignity.

Can you conceive of a cataract of water, a mile wide, fifteen miles long, and 500 feet deep, rushing down between the sides of a mountain gorge, in a state of tremendous agitation and at an angle of 45°? Can you conceive this? remember, a mile wide and fifteen long! You have the idea—have you? Well, now conceive all this rushing, boiling, bellowing "hell of waters" all of a sudden frozen into solid ice and standing still, and you will have some faint idea of a glacier! the end of it is in the valley and the top of it away fifteen miles up in the regions far enough beyond the clouds,—it winds and turns and *serpentinizes* among the eternal mountains far out of sight. Oh! that Glacier is an overwhelming spectacle. I almost think a man will live the longer for having seen it!

But let me be more didactic; it is hard for me to be so, for I would

love to pour out my soul burdened with ecstasy at the bare remembrance of this awfully sublime spectacle.

“ A world of wonders, where creation seems  
No more the works of nature, but her dreams. ”

Glaciers are masses of ice, encased in the valleys or suspended by the flanks of lofty mountains. Their extent is, of course, various.—Those, which occupy the valleys of the Alps, descend, in general, from the highest summits and extend down to the regions of cultivation.—These are glaciers from 16 to 18 miles long, and even more, and from 1 to 3 miles wide.

They owe their existence to the eternal snow. When this increases to an enormous extent in the high mountains, and moves down in overwhelming masses to regions where it partly thaws and freezes again, and thus increases from year to year, a glacier is formed. The solid mass moves on, while it accumulates in the rear, and thus gradually descends to the bottom of the valley. There the end of it is melted away but it is still increasing behind, so that from age to age, it presents the same unchanging appearance. The water of rains and the melted snow penetrate the interior, where they freeze, and thus the huge mass is held together. This is the transition from snow to ice. The freezing process is going on even during the nights of summer, and already at sun-down, however hot the day may have been, the cold is intense.

Glacier ice has peculiar properties. The volume of water absorbed by glaciers is very unequal. It is greatest, of course, when the rays of the sun act most directly. On account of this unequal distribution of water, and from the fact that it does not freeze instantaneously, the ice is not of equal character, like that which the cold of winter produces on rivers. In the upper strata, (for glaciers are strata of ice,) the ice is composed of irregular pieces of various size and of various angles.—Some are nearly round—others angular. They are not always united together, but the larger the pieces, the less the cohesion. Wind, rain and heat make the ice porous, and render it capable of being bored.—Agassiz had occasion to bore it frequently to carry on his observations. He found it of unequal solidity, and discovered the softening effect of the atmosphere upon it. At one experiment, he bored only half a foot after several hours work, but on the following day, after a heavy rain, he penetrated a foot in half an hour.

The color of the ice is various : sometimes it is white and from a distance it looks like marble, the larger pieces are pale green, sometimes, there is a bluish reflection, and sometimes, rose red. Occasionally the

most splendid azure is witnessed. But usually, it is impure and dirty, in proportion to the stony and earthly material mingled with it.

The inhabitants of the Alps say, that "the glaciers love cleanliness," and this is a strange fact. Fragments of rock or wood, which fall into the fissures without reaching the bottom, after some time, even if it is for years, come to the surface. You would in vain look for a single imbedded stone in the exposed ice masses at the lower end of the glaciers, in walls of ice of a 100 feet in height. This is explained in various ways, but I have not room to treat the subject at large.

The external form of glaciers depends on their foundation. If that be flat, the glaciers will, in general, be flat. If the foundation is an inclined plane, the glacier also has an inclination towards the valley. At the lower end, they are usually convex, a consequence of the rays of heat reflected from the walls or sides of the valley, by which the ice at the sides is melted more rapidly than in the middle.

The surface of many presents undulatory elevations or depressions. The latter appear like serpentine furrows running in every direction into each other. These external forms are subject to many changes. In a few years, they would hardly be recognized, so great is the change they undergo.

Some glaciers are ornamented with a variety of ice pyramids, or needles of considerable height. The rays of the setting sun occasion the most splendid play of colors on these pyramids, and exhibit a most magnificent spectacle.

At their lower end, they not only present abrupt declivities, but also grottos of the most beautiful blue. Sometimes these grottos are 100 feet high, and 50 to 80 feet wide. Icicles hang from the roof, like stalactites in a cave. The floor is covered with large blocks of ice, formed by water, dropping down and freezing.

But why even begin to write on this subject, when but the faintest sketch would occupy more room than can be spared. It is a prolific theme, and my bare notes, hastily scratched down, occupy seven or eight pages. Besides, no description of mine can approach the reality. Go and see, and if you postpone your visit a year or two, I will go with you, and by my counsel, save you not a few dollars from the omniverous rapacity of Swiss guides and landlords. One who has suffered "some" is well qualified to give advice to a stranger in the country of the Alps.

J. G. M.

## REMINISCENCES OF STUDENT LIFE IN GERMANY.

## THE CHRISTIAN STUDENTS' SOCIETY, AT HALLE.

The *Christian* students' society! Why call it Christian? Are there any heathen among the students? Hardly; and yet there is some good reason for designating this association by such a title.

It consists, in the first place, of pious students. Its objects are, to promote the growth of piety among its members; to increase the love for thorough and independent study; to attempt to turn the current of opinion among the students against the practice of duelling; in general, to infuse into the student-life the wholesome spirit of the Gospel. It is, in short, a mutual encouragement and improvement society, among the confessedly pious.

Now imagine to yourself the establishment of such an association in the midst of a community of students who, whilst they profess to be studying theology, spend their evenings in carousals and debaucheries, in duelling and licentiousness; who scoff at everything like vital godliness; and even make a boast (I have it from authority) of preaching to the simple villagers in the vicinity of Halle, in their abominably vulgar Burschen-sprache ("Wer von diesem Brod *schmausen* wird &c.!!") Well might these pious young men designate themselves *Christians* in contrast with such baptized infidels as these.

But do not suppose that this designation is the one by which they are generally known. *Mucker-verein*, *Pietisten-kneipe*, *Kopfhänger*, are some of the taunting epithets that are thrown at them with the finger of scorn. But this is nothing new. In any community where the great preponderance of influence is opposed to vital religion, the humble Christian must be content to bear the name of hypocrite, or something worse.

In 1842, this society numbered about thirty. Their constitution and by-laws, if they had any, never were produced at any of the meetings at which it was my privilege to be present, nor did I ever hear minutes read, or see a President or Secretary. What! I hear some of our parliamentary Philomathæans or Phrenakosmians exclaim; no president or secretary, no constitution; why, how in the world, do they get along? How do they keep order? Stop! who told you they kept order? You must not go to Germany to seek for *constitutions* and *order*. You can find order, sometimes, at the point of the bayonet, under the eye of the *gens d'armes*; but do not seek for it, when the people are left to themselves. Don't expect it, above all things, in deliberative assemblies, especially if they be of a theological character. Why, I very well recollect upon one occasion, at the Moravian village of Gnadau, near Mag-



deburg, during a Pastoral Conference, that my hair fairly stood upon end, at the wild confusion, in which the clerical mass were vehemently bandying about the venerable Augustana. I could scarcely keep my seat.

But I am straying off from the Christlicher Studenten-verein. Perhaps our young collegians and seminarists may learn something else from them, if not how to maintain order and do business systematically.— Good forms and rules are good things, but a little more life and a little less routine would be of essential benefit to certain associations that might be named.

The Society was divided into three branches, and held *tri-weekly* meetings. On Tuesday evening the three divisions met separately, (alternately in the rooms of the students composing each division,) for the purpose of exegetical study, reading of essays, &c., and on Thursday evening for singing, mutual exhortation and prayer. On Saturday evening the whole Society met in a larger room, hired for the purpose, to drink beer, smoke, sing student's songs and enjoy themselves in various ways. All these meetings I have attended, and, taking all together, was convinced, that this society was doing *much good*. It seems peculiarly adapted to exert a favorable influence upon the German theological student, amid the circumstances into which he is thrown, and, if continued in the same spirit that pervaded it, some five years ago, it has doubtless been the means of rescuing many a heedless youth who, coming to the Babel of theological opinions, with views unfledged and habits unsettled, would else have been the prey of the first smooth rationalist, into whose hands he might have fallen.

Their method of procedure on Tuesday evening, was as follows.— The student, in whose room the "section" (of about ten) was meeting, played the part of Professor. The rest, severally, and by previous appointment, represented the most distinguished ancient and modern commentators, with whose views upon the section of some gospel or epistle which had been assigned as the evening's exercise, they were expected to be perfectly familiar.

The long pipes are filled and the lighted match circulates from bowl to bowl. All are now quietly puffing away and the soi-disant Professor commences his exposition. He has delivered himself upon a verse, when Mr. *Grotius*, (Jr.,) giving a smart whiff, reluctantly withdraws his pipe from his mouth to dispute the soundness of the interpretation. He has concluded, but he is soon convicted of unchurchliness by his neighbors *Harless* and *Chrysostom*. *Origen* and *Tholuck* next follow, precisely in the same vein of sentimental allegorizing, but the palmis

yielded, by common consent, to *Neander*, who seems most completely to have caught the spirit of the inspired writer, and who shows triumphantly that his interpretation has been the essence of all the soundest expositions upon the passage in every age of the church and substantially comprises them in one. The Professor, who has, in the mean time, seen the basis of his theory gradually disappearing amid the fumes of his knaster, now expresses his cordial assent to the views just expressed and proceeds to take up the next phrase in order.

Coffee is not an indispensably necessary accompaniment to the exercises, but as the pipe is but half a comfort without it, that stimulating beverage is seldom wanting on such occasions. On the evening which I have more particularly had in my eye, beer, as a somewhat unusual substitute, took its place.

The exegesis over, next in order came the essays. An admirable vindication of the Herrnhuter, (Moravians) by Herman Plitt, is the only one, of which I have any distinct recollection. The subjects generally were historical, often sketches of the condition and wants of the church, in the various sections of Germany where the writers had lived. Braes' picture of the Grand Duchy, of Brunswick, now occurs to me, a sad spectacle, of a dozen evangelical clergy among about three hundred rationalistic, with nearly one hundred expectants, i. e., candidates in waiting, a vast majority of whom were of the same stamp; and Rügge's account of the Temperance efforts in Osnabrück, with their (to them) astonishing success. They took a deep interest in some description of American revivals, church discipline and Sabbath sanctifications and Washingtonian reformations, &c., &c.

The meetings on Thursday evening were particularly interesting.—So little formality, such frank sincerity, such unaffected piety! I was highly delighted. The exercises consisted of alternate prayers and singing, (all standing during prayer and entering so cordially into the praise) interspersed with an exhortation from one of the older members, and several intervals of conversation raised upon some question of practical piety suggested by the hymns that were read or that rested on the mind of some member, who came to the meeting with the desire of having the opinions of his brethren upon it. An instance of this kind is fresh in my recollection and it is characteristic. It was one of the younger members, who, with some hesitation, started the inquiry, if it might ever be proper, in weighing the opinions of others, to give one-self up, for the time being, to the belief they were true? His idea was that amid so great a variety of theological *Richtungen* (schools—sets of opinions,) one would probably not fare so well by attaching himself

firmly to one, and handling the rest as necessarily wrong in the main.—But he supposed that by identifying himself first, with one and then with another, he would by and by hit upon the right one! The freshness of his notions was sufficiently apparent, and the judicious counsel was promptly given to examine well the foundation upon which he stood. Just such is the feeling, and just such is the utter instability with which crowds of German youth enter the University. They see in the Theological Faculty, almost every shade of opinion from the strictest orthodoxy to the merest Pantheism. Into which current shall they fall? Choose which they may, they will still be within the pale of *the church*. Their fate depends, in no small degree, upon the direction of the letter they carry in their pocket. If they have been recommended to a man of God, who feels for the tender youth, takes an interest in their future course, they will most probably choose him, and others of his stamp, as their preceptors. They listen to his lectures, they visit at his house, accompany him in his walks, they fall in with his *Richtung* and are safe. *Mutatis mutandis*—they are lost.

I attended but one of their convivial meetings, and that was the last in the session. The whole society assembled in the large room in the rear of a public house. At one end of the room was suspended a brilliant transparency—a sword encircled with palm branches, surmounted with the arms of the Association, consisting of a quartered field, containing respectively an altar and two clasped hands, a harp and notes, two books pierced by a pen and guarded by an eye, and an anchor with a bundle of rods, the whole surrounded by a circle of stars. The simple repast was introduced by a Segen-gesang, i. e., by *singing* grace, and was soon despatched. The supper was not the object of the meeting, it was a mere accompaniment. This over, the order of the evening seemed to be, every man to his pipe! When all had been duly filled and lighted, a farewell address was delivered by Rügge, the more touching passages of which were enthusiastically received, amid a great ringing and stamping of glasses, to say nothing of the potations. A new member was then received and welcomed by a cordial grasp of the hand all round. Songs and toasts followed, in rapid succession. I was surprised to find none of the current song-books in use, but was informed that particular pains were taken to keep out all vulgar and improper pieces, and each member kept a manuscript note-book for the purpose of collecting all the approved airs. Some of the pieces were capital, and the popular choruses made the walls ring again. A history of the Society was now read, which showed it to have passed through some severe persecutions. Upon one occasion heavy charges were brought

against it, before the University Court, but it had come off with flying colors and was now enjoying the express sanction of the authorities.

Plitt, another of those who were about to leave, now presented to the Association a handsome original drawing, representing two students before the altar, upon which were standing the cup, Bible and cross, also the altar-over emblazoned with the arms of the Association. Their hands were firmly grasped. Above the altar there hovered an angel, supplicating a blessing upon them. The architectural embellishments were, appropriately in the pure Gothic style. A simultaneous burst of applause and gratitude was his *vote of thanks*.

By this time the cloud of smoke was so dense as to render objects indistinct at the other end of the room and almost to suffocate unseasoned lungs. I was about begging off, when I found that the Society never kept very late hours, and would soon *disperse*. There followed an amusing poem, a satire, if I recollect rightly, upon the indolent, inflated, duel-fighting student. The whole wound up with a glee.

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OYSTERS.

“If the man who oysters cries,  
Cry not when his father dies,  
’Tis a proof that he would rather  
Have an oyster than his father—”

And what if he would?

My friend, hast thou well considered the matter, critically weighing an irreproachable oyster against parental — dogmatism? Or art thou, haply, a denizen of some inland region, as of some nether world, whereunto a visible oyster hath never penetrated? If so, thou mayest admire my impiety, while I, being full of oysters, would pity, not scorn, thine ignorance. Abide in thy bigotry, nor ever stray to the sea-board; for this food is sweeter than the lotus of Homer, and he that eateth thereof shall straightway forget his kin and his Western home.

Oysters!

“Sweets, which he who sings them knows.” Sole pure and undefiled creature, in a world corrupted and accursed! Oyster! thou art ever good. Like the sunbeam thou mayest pass through every change, thy glory is the same. The culinary flame may modify—nothing can improve thee. The condiments of every clime may humbly minister to thee, may diversify thy flavor: but after all, to my devoted heart, thou art like beauty “adorned the most when unadorned.” Thou art thy

only parallel. Salsifer is but a melancholy souvenir of oyster : there is no substitute.

Other poets may praise their beds of acanthus, of roses, or of down, as for me, if I

“Knew myself to build the lofty rhyme,”

*my* theme should be Beds of Oysters. Let garlands of Kali, Aphrodite the Ocean-queen's laurel, crown his brow, who jilted the fresh-water maids of Helicon, and sang to the Nereids of the deep the “Loves of Oysters”—an everlasting chorus to their epithalamium!

Doubt not, ye corseted and whale-bone-tortured damsels, if the oyster in his pearly palace *can* love; for *he* is nearly *all heart*. Doubt not, ye who pride yourselves in the antiquity of your blood, whether he ought to share your honors; for consider, that though you could trace your ancestry back to Adam, yet the first oyster was created before the first Man.

Good reader, I challenge thy experience, if the deglutition of this exquisite creature doth not awaken within thee all the goodness and meekness, and sweetness of thy nature — or of his? And is not that a moral meat which hath such power with lapsed humanity? *Is* it not “angels” food? What more could the gods themselves desire, unless it be a sort of patent self-opening oyster, warranted to keep in any climate? I can refuse no man money or service, when I feel the grace of the oyster within me: he cooleth my choler, he dissolveth my pride, he disremembereth me of my misfortunes, he maketh my face to shine, he whispereth to my soul like the friendliest of friends.

I am naturally a lover of all womankind, nay, I adore them; but — dost thou inquire, “but *what*?”

Think of it, reader! I suggest no common oysters. I adduce the large, semiluculent oyster of York River, or the sweet striated Pongo-teague. Behold him in his shell of dazzling pearl, beautiful and tender and innocent as a sleeping angel, — and dost thou catch that errant odor, so subtle, yet so divine? Yes, reader, I love the woman, but say, *entre nous*, don't you think the oyster is *somewhat* — if it be ever so little —.

But the sex is in arms; and shall I see thee, O oyster! annihilated? Say then, what oyster was ever a termagant—a virago—a shrew? Did oysters eat the forbidden fruit? Did *they* fire Troy? The thing is obvious. Let woman rejoice in the prerogative of *servng* the friend of man, and man her friend.

“But have they souls?”

Reader, I know not; neither dost thou: nevertheless I shall hold

my own opinion without controversy. If they have, those souls either leave them, when they descend into the dark tomb of our stomachs, or else they are absorbed into our own spirits. Take they their flight?—They need no “*pax vobiscum*” from such as me: I envy their apotheosis. Do they take the other horn of the dilemma? Happy mortal that I am, to have imbibed so many myriads of such sinless souls!

I have sat down in the oysterless regions of the West, and remembered the oyster-pots of my home. I thought of the sphenoidal shell, the Oyster’s Coat of Arms, then contemplated the King of Spain, upon my last pillar dollar; and O! how gladly would I have exchanged the silver for the pearl—the “*Carolus Dei gratia*” for the *Auster Dei gratia*! And when I dreamed, I was ever in Baltimore; the streets rang again with the musical cry of Old Moses; the tureen smoked —.

“To live is but to dream”—with a difference.

No man curseth the oyster; for out of his mouth proceedeth blessing only. He is disallowed of no man. Grahame courteth his smiles, Thomson preferreth him even to Lobelia. Priessnitz owns him as his aquatic ally, and even Hahnemann, who wageth war upon the coffee-bean—even he blesseth the innocent oyster. The Catholic knoweth well on fast-days that this meat is not flesh;—to call it *fish* were an abomination. The Son of Temperance himself will swallow his six dozen,—only touch not a thimble-full of *ale*!

P. G. S.

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COLLEGE REMINISCENCES. NO. II.

BY AN OLD STAGER.

It often affords me a melancholy pleasure to take up the College catalogue of my Sophomorical days and follow my fellow students through their wanderings and diversified destiny of life. More than four lustres have been written in the register of eternity, since those halcyon days, and every one’s character has been fully developed, and every one’s fate, for this world, unalterably fixed.

I will confine myself now to the retro-examination of my own class, and as I glance my eye down the long list, for there were fifty of us, I am made sad and glad by turns. I can laugh hilariously, and, if I were given to the melting mood, I ought to weep dolorously. Not a few have *graduated* for life and have *stood their examination* before a higher tribunal than a College Faculty. Alas! that vicious practices contracted at College should have shortened the days of not a few! There was young Morton; the idol of his widowed mother—the dearly cherished

and only brother of his beautiful sisters,—the modest, unassuming boy of 16,—religiously trained and full of reverence for religion, but poor Morton; “he fell among thieves”—they tempted him with wine,—they sang Bacchanalian songs,—they lured him to their midnight festivals and carousals in town,—they initiated him into the mysteries of cards —they incited him to every deed of mischief, and the scoundrels always managed to escape detection themselves, whilst their unsuspecting dupe was frequently cited before that dreaded court, the Faculty. Thus he went through his College course and was at last admitted to his degree, as it now stands opposite his name in the records, “*admissus speciali gratia.*” In a few years, he ran his career, and his broken hearted mother and distracted sisters followed to the grave a corpse, swollen and putrid from intemperance. This is the brief history of many a young man whom I have known, whose habits of inebriety were contracted at college.

In looking down the list, I come to a name, which always excites a smile. He is still living,—he holds a high office under government and is considered not an ordinary man. R—, was a vain, pedantic, effeminate coxcomb. He was the College dandy, who bestowed more attention on the curls of his hair than on his Euclid, and used more Macassar oil in anointing it, than he did fish oil in his study lamp. He was stupid withal, and an intolerable bore. Every day he would come to my room and there I would read over to him the various lessons and demonstrate the problems. He squeezed through after a fashion; and yet that man has been elected to high offices,—has been successful in his profession,—at present draws a good salary from government, but I am sure his classics and mathematics never elevated him so high. He was mainly indebted to me for his diploma, and whilst he has been thus fortunate, I have never been elected to office by the people, nor ever received an appointment from government, and have had but a moderate share of patronage in my profession. I am almost convinced of the truth of the proverb, “a fool for luck.” I sometimes meet R—. He knows me and that is all, and I do not remember when I was more mortified, than when on a recent occasion, this man’s influence with the government was absolutely indispensable to me to secure a certain design I had in view. I was almost disgusted at the idea of being under obligation to such a man, when I knew his want of capacity and talents, but he had influence in a certain quarter, and I had none. I was almost tempted to exclaim, what are talents and education worth after all?

“How are you, Dick?—how d’ye do?—why, time has made chicken feet about the corners of your mouth,—a little frosty about the up-

per story, I see. These your children, Dick?—the most beautiful cherubs I ever saw—you must have an angelic wife,—no wonder, such beautiful children, when father and mother are so handsome.” “Pshaw!—cease your gabble, Tom,” said I, “and sit down.” This was Tom W—, whom I had not seen for some years. He was a wild, frolicking, extravagant youngster, whose father was rich and liberal. I have known Tom to treat a room full and bleed freely to the amount of \$10 or \$12 before the party broke up. [There were intolerable sponges at our college in those days,—are there any now?—they would stick to a *free* young man like leeches and suck him dry, and never spend a cent themselves.] Tom’s habits of extravagance often run him into debt, and it was said he left College, forgetting to settle certain claims which the steward, the wash-woman, and sundry others had against him. It has been said, perhaps maliciously, that many other students are particularly forgetful on this point. W— was in the habit of visiting me when he came to town, and I was somewhat offended at his familiarity. He told me he was out of funds,—expected a remittance in a few days and wished to borrow twenty dollars. I gave it to him. He forgot his promise, and to this day, he stands charged with the sum aforesaid in my books. I have not seen him since. I have heard that he has laid several others of his old fellow students under similar obligations.

“You are in the wrong room, Sir.” “I presume not, Sir, the servant directed me to this room and here I intend to sleep, and you’ll have no objections to my company when you know who I am.” This conversation took place between me and a student of medicine, at a tavern in W—. I knew he boarded there and requested the servant to give me a bed in the room the student occupied. He did not know me when I entered, but as I uttered the last words, I took the candle and approached the bed in which he was lying. “Why, Dick, is this you? I did not know you, or I would not have thus addressed you.” We had been fellow students at College, but he had been expelled for destroying College property, firing the temple of Cloacina in a frolic. We spoke of old times, and brought up many a freak of by-gone days, but I observed that his laugh was subdued and he easily relapsed into melancholy. “Ah! Dick,” said he at last, “I am not a happy man, I am not the gay lad I was when at College.” “Lost your father,” I asked, “or low in funds?” “None of these, but worse than either.” “What can be worse?” “*The bitter remembrance of being expelled from college,*” and he concealed his head under the cover. He soon recovered from his deep emotion and told me all his feelings. He appeared



to suffer greatly, he could not enter any other institution, for he had no certificate of honorable dismissal, of course—his education was incomplete and he had no diploma. His father and friends were greatly displeased, his rivals took advantage of his error to injure his character, and his own conscience smote him painfully. He had made every reparation for the mischief he could, by forwarding \$150 to the treasurer of the college (to rebuild the temple,) but still the disgrace of his expulsion was almost insupportable. He fully justified the Faculty, and did not, like many a youth righteously punished, declare himself innocent and try to injure the institution. Guilty young men may sometimes succeed in persuading their over indulgent *papas* and *mamas* to believe them innocent, but no body else does even though they swear to it vehemently. I know a few such now—every body knows them to be guilty, but their fond parents cannot think that *their* dear boy could ever have done this naughty deed.

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#### INFLUENCE OF POLITE LITERATURE ON THE HEART.

It is universally admitted that polite literature improves the understanding, enlivens the imagination, and furnishes the memory with useful knowledge. Its beneficial tendency on the mind is denied by none, whilst its influence on the heart by some is regarded as less favorable, and by others, as altogether injurious. They grant that it enables men to think more profoundly, reason correctly and express themselves beautifully, but they deny that it is calculated to contribute to moral culture.

There may have been, and still are persons, who, through an excessive fondness for the liberal arts, and especially the beautiful imagery and glowing pictures of the Greek and Latin authors, are induced to neglect devotional reading, and thus deprive the heart of its necessary and daily food; but this is the effect of an excessive attachment to a good thing, and not the proper influence of its lawful use.

We might permit the beauties of nature, the glowing heavens, the smiling flowers, the magnificent forest, the splendor of green fields and the golden harvest, so to engross our attention, as absolutely to forget their great and glorious Author; but would this prove that an intelligent view of the beauties of nature, as they are spread around us in a thousand glowing forms, is not calculated to excite religious emotions and to direct our hearts in gratitude to the Deity? By an industrious study of polite literature, we procure among other advantages, a good taste, i. e., a tender, quick, and true perception of the beautiful, the correct and the harmonious, on the one hand, and the defective, the weak, and incon-

gruous, on the other. The influence of such a taste does not extend to the mind only, but to the whole character of man. It watches over him like a faithful guardian, and silently and unobserved whispers to him, "This is the path, walk thou in it." The influence of a liberal education accompanies us on our whole journey through life, and never ceases to strew and ornament our path with the choicest flowers.

When we read the glowing examples of friendship, patriotism and philanthropy, expressed in the most beautiful and touching language by the ancient classics, our hearts become soft and tender, and we feel that we should be warmer friends, purer patriots, and withal, better men. We are prepared to say with Cicero, "*Hæc studia adolescentiam alunt, senectutem oblectant, secundas res ornant, adversis perfugium ac solatium præbent, delectant domi, non impediunt foris, pernociant nobiscum, peregrinantur, rusticantur.*"

J. J. R.

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GREEK AND ROMAN CLASSICS.

If any man would be satisfied that an extensive use may be made of the Greek and Roman Classics in the illustration of Biblical themes, he has only to take up a translation of any of the best writers. We say a translation, for no man, who knows anything of the originals, needs any argument on this subject—and by the exercise of a very moderate share of the power of association, he will find his conceptions of the Sacred Scriptures rendered more vivid, his imagination excited, and his heart kindled. I go to my library—I take down at random a volume from my shelf of translations. I open it, and find it to be *Æschylus*—and the tragedy, *The Prometheus Vinculus*. The passage in Genesis—"Tubal-Cain, an instructor of every artificer in brass or iron," is suggested by these lines in regard to Prometheus,

"The radiant pride, the firing flame, that lends  
Its aid to every art, he stole and bore  
The gift to mortals."

I can recall the greatly more splendid description of Job, beginning "*There is a path which no fowl knoweth, and which the vultures eye hath not seen,*" when I read in the *Prometheas* of

"Those pathless wilds  
Where human footstep never marked the ground."

When David calls upon every object in earth and heaven, "*Praise Him, ye heavens of heavens—ye dragons and all deeps, fire and hail, snow and vapor: stormy wind fulfilling his word,*" he exhibits a species of sublimity to which this is similar,

"Ethereal air, and ye swift-winged winds,  
Ye rivers springing from fresh founts, ye waves  
That o'er the interminable ocean wreath  
Your crisped smiles, thou all-producing earth  
And thee bright sun, I call, whose flaming orb  
Views the wide world beneath."

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# Pennsylvania College, Gettysburg, Pa.

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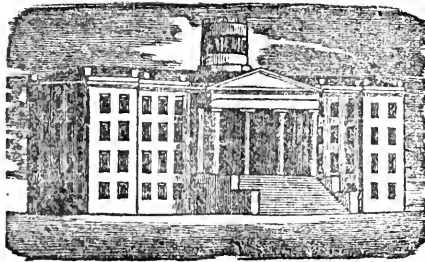
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THE  
LITERARY RECORD AND JOURNAL

Of the Linnaean Association of Pennsylvania College.

AUGUST, 1847.



CONDUCTED  
By a Committee of the Association.

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## PUBLIC EXAMINATION.

The examination of the Classes in Pennsylvania College will commence on the 2d inst., and continue during the whole week. The following is the programme of the exercises :

Monday.	The Preparatory Department will be examined from 9 A. M. until 12 M., and from 2 P. M. to 5 P. M.
Tuesday	9. Junior Class—Greek. 10. Sophomore—Mathematics. 11. Freshman—Latin. 3. Sophomore—Greek Testament. 4. Freshman—Algebra.
Wednesday	9. Junior—Evidences of Christianity. 10. Sophomore—Rhetoric. 11. Junior—Logic. 3. Freshman—Greek. 4. Sophomore—Mathematics.
Thursday	9. Junior—Optics. 10. Freshman—Modern History. 11. Sophomore—Archæology. 3. Freshman—Geometry. 4. Senior German Class.
Friday	9. Sophomore—Latin. 10. Junior—Chemistry and Meteorology. 11. Junior German Class. 3. Junior—Rhetoric. 4. Freshman—Classical Literature
Saturday	9. Sophomore—Greek. 10. Junior—Latin.

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The *final examination* of the Senior Class will take place on Wednesday, August 11th. The class consists of seventeen, and is the largest the College has yet graduated. The *Commencement* will occur five weeks succeeding the examination, Thursday, Sept. 16th. On the Sabbath preceding, the *Baccalaureate* discourse will be delivered by *President Krauth*. On Tuesday afternoon the Linnæan Hall will be dedicated and an address, appropriate to the occasion, delivered by the President of the Association, *J. G. Morris, D. D.* On Tuesday evening the valedictory exercises of the Senior Class in the Theological Seminary will take place, and a discourse before the Alumni of the Institution will be delivered by Rev. *F. W. Conrad*, of Hagerstown, Md. On Wednesday afternoon the annual oration before the Literary Societies will be pronounced by *Robert Tyler, Esq.*, of Philadelphia; and on Wednesday the address to the Alumni of the College will be delivered by *A. R. Stevenson, Esq.*, of Gettysburg. As the exercises of Commencement week are likely to prove of a very interesting character, we shall be glad to have all our friends, who can make it convenient, to favor us with their presence on the occasion.

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THE WORLD AT THE ADVENT.

*(Concluded from page 202.)*

Whatever difference there might be between the religions of these various lands, it was certainly not a variation from good to better or from evil to good, but from bad to worse. To pass from one to another was but to witness successive enormities. The idea of the existence of some Supreme Creator and Governor, which doubtless had been originally carried with them by the sons of Noah, was lost, as far as any approach to correctness is concerned, until about four centuries and a half before the Redeemer's birth, when Anaxagoras revived the idea which after him was perpetuated by many of the philosophers. But not only did they not give it a wide diffusion, but regarded it as its greatest value that it was unknown to the people. The dog may breathe the air that Cæsar breathes, but the vulgar herd, as they contemptuously called them, must not share the thoughts of the philosophers. They kept up the aristocracy of brain, and so anxious were they to separate philosophy from the mass, that they cultivated obscurity as an excellence. By the abstruse and technical terms which they copiously employed, they succeeded not only in keeping the people in the dark, but in bewildering each other and puzzling themselves. Of Aristotle, by many considered the greatest and by all one of the greatest, it is said, that an admirer of his confessed that he read him forty times before he began to understand him, and so strongly did he become tinged with the character of his favorite, that it is thought, the volumes in which he communicates his discoveries would require as many readings as the Stagyrite himself, (though without any likelihood of receiving them.) The people therefore were not likely to get much benefit from the superior light of the Philosophers.

Yet the doctrine of the unity of the God-head remained glimmering. A ray of the truth was seen here and there. It was indeed a lamp shining in a dark place, yet it was not entirely without use in preparing

the eyes of the nations for the light that was about to burst on them.—The transition from lamp-light to the sun, is not quite so painful or blinding, as from entire darkness to noon-day. But the truth, when admitted, was robbed of much of its efficacy, by a falsehood grafted upon it. This was that, with the Supreme God, there were deities, inferior indeed, but still of great power, each of whom had some special object of care. Their favor must be secured by the rites, the ceremonies and the offerings prescribed by their priests. The character of the gods was at once odious and ridiculous. This led, on the part of some, to a hatred of the whole popular system, and a thinly veiled contempt for all its advocates. On the part of the poets, the same feelings were shown in representations so ludicrous, as to prove that if they were not downright sceptics, they had less faith than fun.

Every nation had deities peculiarly its own, and unshared by others. Indeed the lords many and gods many so abounded, that any man could have as many as he wanted. A man without a blanket could have a dozen of deities—and without an obolus to buy thread to patch the holes in his pallium, could invoke fifty gods to temper the winds that crept through them. The monarch of the gods was a slave bound by the fixed laws of destiny or fate. The power of Jupiter is illustrated in the comparatively refined scheme of Homer, by the figure of a chain fastened to his throne, with link fixed in link, of which he can move the first as he pleases, but that done, his power ceases. Link works in link, and event produces event, far beyond his control. The gods of the East differed from those of the North. Though the legends are so mingled as to give some general resemblance between the various national idols, it is yet a delusive idea that they are identical.

The popular idolatry of the Grecians was far more refined than that of the Egyptians. It was characteristic of the national vanity of the Greeks and Romans that they persisted in the assertion that their gods, under some form, were worshipped by all nations. They have however asserted it so stoutly and defended it so ingeniously, that the idea is not yet dispelled.

The Egyptians indeed waged wars for their gods, but not to extend their power or to make subjects of other nations and compel their worship, but to defend them from aggression. The objects of their worship were hated or eaten by other nations. The sacred ibis was treated like a goose. Apis was made beef of, and the holy crocodile, the leviathan, was drawn out with a hook and reached through his scales.—Their religious wars then were designed for the defence of their deities. They did not purpose so much to secure their worship as to save



them from the weapons and teeth of their infidel neighbors. These were the crusades of the cat and monkey.

The Romans indeed had a public religion which allowed no innovation. All the citizens, however, were allowed to have what private religion they pleased. So long as public security and existing laws were not endangered, they could hold what meetings, erect what temples, and adore what deities they pleased. They had an established church for whose support all were taxed, but dissent was attended with neither punishment, odium or political disability. From this policy, so just and liberal, there was no departure, even in cases where apparent and recent danger had resulted from some abuse of this freedom. During the protracted wars with Hannibal, a religious movement of a singular character was exhibited by the people of Rome. The public religion was deserted and strange modes of worship became prevalent. The foreign superstitions, hitherto cherished only in private, now obtruded themselves into public places, until the Capitolian forum itself ceased to be the exclusive possession of the gods of the State. It seemed as though there had been some sudden change either on the part of the deities or of men. Great crowds of women, so devoted in every age, even to the shadow of religion, thronged to the new worship and sacrifices. A set of poor meat-burners and fortune-tellers were the priests and seers, the sacrificers and prophets of the new superstition. Thousands of peasants, who came for refuge to the city from the desolated districts, found it to their interest to play upon the public mind in this state. They gained a living by presenting the claims of their gods, and if they came without any, it was easy to invent them. Such at last was the state of things that all good citizens became alarmed. The sheriff and constables of the city, in attempting to take from the mob the implements of their rites and to drive them from the forum, were on the point of being massacred. The Senate finally interposed and decreed that the MS. records of all religions should be brought to the prætor, and that henceforth no one should employ a new or foreign rite in any *public* or *consecrated* place. Here in the very face of a flagrant abuse the rights of conscience were maintained. The law merely reserved for the state religion the places prepared at its own expense. It is essentially the law of our own land, which would not permit one denomination to seize upon the house erected at the expense, and for the purposes of another.

This liberty of worship was not invaded in the still more flagrant case of the Bacchanalian orgies. These horrid rites had been secretly introduced into Rome, under the cover of a mystery guarded by the

most awful oaths. Deeds were nightly performed, whose chastest relation is impure. The grossest filthiness was connected with murder, where the shrieks of the slain were drowned by coarse instruments of music and the shouts of the Bacchanals. Thousands of men and women were drawn into these accursed assemblies, where every shameless and nameless crime was committed. The guardian and father-in-law of Æbutius had fraudulently used the estate left his race by his father. To conceal his crime he wished to get him initiated, knowing that his complete ruin or murder would soon ensue. Æbutius was warned, by a lewd yet faithful woman, with whom he was connected, of the nature of these secrets with which she had become acquainted. Through him they reached the ears of the officers of the city. The strong arm of the civil power at once came down upon these filthy and bloody wretches. Many were executed—many more were imprisoned.—Every place, used for their purposes, was destroyed, unless some ancient altar or statue stood there. Yet the very law which pronounced so just a sentence, made this provision, “that if any one felt himself bound in conscience and by religious conviction to worship with these rites (of course without the impurity and murder which had been added to them,) on making application through the prætor to a quorum of the Senate, the privilege might be obtained—though not more than five could be allowed to be present, nor could there be funds or priests set apart.” This was a great and wise policy—and so fixed was the defence of the rights of conscience as a principle, that these flagrant abuses of it did not lead to an invasion of their true prerogatives.—[Liv. xxxix: 18.]

This liberality was doubtless cherished and heightened by the literary character of the age. As diversity of views is proportioned to the number of thinkers, the most intellectual nations are ever the most tolerant, for the men who design to secure it for themselves are most ready to grant to others freedom of thought and speech. In this intellectual advancement, were advantages to the Christian religion, so decided that it has been universally acknowledged. Origen, so original as sometimes to be almost fantastic, remarks it. Nor need we argue that Christianity demanded an age advanced far beyond the elements of religious truth. Had twelve artisans propagated it one hundred years earlier—we speak of it now considered simply as a religion promoted by the ordinary appliances of truth—it would have died with them. The world was not ripe enough. Had twelve artisans proclaimed it a century later it would have died with them. The world was too ripe. This period alone was the fullness of the times.

Combined with this intellectual character of the age, its tolerant spirit was of high importance. Liberty within certain limits was unbridled. Bigotry had ceased to be a legalized thing. Rome forbade no gods, that did not interfere with their political policy, or the quiet of the State. They cared not whether a man believed in one god or in twenty gods, so that he broke nobody's leg, and picked nobody's pocket.—Her liberality, it is true, was like that of the sceptic statesman in whose language we have couched her principles, and perhaps like that of a majority, both of liberal christians and liberal infidels. She was liberal because she was indifferent. She tolerated all religions because she believed heartily in none. The same word expresses religion and superstition. The gods had begun to be out of date. Jupiter's thunderbolts ceased to dart through any other heaven than that of the poet's fancy. Olympus had become a sad collection of deformed deities, completely without character or clothing; the wits had stripped them of both, without however always securing either for themselves.

This state of things was not, it is true, the best conceivable for the reception of Christianity—but it is the best which we could rationally expect under the circumstances. It is bad enough, it is true, to have men listen to you, with the purpose of laughing at you, but it is far worse, if they listen, with the design of cutting your throat or roasting you when you are done. The persecutions which the Christians endured, were not because they presented a new religion, but because they desired to subvert that which existed. This was resisted as a part of state policy, and some, though far fewer than is popularly supposed, suffered martyrdom. The truth is, Christianity had more to dread from the incredulity, than the persecution of the age—and it is no trifling argument of her divine origin that she advanced in an age so infidel in its tendencies.

Even the people were catching the looseness,—for the fittest way to make men cease to believe, is to give them too much to believe. Not a child, says Juvenal, old enough to wash itself believes that there are ghosts and the realms beneath the ground, the boat-pole of Charon, and the black frogs in the river Styx, or that so many thousands pass over in one boat. And to this heathen universalism he ascribes that terrific corruption of morals which prevailed at Rome. Heathenism itself had a deeper depth, and into that depth, modern infidelity, in the name of Christ and of the Father of mercies, would plunge us.

But did not the higher conceptions of philosophers, and the purer strains of poets take from the doctrine of the gods much of its absurdity, and throw a classic beauty around what they could not destroy?

We reply that in some sense they could and did. They could interweave their own better thoughts, and take in a more refined sense what in the popular mind was surpassingly gross. The gods might become embodiments of virtues or personifications of nature and truth. But the fact cannot be suppressed, that this sublime idealism never would reach the crowd. When the *priests* brought oxen and garlands to sacrifice to Paul and Barnabas, it might be to them conclusive against their divinity, that these Christian teachers were of like passions with themselves; but it was not so with the crowd. They had never worshipped beings other than of like passions with themselves; the king of their deities was an adulterer and murderer, his court was composed of debauched and worthless gods, and goddesses of impure passions,—he had a thief for a prime minister, and had barely escaped being eaten by his cannibal father.

In all the intricacy of the Mythology, the philosophers saw or pretended to see, mythical and fanciful embodiments of the truths of the created and the divine nature, but their scheme was too subtle to produce comfort in themselves or conviction in the people. The system to which they were attached might not expire at once, or grow putrid so soon as it became extinct. But to embroider its shroud after death or to galvanize it into some spasmodic *show* of life—was not the power required to bring back the breath or keep it from corruption.

Yet there is in the language of the best thinkers on the nature of the gods, an occasional thought which is almost startling. So near the truth and yet to have missed it: like the comet, which in its swift track nears the sun and seems ready to rush into its bosom, but wheels in its wild orb, and is again lost in the trackless realms of darkness. Certain it is, that they are oftentimes too near the truth to suffer us to receive the representations of those who are fond of degrading to the lowest depths all heathen religions without distinction. It may be that such writers think they give us higher ideas of the divine grace to ourselves if they can show that it has been denied to all others. But it is not God's glory to distinguish the Greek from the Jew, except for the Greek's god as well as the Jew's, and to assert it, is not to honor but to reproach him. To think the robe we wear increases in value, because we secured the piece and no one else can have a dress of the same kind, is the appropriate feeling of a silly girl, but we need some higher basis than a thought of this kind for our reverence and love of God.

There is a melancholy beauty about many of these fragments of ancient God-making. They are as beautiful as the marbles of the olden

times and as imperishable. God-making was essentially one of the fine arts of antiquity. The dreamers in Theogony no more expected to produce real gods than the sculptors expected to produce real men and women. It was the triumph of the art in both cases, if they got a person to think for a time that they were. It was the glory of intellectual power, not of theology, that they sought. They appealed to men not for their belief, but their admiration. Anaxagoras conceives Jupiter, as Apelles paints Alexander. If the former is thought to have a fine conception he is as fully satisfied as the latter, if it be pronounced that he has made a good likeness. The philosopher's Jupiter, no more expects to get into any body's creed than the painter's picture. The leader of each system endeavored, in the god he framed, to shadow out his own character. His representations of God were representations of what he imagined *he* would be, if elevated far above all the ills of humanity, made deathless, endowed with the perpetual youth of Endymion without his perpetual sleep, acting in the loftiest sphere in the midst of the grand scenes of heaven—with the almighty power, the resistless will, the real joys of divine being. No wonder that as man ever confounds his accidents with the intrinsic portions of his being and his evil with his good, heaven was peopled with gods and demi-gods, worthy to be compeers of the man-embodying Supreme. No wonder that the Supreme Deity, Humanity deified, sometimes showed the lust, the arrogance, or the violence of his archetype. It is Bible language to say, God made Man,—but in paganism, Man made God. They gave their God company because they could not do without it themselves, and unconsciously made him vile or feeble, because they knew not their own hearts or their own weakness.

In this way it happened that the best men devised the best God—the God of Socrates, would be infinite, omniscient, omnipresent, Socrates himself with something of weakness and something of wrong. For in all these cases we are not so much to regard the description given by the philosophers, as what we know must have been their conceptions. There are a thousand sources whence we may draw our expressions apart from full conception of the ideas of which they are the expression.

But though the Gods of the various nations were men and women of superhuman powers, they had entirely human appetites. Their conceptions, to be popular, were obliged to conciliate the national vanity.—They made Gods like themselves, that they might boast they were like Gods. The sublime conception of God as the Father, in a sense higher than the political one of the Jews, and the physical one of the

heathen was reserved for that religion which alone is both perfect and pure. Judaism was pure but not perfect, Heathenism is neither perfect nor pure.

There is nothing winning, therefore, or touching to man's better nature in these heathen gods, with all the beauty which art and literature have thrown around them. The system prevailed widely and was universally diffused, because man's "nature abhors a vacuum." Mankind will never be satisfied with negatives. It was found therefore with its many modifications everywhere. It was cold enough for the bleakest mountain top. It was dark enough for the deepest shades of the pit. It was vague enough for the indifference, and imaginative enough for the fancy, and easy enough for the restiveness of a fallen world. In short like some forms of Pseudo-Christianity—it was a hopeless thing to be saved by, but a delicious thing to be lost by.

It was indeed an advance from the ruder Paganism, when philosophers inspired their gods by the in-breathings of their own souls. But the loftiest of heathen men was one, over whose aspect was thrown the shade, which falls on him who nurses the thought, or dreads that death may be perpetual sleep. This painful impress, which the better spirit of antiquity could not escape, is everywhere seen. The noblest statues of the gods never did and never can attract. Lofty they may be, and a grand beauty mingled with terror may show the power of the intellect by which they were designed. But the divinities of ancient art, when they pass the merely animal and sensuous, terrify, whilst they inspire.—The super-human in ancient art carries with it something so cold, so spectral, that no fire of Genius can prevent it from chilling. It is the beauty of the dead, it is the impressiveness which repulses. The stupendous being, the greatest of its aims is one who often frowns, but rarely smiles—who casts with his own hand the thunder-bolt, but makes it the part of an inferior to spring the light arch of the rain-bow.

It is of one who revealed himself but once—and left but a heap of human ashes to attest the terror of the god and the presumption of the mortal. There was no choice. Such gods could only be preserved from becoming contemptible by being made terrible. It was a degradation to suppose that God could be represented in marble. It was no less good taste than sound religion to forbid it at Sinai. In the attempts of heathen sculptors to do it, the highest efforts reached but the production of a sublime repulsiveness. The gods were fearful men on stone. The terror of the eye, the awe of the arm, the compacted omnipotence, the high humanity of these marble divinities, may as mere trophies of arts hold us breathless, but never would they lead us with recovered breath,

to burst into the sublimest of all adorations "Our Father who art in heaven!" As lovers of the arts, we may feel in the passing away of a system with which sculpture, the purest of them all, was associated, a more than momentary regret. That consummation is not without its pain, which a poet of our day has touched with the finest lines of his art.

"The altar flames with flowers no more ;  
But on the fallen and crumbled shrines  
The mournful moon-beam palely shines."—Brook's Scip. Anth., p. 41.

Yet our pain must ever, with the glories of the Messiah's reign, by which heathen arts and gods were superseded, mingle also the reflection that in those arts we have lost much that was repulsive. The heart of the sculptor never acted with his arm. It was the pure work of the brain. God is living—all these were dead—and he that lingered too long as he gazed on their beauty, found that dissolution is succeeded by decay. In them the shades of death-like expressiveness is cast on forms so vital, so full of marble breathfulness, as to mingle the mysterious and seemingly severed principles of life and death, as they unite in no other being of the fancy, save the spectral woman who dined with death for the ship's crew and won the ancient mariner,

"The night-mare Life in Death was she  
Who thicks man's blood with cold."

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#### ON THE DOUBLING OF CONSONANTS IN ENGLISH.

Real reduplications of consonants, that is, reduplications of their sound, are in most languages comparatively rare. It cannot be too clearly understood that in words like *pitted*, *stabbing*, *massy*, etc. there is no repetition of the sound of *t*, *b*, or *s*. Between the word *pitted*, that is, marked by the small-pox, and *pitied*, as being an object of pity, there is no difference of pronunciation, so far as the sound of the *t* is concerned.

There are, however, a few cases of true reduplication. In compound and derived words, when the former part of the whole word ends, and the latter part begins with the same consonant sound, that sound is repeated distinctly. Thus :

*K* is doubled to the ear in *book-case*.

*L* is doubled in *civil-list*, *soulless*, *solcely*, *vilely*.

*N* is doubled in *innate*, *unnatural*, *oneness*.

*T* is doubled in *state-tax*, *scaport-town*.

Even here one of the doubled sounds is sometimes dropped by those who would yet be thought correct speakers.

In ordinary cases, therefore, the doubling of a consonant is to be regarded merely as an orthographical expedient for preserving the short quantity of the preceding vowel, or else for exhibiting the etymology of the word, as there are many other orthographical expedients or conventional modes of writing, particularly in English.

This orthographical expedient is employed uniformly after monosyllables, ending with a single consonant and having a short vowel, when a new syllable is added; as, *drag, dragging*; *mat, matted*; *mad, madded*; *cap, capped*; *stab, stabbing*.

Also after other words accented on the last syllable, under the same conditions; as, *remit, remitting*; *imbed, imbedded*; *entrap, entrapped*; *berob, berobbed*; *inter, interring*; *defer, deferring*.

Also after words ending with the atomic mutes, *c, t, p*, which require a partial or secondary accent on the last syllable; as, *traffic, trafficking*; *buffet, buffeted*; *kidnap, kidnapped*. So *frolic*; *benefit, covet, closet, discomfit, limit, profit, rivet*; *develop, envelop, gallop, gossip, scallop, wallop, worship*.

Also in other words to exhibit the etymology; as, *travel*, (comp. Fr. *travailler*;) *libel*, (comp. Lat. *libellus*;) *cavil*, (comp. Lat. *cavillor*;) *duel*, (comp. Lat. *duellum*.) So *apparel*; *betel, cancel, dishevel, empanel, gravel, level, model, novel, pencil*.

But this orthographical expedient is properly omitted after verbs accented on the penult and having an obscure vowel in the ultimate syllable; as, *threaten, lighten*; *enter*, (very different from *inter*;) *difer*, (very different from *defer*;) *alter*; *gather*; *fatal, moral, canon*; *counsel*; *parallel, bowel, carol, channel, cudgel, drivet, equal, grovel, ravel, rival, shovel, &c.*

*New Haven, Con.*

H. D. S.

#### THE GARDEN OF PLANTS AT PARIS.

Le museum d'histoire naturelle de Paris est le plus vaste établissemets qui ait jamais été consacré à la science de la nature.—CUVIER.

Every body has heard of this celebrated establishment, but no man who has not seen it, can form any just conception of it. It is not merely what its name indicates, a botanical garden, but an enclosure of thirty acres containing every thing that lives and grows, which the French government, with its money, energy and science, could collect from every part of the known world. Immense and splendid buildings for the reception of these objects meet your view in all directions:—a glorious place for the naturalist to visit is that garden of plants and a charming place too for the mere admirer of nature.



It would take a large volume to give a description of it, but still I shall try within a short space, to present an outline sketch.—Let me begin with the *menagerie* :

The ground plot of this department is cut through by numerous walks which serpentine so as to form a sort of labyrinth. Twenty-one large compartments or parks, surrounded and closed by a double railing, in each of which there is a small building into which the animals can retire, cover all that section destined for those animals which are harmless. The rest is occupied by a vast rotunda, in which are kept the large herbivorous quadrupeds—two immense aviaries—a large semi-circular gallery for the monkeys—and lodges for the ferocious beasts.

The building containing these lodges is very long, and admirably adapted to the exhibition and protection of the animals. There is a large number of them and they are all kept in the most perfect order. This department does not look very unlike any other well regulated menagerie, except that the building is continuous in a line, the cages are larger, and the animals are not tormented by cruel keepers for the sport of gaping idlers.

All the harmless and herbivorous quadrupeds have a large space of ground to range in, so that they can take exercise, and thus their health is preserved.

The birds, of which there is an immense number of species, are kept in cages of the size of an ordinary room, in which they have ample space to fly,—many different species are kept in the same cage and seem to live in harmony, although there is generally one cock of the walk, who rules all the rest. I think there are twenty of these large wire enclosures, in which may be seen living birds from every part of the world. Besides these, there are large artificial ponds for the water fowls, and more retired enclosures thickly planted with trees and shrubbery for the propagation of pheasants and other birds, which require retirement and silence.

You can scarcely name any animal which may not be found living in this establishment. The greatest possible care is bestowed on them and every thing is done to promote their comfort and keep them in good condition. Here the beavers, the muskrats, the otters and all others of that family have their ponds in which they can swim just as when in a state of nature, and even the huge elephants have water deep enough for them to revel in. As far as possible, all the other animals are accommodated with every thing as they had it when roaming wild in their native forests. You find more animals in this garden than are comprised in twenty of the largest travelling menageries we see in this country.

But let us enter one of the large, massive buildings we see on all sides. Yes; I have heard before of this long suite of rooms filled with skeletons of almost all animals in creation. This is the *museum of comparative anatomy*, in which Cuvier immortalized himself. Only twelve large rooms, and most of them with galleries, are filled with specimens of this department of science! Every thing that could possibly be anatomized is to be seen here, and those things which could not be preserved, have been most admirably figured in wax. In this way, for instance, is represented the gestation of many animals, the human not excepted, from the very beginning to the end of it!

Are you tired of looking at these dry bones and artificial anatomies? Well, just enter another immense edifice near at hand and mount to the second story first. You will there see about six long rooms crowded with prepared mammals exclusively, but these are done up in the highest style of the taxidermic art.

When you are satisfied here, just walk on and you will come to a suite of rooms containing fifty-seven of the largest sort of glass door cases full of birds. You are bewildered and do not know where to begin. You are wearied with the gorgeousness of their plumage, and almost wish that there had never been so many birds created, for it seems impossible for you to inspect the half of them.

Do you like to look at *reptiles*? Just go down the broad stairs and enter a large apartment towards the south and there you will have an opportunity of examining more than three thousand specimens.

Of the *fishes*, there is no end; thirty-seven cases contain this matchless collection. This is the place in which Cuvier and Valenciennes worked out their system and produced their immortal book on Fishes. In walking through these rooms and knowing that here these and other illustrious naturalists worked and wrote and some of them died, it makes a man feel solemn, as though the spirits of these mighty men still hovered round, reluctant to leave the place where their strongest efforts were put forth.

I do not think it necessary to enter minutely into an account of the collection of spiders, crabs, myriapodes and insects—of the shells, *annelida et radiata*. Their number is twenty legions—and their arrangement perfect.

Perhaps, you are fond of *geology*. Here you will see almost every thing which that science has developed in the way of fossils. Six large rooms are occupied with the specimens.

If you love minerals, here your eyes have a feast which you will never forget. Sixty large glass door cases are filled with the finest spe-

cimens the world can produce, and amongst them are the rarest that have ever been found.

Now, wishing to breathe fresh air again, walk out into the garden. You are fond of flowers.—You will there see numerous hot-houses, which, if they were all put together, would reach further than eighteen hundred feet, and in them you will find every tropical plant that can be introduced and cultivated. There are more than sixteen thousand species of plants in this garden, without counting the varieties; and here you may revel in botanical luxuries, if you happen to have any taste in that way.

After promenading here for an hour or two, you will be ready to enter another large building, and that is the Library. What a collection of works on Natural History! Thousands on thousands fill the well appointed shelves and cases. Here a student of Natural History could spend his life, for whatever has been written on this subject, worth buying, is found in this Library.

You may perhaps feel inclined to peep into the various lecture rooms, and if it happens to be lecture hour, and there are few hours which are not lecture hours, you will see crowds of studious young men hastily scratching down into their portfolios the valuable instruction that falls from the lips of the celebrated men, whom the enlightened government of France has placed in those chairs.

A mere cursory glance at the scientific riches of the garden of plants will convince any one of the truth of Cuvier's declaration at the head of this paper, "that it is the largest establishment that has ever been consecrated to the science of nature." M.

PHILOSOPHY OF STORMS. NO. VII.

BY PROF. W. L. ATLEE, M. D., PHILADELPHIA, PA.

During a hot day when the dew point is very high and the upper and lower currents of air are calm, the steam power in the air is very great, and the up-moving, cloud forming column goes up to an immense perpendicular height. The action of the column now becomes extremely violent in consequence of the cloud becoming very lofty at its top and of great depth, and thus so much vapor will be condensed, and so large an amount of caloric of elasticity evolved, that the cloud will rapidly assume a specific gravity much inferior to that of the surrounding air.

In this state of things, the air, which is pressed in on all sides below, coming in beneath the cloud, will expand by diminished pressure even before it ascends, and in expanding will become colder about five

degrees for every inch which the barometer stands lower under the cloud than on the outside. This expansion and refrigeration of the air will, under these circumstances, occur immediately upon its ingress under the cloud, apart from the influence exerted by its ascent.

In consequence of this reduction in temperature from diminished pressure, the air will not have to ascend so high before it begins to condense its vapor, as it did when the cloud began to form at first, and consequently the cloud will be formed lower and lower by the ascending column, in proportion as it increases in perpendicular height from its base to its top. The difference between our assumed dew-point and temperature being 10 degrees, the height of the base of the cloud at its first formation will be 1000 yards, but as every inch of depression of the barometer produces 5 degrees of cold, the difference between the dew-point and temperature will be reduced correspondently. Consequently if the barometer falls one inch, this difference will be only five degrees, which being the complement of the dew-point, the condensation of vapor must occur 500 yards lower than at first, making the base of the cloud, at this instant, only 500 yards high. A reference at this time to the temperature of the dew-point will at once indicate this fact.

The cloud becoming of greater perpendicular diameter, and the barometer sinking more and more under its base, in consequence of the specific levity of the air in the cloud, and this being a cooling process, the temperature of the air below the cloud is rapidly reduced down to the temperature nearly of the dew-point. The air, therefore, not only expands and cools so soon as it comes under the cloud, but cloud may begin to form so soon as the air comes into the centre of the ascending column, even before it has left the surface of the ground, and thus the cloud will touch the earth.

If the cloud now be narrow and very lofty the strife of elements becomes intense. With a mighty steam-power, it sweeps, with mighty grandeur, across the sea, or, in the majesty of its might, drives its impetuous career over the earth, at once prostrating, with unrelenting fury, the firmly rooted monarchs of the forest, and desolating the strongest and proudest architectural monuments of man. Well may the Psalmist say that "the voice of the Lord is upon the waters!" that He "shaketh the wilderness!" that He "rides upon the wind, and directs the storm!"

I will endeavor to illustrate this part of the subject by detailing the phenomena that usually occur in the forming-stage of these violent storms. If we are upon a mountain when those clouds called *cumuli* are forming over a plain, we will perceive that their bases are all upon the same level. Should the dew-point be very high, and every thing

favorable, we will see some rising above the rest. If we watch now until one becomes very lofty, and appears to take the lead of the rest, its base will no longer remain on the same level, but becomes lower than the bases of the other cumuli. The top now ascends until it becomes more lofty than what is denominated the *hail-cloud*, and as we observe it ascending higher and higher, we will perceive the base of it descending lower and lower. The base now, instead of being flat as at first, is bulged out below like an udder, projecting one or two hundred yards below the original base. It now begins to spread out at the top, resembling the top of a mushroom. We will see the udder continuing to descend lower and lower until at last it reaches to the surface of the earth, assuming the form of an inverted cone, and the whole cloud now looks like the stem and top of a mushroom. If we should be in a favorable situation in relation to the cloud it will now appear very deep, and before the udder reaches the earth, we will observe leaves and other light bodies flying up into it, and as the cloud approximates to the earth heavier bodies will ascend, and finally when it strikes the earth it opens upon it with all its fury, carrying up bodies of immense weight, logs, wagons, trees, roofs of barns and houses, &c., with incredible power and velocity. This "besom of destruction" as it travels over the sea produces the *Water-spout*, and on land is the *Tornado*.

Although I have spoken of the cloud descending to the surface of the earth, I have merely described the circumstance as it appears to the eye. The cloud does not sink down as it appears to do, and as is stated in works on Meteorology. From what has been said above, the explanation of the formation of this inverted cone or udder projecting from the original base of the cloud may be anticipated. As the barometer continues to sink under the base of the cloud, the temperature of the air diminishes until it is reduced down to the dew-point in the whole extent of the column from the base of the cloud down to the surface of the earth. At the same time the temperature of the air all around on the outside of the column is, according to what I have assumed, ten degrees higher than the dew-point, and consequently so soon as the air outside is driven within the column it is instantly cooled ten degrees, and its excess of gaseous vapor is condensed into cloud at the moment of its ingress. Thus, instead of the base of the cloud sinking down and forming the udder, the latter is caused by the accumulation of additional vapor under the base, brought in by the surrounding air and condensed by the cooling power of the column.

The levity of these dense clouds and the upward motion of the air are strongly exemplified by the tornado and water-spout. They are al-

ways seen to descend from a black cloud, sometimes with a velocity of half a mile in two seconds. Now, as Prof. Espy observes, this velocity precludes the possibility of this visible spout having fallen by gravity, for, in that time, if its specific gravity were ten thousand times greater than it is, it could not fall more than sixty-four feet in two seconds. Besides, if the cloud were very heavy and descended, the necessary consequences would be that trees, barns, houses, &c. would be crushed by its immense weight, and their fragments would be left upon the ground where they before stood. But every fact connected with the phenomena of such storms not only disproves such a result, but also the idea of *mere horizontal centrifugal force*, as advocated by a certain celebrated meteorologist. At the very moment that the cloud *appears* to be sinking lower and lower, the up-moving current is becoming stronger and stronger, and its velocity and force are soon exhibited by the rapidity with which heavy bodies ascend.

If the cloud pressed downwards, and there were no other forces except the centrifugal, why do the leaves and trees *fly up*? Why do the roofs fly up, and the walls of buildings *fly apart, as if by explosion*? Why are shingles and other light bodies carried twenty and thirty miles off and then *descend in a hail storm*? And why are hail-stones frequently picked up containing particles of sand and other matter imbedded within them?

These things are all satisfactorily explained by Prof. Espy's theory. Indeed the great beauty of this theory is that it is a philosophical deduction from existing facts, and is based upon well established principles of science. He has nothing to do with conjecture; he assumes no hypothesis; he begins, goes on, and ends with facts, demonstrating their truth as he proceeds, and explaining the laws which govern them. A theory, thus founded, must be correct in all its essential features, even should some of the minor phenomena be misinterpreted.

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EPISTLES TO STUDENTS. NO. VII.

MY YOUNG FRIENDS :

Although some time has elapsed since my last communication, it does not indicate an indisposition on my part to continue the letters. Letter-writing is not always the work to which there is a strong tendency, and indeed there is frequently greater neglect in complying with duty in this, than in almost any thing else amongst the minor moralities of life. So strong is my inclination to do you good, if not by the communication of new truth, yet by stirring up your minds by way of re-

membrance, that whatever disinclination may be obtruded by the flesh, it will be sufficiently counteracted by the spirit, and you shall not be deprived of the benefit of communications, which would derive no additional force from an avowed authorship, the authorship of which you will not be likely to determine.

You were left, in the last epistle, in full membership in the institution, having passed through an honorable probation, with the College oath bound on your conscience, your truth and honor pledged to respect your calling, and an exposition of your duties, as presented in the matriculation vow, in your hands. This commentary on the fundamental law of your College, the earliest which has yet appeared, or at any rate, been reduced to writing, may serve to guide you in future decisions, in regard to points of duty, on which you may have doubt, and it may be profitably preserved for reference and kept as a *vade mecum* during your sojourn in academic bowers. Occupying this "stand-point," as the Germans are wont to say, you should determine that the brief but most important period of your life now before you shall be faithfully consecrated to the purposes of your own advancement in knowledge and virtue.

Time is a talent entrusted to us by our Maker, of inestimable value, and you are bound, as all men are, by your interests, by your conscience, and by your God, to employ it well and to use it sparingly, and "to pay no moment, but in purchase of its worth." Many young men, and many old men, have regretted and bitterly regretted the loss of time. No proof has ever yet appeared, in the annals of the world, that any one's life has been rendered sorrowful by the recollection of well-spent hours. To enable you to make your time subservient to your good, you should fix in your minds a deep conviction of its value, and that it flies irrevocably. As nothing is more consumptive of time than company, and that company is unprofitable from which we can learn nothing, be upon your guard against forming a fondness for society, which whilst it swallows up your precious hours, furnishes no equivalent for them. It is an exceedingly unwise plan for any young man, during his College course, to lay himself out for special attention to young Ladies. It is unprofitable to him, it is so to them. The implication in this is not that he is to hold no intercourse with womankind—far from it—but that is not to be a stated employment, his periodical business from week to week. An hour spent, occasionally, during the suspension of study, which the College laws allow, ought to be regarded as a *quantum sufficit*. If on special occasions two or three times in a College course more should be allowed, all reasonable expectations should be considered gratified.

These are views, at which young men arrive always, but in many instances when it is too late. Cannot you be profited by the experience of others, and acquire wisdom from the mistakes of those who have gone before you, and admonish you?

In addition to the loss of time necessarily resulting from too much devotion to female society, it is injurious by unfitting the mind for study. It tends to dissipate it, to fill it with ideas not easily connected with the stern lessons of science and literature. It opens the way for various irregularities in conduct, both in our general relations, and those specific ones in which students stand. More than one man has wounded his conscience and pierced his heart through with sorrow, and made others deeply interested to mourn over his sad declension from the virtue and rectitude he promised, who might trace, in a fair analysis, all the evils which have befallen him, to a course, the opposite of that which is now recommended.

More than one has experienced a perpetual exile, more than one is experiencing a temporary exile, more than one is failing in the accomplishment of his studies so as to endanger his standing and his ultimate success, the philosophy of whose calamity may be traced to a greater fondness for the Ladies than for study.

The mode in which this operates may be learned from the following case, which is that of an individual, and, although it may suit many, is sketched from the career of one. A. who was sent to College and progressed well in the earlier part of his course, secured a favorable report in regard to his scholarship from time to time, became a Christian, and a professor of religion. His success in study operated upon his vanity and produced a high degree of self-importance. He commenced to visit the ladies, and fascinated by their society, he neglected his studies, became irregular in his conduct, frequently violated College regulations, lost the confidence of the Faculty, was reprov'd frequently and sharply by the President, declined in his scholarship, was reported unfavorably to his father to his deep grief, became more and more deteriorated in his religious character, felt more and more a disinclination to prepare himself for the sacred office to which his aspirations had been directed since his conversion, produced a conviction in all who knew him, that his moral fitness for it was becoming daily less, and finally experienced in parental disapprobation a banishment, temporary it may be, from his appropriate pursuits, which, whilst no one considers it unjust, must be attended with reflections to him the most painful. Case upon case might be given, derived not from the imagination but from the memory, illustrative of the evil of that we now deprecate. These cases are not easily



forgotten. They are too sorrowful to pass soon into oblivion. There are too many, springing up successively to them, to hold them in the links of association. They cannot be obliterated. Wisely is it ordered that they make a deep impression, for they are adapted to constitute most salutary warnings for others, and to serve as signals of the dangers, which lurk in the way of those, who are tempted to substitute for study the winning converse of the gentler sex.

Yours, &c.

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PLAGUES. NO. I.

In examining the subject of atmospherical distemperatures for a very different purpose from the present, the operation, the prevalence and influence of plague and pestilence occupied my attention, and for a time diverted me from my original course, to examine the plagues preceding the Israelitish exodus and compare their phenomena with the wide-spreading and destructive diseases that have afflicted mankind in subsequent ages.

Pestilence, being one of the agencies in the hand of the Almighty, by which his dispensations are administered, when, for wise reasons, he would visit humanity with afflictions, has from the period of earliest history attracted attention and enlisted multitudes in the desire for a rational explanation. The human mind, arrested by every thing connected with mystery, and ever prone to associate mystery with every thing not easily explicable, was early led to conceive demoniacal agency in the production of pestilences, but at this day no such thought obtains except with the unthinking.

Although "God moves in a mysterious way, his wonders to perform," we find in all things that Deity appears to use natural agencies, where they will accomplish his purposes, but attains his ends by the peculiarity attending their special appearances. The idea of a miracle, as understood by many persons, seems to contemplate the sole agency of divine power, as though the means by which the miracle is effected, are as miraculous as the issue itself. Too many are thus satisfied and see no other interest in the circumstance. But a new field is opened for survey when natural processes are contemplated, so modified and arranged by divine power as to develop new phenomena, or produce new and unusual effects. The prolonged duration of light, at the instance of Joshua, was no less a miracle than if a newly created sun had shed its beams upon the gathering shade of night to light the bands of Israel in their work of death. When, too, we contemplate the desolation of the scourge

that swept the land of Egypt, and view the destructive operations of nature working with unwonted violence,

“Pregnant with plagues and shedding seeds of death,”

we are not less awed to find it stayed by that bound which Deity set to Goshen, than if new elements had sprung to action, led by the creative hand in their career of destruction.

“If God, like man, his purpose could renew,

His laws could vary, or his plans undo ;

Desponding faith would droop its cheerless wing,

Religion deaden to a lifeless thing !

Where could we, rational, repose our trust,

But in a power immutable as just ?”

The plagues, which have at divers times ravaged the earth, demonstrate in their histories, that the phenomena attending the plagues of Egypt, have in highly distempered seasons been repeated in kind, if not in degree. We may here remark that in this is furnished an incidental proof tending to establish the authenticity and accuracy of the Bible in the truthfulness of its delineations. At that period of the world's history, long antecedent to any record of mere human production, the inspired historian narrates as truth, a series of circumstances pertaining to locality and phenomena of nature, the accuracy of which subsequent centuries have proved by the recurrence of the same phenomena. The history of Egypt, in the particulars of Moses' description, seems, ages long after the exodus, to declare that the Almighty did lay his hand upon the land, and it will forever bear its testimony in vindication of the truth of inspiration.

We have no idea of attempting any philosophical explanation of the plagues, but think it not uninteresting to glance cursorily at similar events, which have occurred in other ages of the world.

The variety observed in the character of pestilence, by which mankind is afflicted, appeared to be produced by different causes. We see it at one time apparently the offspring of essential alterations in the properties of the elements, spreading with a steady march over extensive countries, and raging, despite the change of season or climate, with equal intensity in the elevated temperature of the South as amid the frosts of northern winter. At other times, apparently the production of excessively intemperate seasons, it maintains its deadly power, only until the succession of seasons has deprived it of its virulence and terminated its existence. The latter is almost always local and limited to a particular city or country.

Another circumstance attending the great plagues in different centuries is, that the human race does not limit the operation of the pestilen-

tial principle. It diffuses its pernicious influence through the air and so deteriorates its essential constitution, that animals, as horses, cattle, sheep, and even dogs and cats, have fallen victims. The death of multitudes of fish in river and ocean indicates the involvement of even waters of the earth in the deadly contamination.

The Egyptian plagues in their order of succession and phenomena seem to have been the result of the plague principle operating in a highly concentrated form, yet directed and limited in the extent of its action by the power of Deity. The elements, wrought to a state of the utmost agitation, caused earth, air and sea to feel these perturbations of nature, and man and animals upon land, the inhabitants of the deep and the tribes of the air, fell alike victims to the universal scourge.

We very properly feel amazement as, in imagination, we follow Moses, when having concluded his interview with Pharaoh and retired from the royal council, he lifts his mystic rod, and the elements, moving at his bidding to their work of death, commence their agitations upon the waters of Egypt, "and all the waters that were in the river were turned into blood." We exclaim, as did the magicians at a subsequent plague, "this is the finger of God." K.

*Baltimore, Md.*

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THE DOWNWARD TENDENCY OF HUMAN STATURE.

MR. EDITOR: The following fragment came into my hands a few days ago. I send it to you for the Journal with the understanding, however, that I do not vouch either for the truth of the principle endeavored to be proved, nor even for the *authenticity* and *genuineness* of the illustrations. Indeed I must say that I think the author, whoever he is, has imitated the cunning without attaining any of the merits of two modern writers, Scott and Macauley. Whenever either of these authors needed a poetical heading for a chapter or an illustration to give point to an argument and could not find one in their memory, they usually manufactured it, and credited it to "Old Play" in "the Persian Fable." And I half suspect it has been so with the following article, as I have searched diligently but in vain to verify some of his examples; however it would not be right to keep it from the public on account of my own deficiency and short-sightedness in finding vouchers for his statements. Some of the learned readers of the Journal may possibly be able to follow him in his authorities. Q. C. X.

The proposition I contend for is this: *Since the creation of man, the tendency of human stature has been downwards, and that it will continue so, until man be diminished from off the earth.*

The traditions and legends concerning the stature of Adam are as different and conflicting as human fancies can be. Dunlop in his *Roman Literature*, quoting from some old writer, fixes Adam's height at one hundred and twenty-three feet and six inches. The Mohammedans anathematize all who believe him to be less than forty-one feet high. Thirty-eight feet is the point in the creed of the Swenkfeldians. Stackhouse, a most moderate author, assigns Adam ten feet of corporeity.

And not only Adam, but the antediluvians also, the children of Anak, the hunters of Nimrod, the contemporaries and the sons of Noah, were all without doubt much above the common height of our times. And so we find all through ancient history down to the times of Hesiod and Homer (when men were a trifle more than eight feet,) a regular downward tendency of the human stature. This is, of course, not hard to believe, since the extraordinary length of human life, that man enjoyed before the flood, presupposes a corresponding extraordinary length of human stature—and as the one diminished, so also the other decreased.

Immediately after the flood the declension was marvellously great, owing most likely to the influence of so much moisture in the atmosphere and the earth, which in this instance, contrary to the ordinary rule, may have dwarfed rather than promoted growth. From the time of the flood to the destruction of Jerusalem, there is abundant evidence that though the stature of man had decreased, yet that it was still larger than it now is. When Alexander forded the river Granicus, 340 B. C., the passage was effected by one hundred and eighty men joining hands: now the river is six hundred yards wide, and this could not have been done unless the men were in the proportion of seven feet ten inches, making allowance, of course, for the rapidity of the current—it being next to the Ganges the most rapid river in the world. According to Xenophon, the foot-prints of a company of men he was tracking in Persia, were nearly eighteen inches in length; this even allowing for long shoes, would (according to Davies' method of computation) make the stature of the men at least 1 foot 9 inches and 2 barley corns higher than the present ordinary standing. A very careful study of Josephus will convince the reader, that in the times in which he wrote, men could not have been less than 7 feet 7½ inches. The bed, which Julius Cæsar carried with him in his campaigns, measured eight feet without the feathers, and he understood economy too well to waste either time, money or *room*. The specimens of the old Roman toga preserved in the "Jardin des Plantes," and "the British Museum," are 6 feet and 5 inches long, and when we consider that they were worn on the shoulders, we cannot but perceive that the human stature must have been considerably more than that.

The vast tumuli which were discovered upon the banks of the Seine, in the 16th century, were supposed to have been the tombs of the 300,000 who fell in the wars between Clovis, the first Merovingian king, and the Eastern Barbarians, and of those skeletons, none were less than 6 feet 4 or 5, and many an inch or two longer. So it is, the diminution goes on little by little, gradual indeed but very perceptible. According to Eginhard, the dwarf of Charlemagne's court was about five feet high, if so the common average must have been at least over 6 feet 6 inches, since we would scarcely consider a dwarf to be remarkable unless he was in the neighborhood of four feet. The fierce and bearded Huns of Attila, who came down from their dark forests like a whirlwind upon the luxury and magnificence of old Rome, were said to have been over seven feet high—however this may be accounted for from their origin and modes of life. Gibbon says they were the offspring of the infernal spirits and outlawed witches, and that they never tasted bread but lived upon uncooked flesh. William, the Conqueror, though the largest man of his age, was between 7 feet 3 and 4 inches.

When the dark ages set in, men's sizes diminished in a fearful ratio, almost one-eighth of an inch every generation, and when the revival of letters brought light and knowledge to a benighted world, man emerged from the midnight gloom at least three inches shorter than he entered it. Let any man go into Westminster Abbey and see the armor of the different ages, from the Saxon Heptarchy to the Revolution of 1688, and he will see the regular gradations of descent as plainly as old Isaac Rushton could behold the step and stair-like proportions of his twenty-one sons. Let him measure his own size by them—his own strength by wielding their battle-axes, and he will come out convinced not only that man has decreased in stature but that he is decreasing and will soon be diminished.

It seems to me that I have quoted facts enough to prove my proposition; the examples chosen have been "ex-abundante." The matter is as clear as the astronomical truth that the sun rises in the East and sets in the West. Have you never wondered why in the old houses of the last two centuries, every thing was on the largest scale, the chimneys, hearths, doors, windows, closets, &c? This is but another evidence.

One word as to the philosophy of the subject, and the consequences:

Why is it so? Some infidels affirm that the proboscis of the elephant has been produced by a continual effort—a constant stretching out of the neck of the animal through a series of ages; this is of course false, but as we cull medicinal remedies from poisonous plants, so even from infidel doctrines we may gather useful hints. For six thousand years man

has followed the debasing, *littling*, inclinations of his bad nature—his nerves, his muscles, his limbs, his flesh, his bones, his *body* have been perverted, warped, abused, and consequently *dwarfed* by his constant devotion to pleasure, luxury, and licentiousness : and hence we believe that so long as his nature is evilly inclined his body will diminish, and as Pelagrarism is effete there is no prospect before us but continual, regular, bodily diminution.

But then again there may be another reason—it may be man's destiny, the spirit of progress ; though of course the destiny cannot be styled a *great* one, it may be a noble one : though the progress be not a *high* one, yet it may be towards perfection. We are inclined to this latter opinion : and we think that small men, instead of being behind the age, are in advance of it. See Napoleon, Tamerlane, Melancthon, King Alfred, Robert of Normandy, Dr. Channing, Solyman the magnificent.

The Patagonians are the simple children of nature ; the Lilliputians have well nigh fulfilled their calling and worked out their destiny.

And the diminution is not with man only ; but with animals, trees, rivers, worlds, systems, every thing has a tendency to smallness.—“Diminute,” is stamped on all the greatness of nature, and on every work of art,—on man, the lord, and on the great globe itself, and all its

“gorgeous temples and cloud-capped towers.”

At Herschel's last measurement the Sun was 158.612 miles less in diameter than at the time of Copernicus. Francis Drake sailed round the world in 300 days, Capt. Stockton can do it in 190. The largest tree in Southampton forest, in William Rufus' reign, measured seventeen feet in circumference, now none can be found above twelve. Topechooche could scarcely see across the Mississippi two hundred and fifty years ago, and a Hoosier's ball will reach from Kentucky to the Missouri shore. The duodecimos of Magliabechi are the octavos of Horne. The lapdogs of the court of Belilarius were as large as our terriers. The earth is shrinking into itself ; the oceans are wasting away. Man is growing shorter. What a terrible prospect ! Our grand-children will be as much shorter than we, as we are shorter than our ancestors.

And thus it will go down and down and down to the lowest point, and man, *progressing* to the smallest atom of matter—the indivisible point—incapable of further diminution, will vanish into thin air, and shrunk into nothing, will be dissipated like

“The baseless fabric of a vision.”

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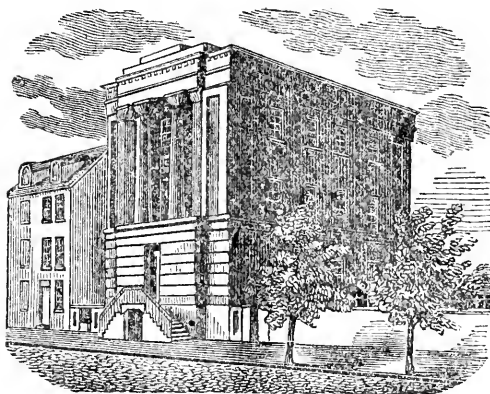
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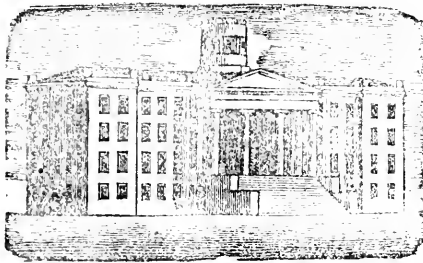
[NUMBER II.

THE

# LITERARY RECORD AND JOURNAL

Of the Linnaean Association of Pennsylvania College

SEPTEMBER, 1847.



CONDUCTED  
By a Committee of the Association.

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VOL. III.

SEPTEMBER, 1847.

No. 11.

## THE AURORA BOREALIS.

THIS splendid phenomenon, though often witnessed and much admired, has not, on that account, been divested of any of its wonderful and interesting character. Though many facts have been accumulated concerning it within the last century, its nature still remains a great mystery. The ignorant still view it with terror, as fore-shadowing some terrible calamity; and philosophers, although satisfied that it is a phenomenon forcing its luminous characters upon the attention of the observer according to natural laws, are yet divided in opinion as to its cause.

Some of these opinions, in connection with its leading characteristics and facts, it may not, at this time, be uninteresting to present.

1. *Its great outline features.*

1. It, sometimes, presents itself to us, in the northern horizon, merely as a diffused light, varying in height and brilliancy, and resembling the light of approaching day. Hence it has been called the "*Northern Dawn*," the "*Northern Lights*," or the "*Aurora Borealis*." For a similar reason, that, which is occasionally witnessed in high latitudes in the Southern Hemisphere, has been called the "*Aurora Australis*."

2. At other times, the diffused light is accompanied by a dark mass, resembling a *bank of vapor or of thin-cirrus cloud* lying on and skirting the horizon, from behind and above which the light seems to proceed.

3. More frequently, however, broad masses of luminous matter, in apparently parallel lines, are seen to dart up, at various points, from behind this nebulous mass towards the zenith. These masses, called "*streamers*," are at different times, of various colors, such as white and the different shades of red, yellow, and rarely blue. It is not unusual to see them white near the horizon, and red in their upward path. Although they generally radiate from some points with greater brilliancy

than others, they occasionally fill the whole northern heavens, and are exceedingly vivid, so that it is not strange that ignorant and excitable minds should be filled with alarm at their appearance. The parallelism, however, referred to as apparent in the rays of the separate masses, does not really exist, for all evidently converge to a common point, which is near the zenith. This is very striking when the aurora extends far round from the north toward the east and west. Then the sky appears like a great dome, towards the top of which the streamers dart up, from all the parts of the luminous horizon.

4. Accompanying the streamers, and apparently rolled along and supported by them, may sometimes be seen waves of light called "*auroral waves*," and also, on account of their irregular motion and fantastic shapes, "*merry dancers*." These, to the highly excitable imaginations of the fearful and superstitious, have suggested the forms of armies engaged in deadly conflict with each other, so that their hurried and confused movements, the fire-flashes of their arms, and the streams of the blood of their slain could be distinctly seen, and even the dying echos of their musketry and artillery could be faintly heard. And hence aurooras unusual for their brilliancy, intensity of color, and irregular movements have been regarded by them as portentous of sanguinary and destructive war.

5. It very frequently happens that the streamers, which shoot up towards the zenith, converge in a bright patch, or "*corona*;" which in its turn, becomes a centre from which the most brilliant flashes of various-colored light are sent forth: and which, therefore, becomes, if possible, an object of greater interest and wonder than any other part of the great auroral display. The corona is therefore not only the point *towards* which the streamers from the northern semicircle of the horizon tend, but also a centre of emanation in all directions; but, especially towards the south, if there be an auroral arch in that direction. It is generally an object of exceedingly great beauty and splendor. Some coronas have been witnessed of a uniform rose-red color, and others have been seen to flash forth alternate sectors of red, white, and yellow light. The position of the corona, it is worthy of remark, is uniformly found to be in or near the elevated pole of the dipping needle, which, for the inhabitants of Gettysburg, would be about  $2^{\circ}$  east, and  $18\frac{1}{2}^{\circ}$  south of the zenith.

6. Another almost constant characteristic of the aurora is the existence of one or more *luminous arches*, very much resembling cirrus cloud, stretching across the heavens from some eastern point to one near the west. Such an arch was described in the June number of this Journal,

by D. Kirkwood, Esq. The cases, in which one arch only is to be seen by the same spectator are far more frequent, than those in which two or more are visible at the same time. Captain Bonnycastle, who has given, in the 30th volume of Silliman's Journal, an interesting description of a very splendid aurora, as seen by him on the Northern shore of Lake Ontario, and who asserts that the arch is a constant character of the aurora of the lakes, saw *four* at the same time. When several co-exist, the more southern is mostly white; the rest are sometimes party-colored. The *breadth* of the arch, which is nearly uniform throughout its whole extent, is from  $3^{\circ}$  to  $12^{\circ}$ , being different during different auroras, and, we have every reason to believe, also for different observers or in different localities, even during the same display. We are forced to this last conclusion by the discordant estimates made by various careful observers of what was regarded the same arch. That local causes materially influence the appearance or non-appearance of the arch is more than probable, from the fact stated above upon the authority of Captain Bonnycastle, who saw three or four not noticed by others, and from the fact that one observer may see two, whilst others, not more than a few miles distant, will see only the brighter.

Though sometimes irregularly bent in a portion of its course, the arch is generally very regular and well defined, and lies nearly in a great circle of the sphere. Its position is generally a little oblique to the meridian. That of April 7th ult., for example, cut the eastern horizon at about  $15^{\circ}$  south of east, and met the opposite horizon at about  $15^{\circ}$  north of west. The position is perhaps at right angles to the *magnetic* not the terrestrial region.

As to its formation it is various. Sometimes it seems to be formed by a portion of luminous cloud appearing in the eastern quarter of the heavens, and gradually extending itself westward by a kind of rolling or wave-like motion. This motion, which by some has been compared to that of forming snow-drifts is a very constant character of the arch. Sometimes, however, it seems to start almost suddenly into existence, and to disappear and reappear successively again at nearly the same place in the heavens. And at other times it seems to arise from a portion of the nebulous matter or vapor, described as lying in the northern horizon, detached and impelled towards the equator by the same force which impels the streamers. Indeed, becoming, after it has moved some distance from the north, the southern limit of the streamers, it appears as if it were thrust forward by them. This was beautifully exemplified in the remarkable arch of the 7th of April last, which was so extensively witnessed and admired in the northern United States. At a

few minutes before 10 o'clock, P. M., as several observers at this place directed their attention to the northern heavens, they were delighted to see an arch, then about  $45^{\circ}$  high at its apex, moving rapidly upwards towards the zenith, whilst the streamers, extending up from the horizon to the arch, caused the whole appearance to resemble that of a "rain of fire" descending from a burning cloud. In a few minutes, (the time was not noted accurately,) the arch reached the zenith, where it appeared about 10 o'clock, and from which it afterwards slowly moved a few degrees farther southward. In this position it remained until nearly 11 o'clock, and there presented that singular wave-like motion westward already alluded to, and at times sending forth short branches, like streamers, towards the north-west. The polar distance reached by the moving arch before it becomes stationary, is various at different times; being, as it would seem, equal to the repulsive power exerted from the magnetic focus or the origin of the streamers. It does not, however, often reach farther southward than the zenith of latitude  $35^{\circ}$ . But such an altitude would, to one in high latitude, appear to be in the southern horizon, so that the apparent height may vary from  $0^{\circ}$  up to  $180^{\circ}$ .

From the language of D. K., in the June number of this Journal, we would infer that the arch was *formed* near the zenith. This is undoubtedly the point at which most observers first noticed it; but to us, at this place, it appeared to arise from the northern horizon. Several other instances of a similar kind have been witnessed by us on former occasions, and other observers have given an account of having witnessed the same origination of arches. It, indeed, appears to us, probable that the "corona" and arches have a common origin, viz: luminous matter transported from the focus of power in the northern horizon. In the case of some of the arches, and in most of the coronas this is apparent to the senses; and in other cases, this sudden appearance and westward motion may arise from a peculiar condition of the nebulous matter under which it becomes visible.

7. Another remarkable circumstance in reference to the Aurora Borealis is the *gigantic scale on which it displays itself*. In many instances, indeed, its visible effects are witnessed alone in high polar latitudes, but not unfrequently they are seen as far south as within  $30^{\circ}$  degrees of the equator. And its extent in longitude is even greater than that in latitude. The aurora of Nov. 14th, 1837, was witnessed in this country from St. Louis, Mo., to Maine. and at the same time in England, and probably over the whole continent of Europe, thus extending nearly half way round the globe. And were it not for the interference of the superior light of the sun which renders it invisible during the day, it is highly probable that it would

sometimes be found in every degree of longitude, bathing, not only the north pole, but the whole northern hemisphere, as far as to the tropic of Cancer, in its fiery streams. It is worthy of inquiry whether the south pole may not sometimes be enveloped in a similar manner at the same time, and thus the whole globe invested by an aurora, which is visible only in the part lying in its shadow or where night exists, and in the regions of greatest activity, which are near the poles.

8. This leads to the remark that the aurora, contrary to the ordinary opinion, is *not a phenomenon developed by the darkness of the night, or the absence of the sun*. A sufficient number of cases are on record which go to prove its existence during day-light. A peculiar brilliancy in the northern sky contrasting it with the rest of the heavens, the bank of what seemed to be vapor or cirrus-cloud lying immovably in the same horizon, the existence of the aurora in all its splendor, with its streamers, arch and corona as soon as the evening twilight had departed, the melting away of the same into the superior morning twilight, and its existence on several successive nights, and shown by the disturbance of the magnetic needle as having continued during the day, all go to show that it is not confined to night and is perhaps in no way dependent on it. It has, however, variations in intensity and splendor, which it is believed, by many, to have some reference to the hour of the night. It is, for instance, sometimes very active, soon after the departure of twilight, at about 10 o'clock, P. M., at 1 or 2 o'clock, A. M., and about two hours before sunrise; whilst, during the intermediate periods, the lighting up of the sky is less intense. But as these phases are not entirely uniform, they may only prove that the aurora, from some unknown cause, is subject to alternate fits of greater or less splendor.—Neither is it dependent for its display upon the winter, according to the prevailing opinion. A careful comparison of a list of auroras occurring through a number of successive years, will show that as many take place during the summer as the winter months.

9. The *number*, which take place during each year seems not to be uniform. There have never less than two or three been witnessed, and not more than about twenty or thirty. But when we reflect, that in middle latitudes the light is often faint and evanescent, it would require constant attention to the heavens during every night to discover all, and then many may also take place during the day; so that we may safely infer their number as vastly greater than that just named as the highest, and we may not, perhaps, be far from the truth, when we say that it is probable that the aurora is a constant phenomenon attending our globe, seen only under favorable conditions, and when developed in its greater degrees of

intensity. This is proved by the fact that in the polar regions it almost constantly illuminates the sky, and thus renders the cheerlessness of the long absence of the sun the more tolerable.

The question whether there are periods or cycles of greater and less intensity: that is whether during a part of a century or during several centuries together the auroras occur in greater numbers and are characterized by greater splendor and magnitude, has not been satisfactorily answered. But the prevailing opinion among philosophers is that there are such cycles. The great magnificence of a number which have been particularly noticed and recorded within the last quarter of a century has favored the opinion that we have just passed through the period of maximum activity; and the silence of Grecian and Roman philosophers as well as of all antiquity, has been deemed sufficient proof of the almost entire absence of auroral phenomena, at least during the immense period in which Greece and Rome were the representatives of the learning and science of the world. With the exception of a few atmospheric phenomena mentioned by Aristotle, Seneca, and Pliny, such as "a bloody appearance of the heavens," that of "fire descending to the earth," and "a light seen in the night time equal to the brightness of day," which may be referred to the aurora borealis, "the whole of antiquity is absolutely silent on this subject." It is only within about a century and a half that we have frequent records of its occurrence. But this silence may be accounted for without the supposition that it was a less frequent and splendid phenomenon than now. The ancients knew absolutely nothing of those regions in which the aurora usually displays itself, their attention was but little directed to the noticing of and accounting for any atmospheric phenomena whatever in a rational manner, and they saw every thing, even the few auroras which might be witnessed by them in their particular regions, in the distorted light of their idolatrous systems, and no doubt looked upon them merely as prodigies.— Besides, if even in this age of enlightenment of the masses, nineteenth-twentieths of the people see only a few of the more splendid auroras, and permit the impression made by them soon to be effaced from their minds, and we are dependent upon the diligence of a few scientific men, who have devoted themselves to the observation of the heavens, for the records which we have, what could we expect else than that from the Grecians and Romans, possessed of fewer facilities and motives for recording and transmitting such information to future times, we should derive nothing definite or valuable upon this subject, though the heavens may always, as now, have been occasionally glowing with auroral light. And it is also not a little remarkable that the frequency and splendor of



auroras should have happened to increase so much, just as the night of ignorance was dispersed by the revival of learning through the agency of the art of printing, and the earth and sky were observed and questioned under the Baconian philosophy. Upon a view of the whole subject, then, we incline to the opinion that the supposition of the secular character of the aurora has no foundation in fact, and that all theories which attempt to account for it are worthless. The phenomenon has indeed its variations, just as the weather has, but it is believed they are confined comparatively within narrow bounds.

### *II. The disturbance of the Magnetic Needle.*

This is an interesting and important effect accompanying the aurora. It is, however, a variable effect. It is different for different places, even during the same display; amounting, in some localities, to as much as  $9^{\circ}$  or  $10^{\circ}$  in several hours, in others to less than  $1^{\circ}$ , and, as asserted by some observers, in others being equal to  $0^{\circ}$ . But however this may be, the disturbance of the magnetic needle, both in declination and dip, is a constant effect of the aurora. In almost all the instances observed with sufficient care the needle was caused to decline more eastward than westward of its mean position at other times. It is not much affected by the arch, or the diffused light, or the bank of luminous matter in the horizon; but it is very much disturbed by the crimson columns, and whenever the streamers are in a state of great activity. It thus gives evidence of the existence of an aurora, which cannot be seen on account of a clouded sky, or the light of day. It has even given information in the United States of an auroral display taking place in Europe, but of which no evidence was furnished to the eye.

*(Conclusion in our next.)*

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AN ELECTRICAL EXPLOSION.—On the 10th of August ult., at about  $9\frac{1}{2}$  o'clock, P. M., I witnessed what seemed to be the explosion of a cloud by electricity. Having, for a few moments, watched a very active thunder-cloud, for the purpose of knowing the precise direction it was taking, I was, immediately upon looking away, startled by an intense glare of light, which completely obliterated every thing from my sight, and which was in about a second afterwards, followed by such a thunder-crash as made me, momentarily, feel as if the heavens were about tumbling down. As soon as I could distinguish objects again, I looked up, and was surprised to find that the cloud, whose well-defined and rounded summit had just, a few seconds before, ranged with two bright stars, about  $30^{\circ}$

s. w. of the zenith, had now been spread out into a cirrus-cloud extending beyond the zenith. The electric discharge had taken place in that part of the cloud, and had apparently *exploded it* or carried it suddenly a great distance into the previously clear space.

## SONNET

TO MY SON ONE YEAR OLD.

MY SON! when first I took thee in mine arms,  
 And kiss'd thy cheek crimson'd with life's first blush,  
 I little knew the feelings that would gush  
 Spontaneous from the heart—against all harms  
 To guard thee, and avert what'er might crush  
 The infant blossom plac'd beneath my care  
 To foster, and for brighter realms prepare!  
 In one short year how dear hast thou become,  
 Or when thou laughest in thy merry glee,  
 Or when in tears that dry so speedily!  
 How hast thou tripled all the joys of home,  
 Almost forbidding thought from it to roam!  
 Heaven grant still many a happy year to thee,  
 Thy mother's pride, thy father's joy to be.

## THE VIOLET.

FROM THE GERMAN OF GOETHE.

A VIOLET stood in the mead,  
 Drooping, without an eye to heed;  
 It was a lovely flower.  
 There came a youthful shepherdess,  
 With light step, soul all cheerfulness,  
 Thither, thither  
 Unto the mead, and sang.

“Ah!” thought the violet, “were I  
 “The fairest flower beneath the sky  
 “For only one brief hour,  
 “Until, pluck'd by that lovely maid,  
 “And pale upon her bosom laid  
 “Tho' but, tho' but  
 “One-fourth of some brief hour.”

Alas! the maiden came indeed,  
 Deign'd not the violet to heed,  
 Trod down the lowly flower.  
 It sang and died, rejoicing still.  
 “And tho' I die, yet die I will  
 “By her, by her,  
 “And at her very feet.”

## WESTMINSTER ABBEY.

A vessel is speeding its way o'er the waters. Over its side a traveller listlessly bends, and gazes into the deep blue sea rolling beneath. The waves gently ripple against the ship's side, curling their crests into wreaths of foam, which sparkle in the sunlight with dazzling brilliancy. Every thing is beautiful and bright: and surely nothing can be farther from the thoughts of him, who is looking down upon all this, than Death. Yet, far below him, among the coral rocks, rest the bones of many who, too, at one time perhaps, looked upon those peaceful waters and recked not that Death lurked beneath their mirrored surface.

Where has not Death been? The world is his domain, where he has swayed his sable sceptre in all ages. The brow upon which the wrinkles of time have thickly gathered, as well as the head, around which the curling ringlets of youth cluster, are alike laid low in the dust by his merciless hand.

But, though Death thus relentlessly tears away from us those whom we hold dear, the mind clings strongly to their memory. The tendrils of our affections have twined about them; and tears unbidden start when fancy woos the images of "dear departed ones." We love and revere them still, and our feelings find vent in tokens of affection, bestowed upon their lifeless remains. And, although these last sad tributes no longer affect them, they afford us the melancholy pleasure of fondly thinking, that their spirits, hovering near, see and are satisfied.

The affectionate sister, at the return of Spring, anxiously watches the opening of the first rose-bud, that she may haste away, and scatter its fresh petals over the green hillock, that presses the bosom of a beloved brother. One raises a rough stone, upon which is cut, in rude characters, the initials of the deceased. Another, willing to let the world know how good a man has gone from their midst, emblazons upon a tablet of finer texture the virtues of him who rests beneath. The wealthy man raises a statue, and a Nation rears a pile, that towers to the clouds, under which the great, the good, the noble, and the mighty of her land are "gathered to their fathers."

Such is Westminster Abbey!—Look upon its spires pointing heavenwards, glittering in the reflection of the glorious sunbeams. How emblematic of the fame of those, whose last resting place they point out! Whilst the sunlight of their good deeds streams from their memories, we gaze upon their resplendent glory with reverential and admiring eyes; but, when the fires, which once burst upon us, have waned in their brightness, when the flame, which has not been kindled upon the altar

of Truth, has gone down in its socket, their names fade away from our sight, and sink forever in the sea of oblivion.

A mysterious building is that Abbey, that Palace of Death!

“A temple, shadowy with remembrances  
Of the majestic past!

Around it, the affections of a nation cluster, for even in England, good and great men are only discovered to be such, only begin to be beloved and revered, when their spirits are beyond praise or censure, and their bodies mingled with their kindred dust.

We enter its portals with bowed heads, and, with noiseless footstep, thread our way among the tombs of those, who, “being dead, yet speak.” Our eyes are cast upon the ground, and, in the tessellated pavement, are the rude marks of the chisel, exhibiting to our eyes characters that will soon need the kind offices of an Old Mortality, to rescue their subjects from oblivion. We direct our attention about us, down the long aisles, which stretch away from us on every side; and, in the array of statues, pillars and monuments, vainly endeavor to fix our gaze upon any single object. With reverence and awe, we lift our eyes to the fretted ceiling, where the delicate pillars shoot up with graceful curves in pointed arches. The folds of massy drapery and gorgeous banners cover the walls. The large arched windows admit through their stained glasses, the “dim religious light” of evening, which steals along the corridors, “in a path of dreamy lustre,” softening the bold projections, and melting away into the gloom of the recesses beyond. We gaze upon all—below us, around us, above us—then with hearts too full for utterance, sink at the base of a monument; and, with head reclined upon the marble, muse upon the Past, the Present and the Future, here so vividly brought before our minds.

Before us pass, in ghostly array, the grim, gaunt forms of mail-clad warriors, time-honored sages and ladies fair, who thronged the courts of Sebert and his successors, and whose ashes now rest with his, under the monument of his zeal and attachment for his holy religion. All traces of the Present vanish from our sight; and we are amongst another race of beings. The iron-shod heel rings upon the stone pavement, the raised visor reveals the stern unyielding front that quails not, when dangers, in demon shapes, threaten to overwhelm—the gauntleted hand rests upon the hilt of the broad falchion, ready at the moment to unsheathe, either in the cause of honor, to protect injured innocence and oppressed virtue, or cleave to the shoulders the haughty Saracen, whose blood-red flag waves from the battlements of Salem’s sacred walls. The Lion Heart is there, rushing on with the maddened fury of

the whirlwind, hewing himself a way through the mass of his foes, all reeking with gore, which gushes forth at every stroke of his ponderous battle axe. \* \* \* \* \*

Now the scene shifts, and, what *we* would call a more enlightened generation fills the "places which once knew their fathers." The Philosopher is sitting in his study; and, whilst his own mind is bursting the bonds which heretofore fettered it, he is opening up a way to Truth, upheaving the foundations of Error, clearing away every obstruction that might impede the progress of others, and giving to Science the *Novum Organum*, by which she has ever since been guided. The Statesman is standing among the assembled powers of the realm, who watch, as from an oracle, the words of sage wisdom which drop from his lips. And then, from afar, come swelling the notes of the Swan of Avon—sounds that gain in sweetness and force, the farther they roll from the source whence they sprang. \* \* \* \* \*

What mean the sounds which now burst upon our ears? The heavy tolling of the deep-toned bell, and the sullen, measured roar of distant cannon! What mean the habiliments of wo and the mourners going about the streets? "Know ye not, that there is a Prince and a great man fallen this day in Israel!" The silver cord has been loosed, and they are bearing him to his long home, the tomb of the Kings, the grey-old Abbey. Its massy portals open wide to receive the dust of him, who, but a few years before, had the crown placed upon his head within its walls. Mark the pomp, the palling pageantry, and then, for a moment, turn with us to a different scene, which is transpiring in another part of this same realm. Before the door of a humble cottage are assembled a few sturdy peasants, to perform the last sad act of this world, for one to whom they had looked up as to a father. No empty parade mocks the stroke of Death; and when the hour arrives, a grey-headed old man rises and places himself in front of the body. All heads are uncovered, and the old man, whilst his thin locks are moved by the breeze, raises his clasped hands and utters a short but feeling prayer. The plain deal coffin is raised, and borne along at the head of the little procession to the village church-yard. They stand around the grave, and then

"They lay his silver temples in their last repose."

Silence reigns around. The old man approaches the grave. With one hand he removes his hat from his brow, the other he raises, and bending forward, whilst a tear starting from his eye rolls down his furrowed cheek, his thin lips move, and he breathes, "Dust thou art, and unto dust thou shalt return." The clods roll upon the coffin—he turns away—all

follow, save those who remain to fill up the grave. Their duty is soon accomplished, and they too depart. Now all have gone. All? no, not all! A poor orphan lad, who had been saved from death, and reared by that kind old man whose burial we have witnessed, remains. Seated upon a stone, he had watched with unuttered anguish, the filling of the grave. He had heard the sound of the spade, smoothing over the top, and, when all had departed, he threw himself upon the mound and mourned in the bitterness of his soul, that he should no longer have one to love him as his *poor old father* had done. But who mourns at the tomb of the King? Do the scalding tears of grief fall upon his tombstone? Alas, no! We stand and gaze upon the splendid monument, the varied tracery, and rich hangings, and can almost fancy a hand writing above, in letters of fire, "Vanity of vanities!" \* \* \* \*

Again, from afar comes noise and tumult. Again the bells chime, but the death-knell has changed to the merry peal. Again the cannons roar, but the minute gun is succeeded by quick successive discharges. And then is borne along upon the breeze, faintly at first, but growing stronger, the cry, "God save the King!" A nation has found her Osiris, and the mourning for the lost is changed into rejoicings for the found. Again the gates are thrown wide open, and again the crowd of the great ones of the earth fill the Abbey, which, as if in sympathy with the occasion, lays off its "cathedral look," and hides its sombre walls beneath the folds of smiling tapestry.

What a contrast! There rises the monument of a King yet moist with a nation's tears, there stands the coronation chair in which his successor is receiving on his fevered brow the diadem, that once encircled *his brow*, now cold in death. \* \* \* \*

And now, leaving the Past and the Present, we are borne irresistibly on to the Future. Its dark mysterious depths cannot conceal from us, that those who shall hereafter move upon the stage of existence, will tread lightly over the spot, consecrated by the relics of power, wisdom and genius. In fancy we can see the verger, many years hence, pointing the visitor's eye to the names of those, of whom he has learned that they were great and good men, who lived long, long ago. And how the stranger's eye kindles, when the names of Chaucer, Milton, Shakespeare, Dryden, Goldsmith, Addison fall upon his ear; and how he feels a sacred awe stealing over him, when he realizes that he is indeed standing over the dust of men so great, so good!

But who cannot look forward to the time, when even *their* names may cease to be mentioned, or will only meet the eye of the antiquary, on the pages of old dusty folios? The tooth of Time may gnaw away

what now renders the Abbey beautiful and grand, and leave standing, nothing, but the crumbling walls, from which the owl will hoot, and among which ghosts will hold their midnight orgies. And then the firm stone will moulder away and away, until not one block shall remain upon another, where now, the *already* old Abbey rears its lofty turrets. Standing among the ruins of Petra and gazing upon its wonders we exclaim, where now is human glory? The spirit of twenty centuries of death-like silence reviving moans through the oriels of its crumbling temples, "Passing away." The lofty Pyramids, around whose tops their builders fondly hoped Eternity would play, must perish. A broken corner here, a crumbling mass there, utter slowly but surely, "Passing away." And the Abbey—though prince and people strive to the last to preserve this great Mausoleum, this national Urn of national greatness, the hollow winds, that sweep along the shattered fretwork of its pointed arches, mourn, "Passing away." There is written upon the fleeting clouds of heaven—upon the deep waters—upon the giants of the forest—upon the everlasting hills—upon all things earthly—upon Man himself, "Passing away."—And soon comes the time, when

"The cloud-capped towers, the gorgeous palaces,  
The solemn temples, the great globe itself,  
Yea, all which it inherits, shall dissolve,  
And, like the baseless fabric of a vision,  
Leave not a wreck behind!"

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COLLEGE RECOLLECTIONS.

Whether college recollections are profitable or not to the reader, may be a question not easily settled. To those who were actors in them, they are often beneficial, as the means of impressing deeply upon their minds how little gratification grows out of the best contrived and most clever trick. Notwithstanding the extraordinary tact which teachers of youth acquire in ascertaining character, they are often deceived. The wild and reckless dare-devil is not always the most tricky or troublesome. There are some sober-sided grave-faced chaps, who have running through them an under-current of fun and frolic that seems to be inexhaustible. These are the fellows who will maintain a respectable standing in their classes and yet have a hand in almost all the mischief that is disturbing the College or neighborhood. They will retire to rest at the proper hour and rise again to run through town and disturb the peaceful slumbers of their unoffending neighbors. Many of their pranks could be told, if the narration, by any construction, could be made use-

ful or entertaining. We will select one out of many on account of its singularity, and because it was productive of no serious injury, except to the parties engaged. There were two young men, unlike in other respects, but agreeing in this, that they were much annoyed by the bell which rang them out of bed at an hour in the morning most delightful for repose. How to interrupt the everlasting ding-dong over their heads, they knew not. The bell was in the belfry which formed the cupola on the College. The entrance to the belfry was practicable through two doors at the opposite ends of the College, one of which was never unlocked, and the key to the other was safely guarded by the faithful janitor. The chums often speculated upon the feasibility of an attempt on the bell, but all their speculations resulted in nothing. At one time, they thought of daring an ascent over the eaves of the roof, as they lodged on the fourth story. At another they proposed to enter the attic whilst the janitor was ringing the last evening bell, and then effect their purpose at leisure. But two obstacles were in the way: first they would be locked in for the night and their escape would be doubtful until the next evening, and they prided themselves much in not being detected—secondly, they were too conscientious to do injury to the building which did not belong to them. They resolved not to attempt any thing unless it could be done without injuring any one in person, or property, or reputation; for, whilst they loved a joke, they could not enjoy one at the expense of their neighbors. Besides, the beauty of the whole enterprise depended upon the accomplishment of it without detection. After deliberating a long time, at length L. said to P., “I have it—we will stop that bell this very night, and in the morning we will have a long snooze.” “How will you accomplish your purpose?” responded P. “When Kooney (the janitor) rings the first bell in the evening he leaves the keys in the door and goes down stairs. Whilst he is gone, I will take the keys and unlock the door on the opposite side, and to-night we will turn up the bell and fill it with water, which, at this season, (January,) will freeze into thick ice, and to-morrow the bell will swing but not sound.” “Capital!” exclaimed P. “Kooney will think the bell is bewitched!” According to this arrangement the door was unlocked, and the key, unobserved, replaced. About 12 midnight, the two chums groped their way through the College garret, thumping their heads against the rafters ever and anon, until they discovered the stairs leading to the cupola. After they had made every thing safe, they turned up the bell, and after propping, filled it with water, and then silently retired to their room, chuckling at the idea of the long morning’s sleep. Vain expectation! indulged only to disappoint. The morning came, and with it



the hated *ding-dong* of the bell. "Holla, L.!" exclaimed P., "what is the matter? I reckon that old bell leaks." The truth is that the first pull of the rope turned the bell with such a jerk that ice and water fell on the platform and left the clapper free to perform its wonted work.

The first failure was not sufficient to damp the ardor of resolute spirits. Disappointment only stimulated effort. The door was yet unlocked. The enterprize and failure were known only to the two chums. A new plan was suggested. If the clapper were unscrewed there could be no ringing. The next night, bitter cold and piercing, the clapper was attacked. All the instruments employed were metal, freezing to the fingers wherever they touched. At length after much labor and no little suffering, the bell swung free without a clapper. Now we have you, old fellow, thought they, you will no more disturb us. There lie under that board until you are found. We can now sleep without the disturbance of your perpetual clatter.—"I say, P. what will Kooney think, ha, ha, ha!—*pull—pull*, but no answer from the old bell. Won't he be filled with wonderment?"

With these reflections they retired to rest. "Sweet is the sleep of the laboring man whether he eat little or much." The chums realized the truth of the proverb, and slept undisturbed until morning, when, lo! their ears were saluted by the same sounds of the bell somewhat modified. They could hardly believe the evidence of their ears. Instead of the usual long pull and swing, calling the shivering students in mournful strains from their beds, they now heard short, rapid and shrill tones, as if the bell or the ringer were in a passion. The mystery was speedily unravelled. Kooney, with his accustomed gravity, pulled at the bell-rope, and when, to his amazement, there was no responsive sound, he very naturally ascended to the belfry, and ascertaining that the clapper had disappeared, reported to the resident Professor. No other remedy occurring at the time, the janitor was ordered forthwith to use a hammer, which he applied with an energy suited to the extraordinary emergency. This accounted for the unusual tones of the bell. Here, then, was the conclusion of the whole enterprize. Much labor, many hard thumps, and no little suffering was all they had for their pains. Poor recompense, some one will say, for their fun. They themselves thought so, and determined that this should be their last enterprize into the forbidden region of transgression. They felt that they were completely foiled in their efforts, and, what was a much more serious matter, that they had done wrong. They had invaded and injured, without provocation, the property of another, and, in violation of their obligation assumed when they were matriculated, they had seriously impaired the

discipline of the institution. It is gratifying to know that the chums secured the good will of their instructors, graduated in due time without accident or embarrassment, and are now occupying honorable and useful positions in society.

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## HYDROPATHY.

While improvements in the arts and sciences are so rapidly making, and discoveries of new facts and new applications of those already known are daily promulgated, it is not strange that men, actuated by a morbid desire for fame or wealth, or with their judgment perverted by an unrestrained imagination, should form visionary theories, and apply such opinions to practical life. Such being the tendency of the age, it becomes every one to exercise a judicious scepticism in reference to matters of startling pretension.

To many the word "reform" is a battle cry of no ordinary character. Let a banner with this inscription be raised, whether against the orthodox religious, moral, social or scientific creed, and you have an army of the most incongruous character, uniting only in opposition to all existing views, ready and anxious to gird on their swords, prepared to battle against every thing approaching *conservatism*.

*Water* has been recognized as a curative agent by every member of the medical profession, from the days of Hippocrates, the great father of medicine, to the present time. In the year 1797, an elaborate treatise upon the remedial powers of cold water was published in England by Dr. Currie, of Liverpool, and looking back from this date, we find the medical works interspersed with laudatory notices of this sanative agent. This fact is mentioned to show the ignorant presumption of those who claim for Preissnitz the credit of having first discovered that water possessed any efficacy as a curative means. It frequently happens that an ignorant person, having accidentally become aware of some plain truth, well known to every intelligent individual, acquires much credit for depth and originality of thought by pompously announcing this fact and expressing with quixotic ardor his determination to defend his opinion against the assaults of the world. The world smiles at such ignorant enthusiasm, but disputes not. But when such a one becomes emboldened by perceiving that *his* opinion exercises its legitimate influence upon the actions of men and attempts to give it an undue prominence, making it the sole guide to men's actions, thereby setting aside as worthless all predetermined fact, it becomes necessary to show to what extent truth belongs to such an opinion.

Thus it has been with what is denominated Hydropathy, or the water cure. Priessnitz, a Silesian peasant, with but little education, suddenly conceived the brilliant idea, that water is the panacea for man's ailments. The enunciation of this simple view elicits a sympathetic response from those kindred minds who suppose that truth would rather reward the dreams of fanatical enthusiasts, than the patient and laborious investigations of the thoughtful and scientific. To those who would with one blow dissolve our present political organization, and render obsolete the holy institution of matrimony, ultra opinions recommend themselves with peculiar force. Thus among the disciples of Fourier we find some of the most ardent admirers of Hydropathy, who will tell you with the utmost complacency, that the water-cure is destined to work as complete a revolution in the science of medicine as their system will upon the political and social opinions of the world. This is, I think, indisputably true.

But in what does the hydropathic treatment consist? Premising that there is little or no discrimination exercised in regard to the character of the disease—this, however, is unnecessary, as the water cures “every ill to which flesh is heir”—the patient is subjected to a series of baths, douches, sweatings, and in addition, he is required to drink a large quantity of water. A lady informed me she drank twenty-three glasses-full daily. The sweating process is somewhat peculiar: the patient being wrapped in a sheet wrung out of cold water, frequently ice-water, is then covered with many blankets, so as to retain all the animal heat of the body. After profuse perspiration for two or three hours, the patient plunges into a bath varying in temperature from  $45^{\circ}$  to  $55^{\circ}$  Fah. The sweating is frequently undergone twice and sometimes three times a day, with various baths, douches, &c. &c., filling up the intermediate time, and charmingly varying the monotony of the system. Such is the hydropathic treatment proper. Let us examine the concomitant circumstances connected with the treatment, and see what effect they have had in restoring to health those who have derived benefit from a residence at a hydropathic institute.

It is generally located in some healthy mountain region, where the air is pure; frequently some spring, to which valetudinarians have for years been sent, by their physicians, to recruit their shattered health, is turned into a hydropathic establishment. After having sweated, bathed and drunk several glasses of water, the patient is made to walk a long distance, frequently five or six miles, and then he breakfasts upon milk, bread, and butter, with the fruits of the season: another bath and a walk until dinner, which consists of vegetables, simply-cooked meat and fruit.—

The same routine occurs between dinner and supper, which latter is identical with the breakfast. Let us glance at some of the patients we find around us. See the dyspeptic merchant or professional man. Inquire into his previous habits of life. We see him shut up in counting-room or office, taking no exercise, eating heartily and hastily, supping late, with wines to assist impaired digestion, rising late in the morning with no appetite, and going to his business with headache and lassitude. By this course of life his nervous system becomes debilitated, and dyspepsia, with its train of evils, marks him as its victim. Can we not account for the restoration of such a one to health, under the mode of life and diet of a hydropathic institute, without the miraculous agency of water? We should rather say he is cured, notwithstanding the barbarous mis-use of one of our greatest blessings, and, if properly used, one of our most efficacious remedies. Can we wonder that the intellectual voluptuary, Bulwer, was greatly benefited by this change of life, and rather than acknowledge, that his previous life had been in defiance of nature's laws, attributed, in his mawkish and maudlin "confessions," the benefit he received to water alone.

There are many persons, with much pretension to learning, who kindly advise the physician to make himself acquainted with all the different systems of empiricism, and practice each and all as occasion may offer. To these self-constituted advisers, I would say, "your investigations are rarely of sufficient depth to give much weight to your opinions, for had you examined the principles of the healing art, you would have found that, so far as these systems are consistent with truth, they belong to the legitimate profession." A grain of truth is filched from the labors of some patient investigator, and so surrounded with error as scarcely to be recognizable; yet when seen, and its restoration to the owner attempted, we are gravely told our opinions have been modified by their visionary theories. To such men Thomas Hood's sick duck gives a sufficient answer. He went to a hydropathic dispensary, and after helping himself to a sitz-bath, and finding it refreshing, took an all-over-head-bath and came up to the surface. He raised himself, clapped his wings, and was expected to shout "Priessnitz forever;" but instead of this he only cried, "quack! quack! quack!"

However beautiful in theory the curing of diseases by a simple remedial agent may be, it does not appear to be in accordance with the principles of bounteous nature, to have but one article by which we may relieve the sufferings of humanity. The profession will continue to pursue its path, gathering remedial agents from the animal, vegetable, and mineral kingdoms, and applying these according to well established

principles, undismayed by the rantings of homeopathic immaterialism, or the boastings of humoral hydropathy, not forgetting that the efficacy of the judicious use of cold water has been insisted upon, by the lights of the profession, from the earliest dawning of our beloved science.

*Gettysburg, Pa.*

C. A. C.

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EXTRACTS FROM A LECTURE ON TRUTH.

A CONTRIBUTION IN AID OF EPISTLES TO STUDENTS.

Truth requires no definition. We need not say that it is conformity to the nature of things, or employ any other phraseology to designate its characteristics. Such is the human constitution—so has God made us, that we do violence to our nature, if we do not seek after, acquire and apply it. The history of philosophy is a history of our race, seeking after truth, and the greatest philosophers in ancient times, such as Socrates and Cicero, were those who were most ardent, sincere in the search, and most honest in the application of it. What is it that has rendered illustrious men of ancient and modern times, given them not an ephemeral but everlasting renown? Is it not their love of truth and the toils that they endured to obtain it? Do not the volumes, which record it, triumph over all changes, and command an abiding and elevated position in the estimation of those, who occupy the chief places in the departments of human life? An unparalleled teacher, on a great occasion, when he witnessed a good confession, declared that his mission was sacred to the interests of truth, and with an extraordinary sagacity he resolves whatever of moral excellence is developed by man, under the tuition of insipid communications, to the love of truth, and whatever of impurity and crime may gather upon the rejection of the accredited messages of heaven, to a hatred of it. Fortified, in our estimate of its value, by authority so unquestionable, we proceed to remark that truth is accessible to us. We have faculties to acquire it, facilities for the use of them, and it is poured with a most munificent hand, all around us, and opened to the perception of all, who dwell on the earth. We can approach matter and mind, we can examine and learn what are their properties; we can penetrate into their interior and expose their recondite history; we can trace their relations and mark the phenomena which they exhibit, whether occupying their primitive position or assuming new ones under our direction. We can trace effects to their causes, and announce the results of agents with which we have familiarized ourselves. Even mind itself, though so different from that

with which we are most intimate, so inscrutable in its essence and subtle and rapid in its phases, that it requires a most practiced eye to perceive and to follow it, nevertheless is compelled to yield its treasures to enrich our conceptions. Truth in the department of morals is susceptible of evolution by the instrumentality of dialectics, and still more within our reach, through the medium of our sacred books. The Creator of the Universe is revealed to our vision through a double medium : he is apparent in the glories of his creation, by which we are surrounded, and of which we are a most important and instructive part, and in the compositions of those extraordinary men in whose mental operations a supernatural energy mingled and worked truths, such as God alone could teach. It is not important that we should advert to truth in various other forms in which it is accessible to man. It would, too, be a work of supererogation to attempt the proof of the capacity of man to master it. Though by no means disposed to advocate the Helvetic theory of the equality of man considered intellectually, we do claim for our race, in all cases in which, through some inexplicable derangement of the cerebral structure, a drivelling idiocy has not been entailed, sufficient rationality or mental capacity to grasp and hold, if not with Newtonian energy, yet with some, the floating verities which are circling continually around us.

That the truths, presented to us in the exact sciences, may more easily glide into some minds than others, cannot be questioned by those who have learned that such men have lived as Newton and Pascal, who intuitively obtained what others, not unknown to fame, have been compelled to study ; but that any one is so positively obtuse, that a mathematical idea can never enter his pericranium, we are slow to believe. The same may be said of other studies. Whatever is level to our capacity, we may learn. We were made for truth ; and though it may sometimes seem to flee from us, we may win it back by proper appliances.

The question, *why am I here?*—one more interesting than which it would not be easy to ask, and which never emanated from a mouth that was not guided by reason—a question, which, when originated with any thing like an approach to a sense of its importance, involves a mental condition of high promise and deserving of the attention of all who profess a creditable philanthropy, is answered by the reply, you are here, surrounded by the proofs of the divine existence and perfections, with truth in multifarious aspects inviting your attention, with pre-eminent physical and mental endowments, that you may imbue your minds with it, put forth in suitable exercises the energies of your souls, cultivate moral purity through the sanctifying power of religion, and render happy

your fellow beings by the communication of your treasures whether they be intellectual, moral or physical.

To search for truth, to obtain it, to apply it, to diffuse it—these are the great task imposed by a wise Creator on a richly endowed creature. This is our birth-right. Unworthy is he of the name man—unworthy the privileges of civilization and religion, whose heart does not beat high in resolves to fulfill his elevated destiny and to achieve victories over ignorance, sensuality and sin. At the shrine then of truth should we be assiduous worshippers, and for it should we search as for hid treasures. We may think with the ancients that it is in the bottom of a well, but if we appreciate properly its importance, we will be willing to descend and to obtain it.

I hold him to be a man and no other, however strong his pretensions from his corporeal organization, who carries with him a conviction, that in the economy of life he is bound by every motive strong and holy, to expend his energies, not in sensuality and excess, but in the pursuit of truth. Wherever he can get it, he should go. He ought not to think it too laborious to search for it in distant lands, if it cannot be procured at home. It was not unusual in an earlier period of the world for the friends of truth to go abroad into distant lands in search of it, to travel amongst the nations to learn their wisdom, and to devote years to labors of this kind.

(*To be continued.*)

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PENNSYLVANIA COLLEGE. NO. II.

Having in a former number given some account of the origin and progress of Pennsylvania College, we propose now to present its claims to public favor, to examine its interior economy, to ascertain what are the advantages it offers. It will then be in the power of the community to determine whether it is deserving of patronage. It asks for support on no other ground than real merit. The convenient edifice in which the students are accommodated, the extensive course of study pursued, the ample corps of instructors, the respectable and increasing number of students, may all in themselves fail to enlist confidence, or may, at least, be regarded as of collateral importance; there are other and higher interests which, if not subserved, may leave it without sufficient recommendation to an enlightened and Christian public.

The College is located in an extremely healthy region. The atmosphere is pure and salubrious. The climate operates favorably upon those who come from sections of the country less blessed with health. Weakness of body has, sometimes, here given place to strength and vigor. For

the development of the physical frame, Gettysburg may be regarded as peculiarly eligible. This is a great recommendation and is worthy the attention of those living in large cities, who desire to educate their sons in the country, and consider it important that when they return they should bring with them, not only well disciplined minds, but likewise bodies elastic with health, and prepared to endure the labors of life. It is recommended by the cheapness of tuition, boarding, &c. The expenses here are much less than those incurred in many other institutions. The price of tuition is not so high as in many Academies in which the advantages are fewer. It need not cost a student for necessary expenses more than one hundred and thirty dollars a year, and an individual of economical habits frequently expends less.

The course of instruction is thorough and extensive. It provides for a business, literary and scientific education. The object aimed at is to teach the student the value of learning, to make accurate scholars, to send forth strong men, thoroughly furnished for the duties of life. Instruction is given by recitations from text books, accompanied with theoretical and experimental lectures. The diligence of the student is tested by rigid daily examination; the character of each recitation is recorded and the results communicated to parents or guardians in periodical reports. Defective students are not permitted to proceed to a higher class, whilst those, who are indolent, are transferred to a lower one. In the languages, the unsuspended study of the Grammar with a view to the perfect comprehension and retention of its principles, the study of the text without any aid from translations, the complete analysis of all that is read, and the collateral subjects of History, Archæology, of Æsthetics and Ethics, are all embraced. It is intended that a fondness for classical literature should be created—a taste formed, which will lead to the extensive study of the immortal authors of Greece and Rome.—The same course is pursued in the study of the Mathematics. Many branches, too, are in a manner pleasant as well as useful. The Professor of Geology, in addition to other methods of teaching the science, accompanies his class in excursions to favorable positions for examining the structure of the earth and the various phases it assumes. Mineralogy and Botany are taught in the same way, so that while recreation is afforded, the mind acquires facts and is prepared to carry forward its investigations; the student learns not merely the names of things, but he becomes capable of distinguishing them; he is enabled to analyze the plants he meets in his walks, and in his travels he can recognize the geological features of the country. A course of lectures on Anatomy and Physiology is given to the more advanced classes. The anatomical pre-



parations, natural and artificial, in the possession of the Lecturer, enable him to render the instruction highly valuable. The pupil becomes acquainted with the mechanism and functions of his frame, and is qualified to follow intelligently the reasonings which have been based on the structure of the human body in regard to the existence and attributes of a Supreme First Cause. The introduction of the study of Natural History into the course is perhaps an advantage which few institutions enjoy. The Lecturer on Zoology seeks to excite an interest and to infuse a love among the students for this attractive branch of study. That the effort has not been unsuccessful is shown in the valuable *Museum* secured chiefly through the industry of the students, and the flourishing condition of the Linnæan Association, the fundamental object of which is the cultivation of an acquaintance with animated nature. The facilities for the acquisition of the German language is another admirable feature in the arrangements of this institution. Perhaps there is no College in the country more favorable for those who desire to unlock the treasures, of which this noble language is the key. The study is carried throughout the course, from the lowest class in the Preparatory Department to the highest in the College proper. Although an optional study, it is pursued by a large number of students with great spirit, and an effort is made by practical exercises to prepare the young men to converse in this copious language. As Pennsylvania College was organized with a direct reference to the wants of the German population, its claims, therefore, upon Germans are strong. There were many and excellent Seminaries of learning in our country before its establishment, but there was no one of this kind to which Germans and descendants of Germans could look and say it was designed for their special benefit.

The government of the students is parental, mild and affectionate, but firm and energetic. Special cases excepted, they are all required to lodge in the College edifice, under the immediate supervision of the Faculty, who endeavor to exercise a constant guardianship over the whole establishment. The Professors consider themselves charged with the moral and religious as well as the intellectual culture of those committed to their care, and do put forth faithful efforts for their best interests. Their aim is to fix in the minds and hearts of their pupils those great and controlling truths of revelation, which influence the happiness and shape the character of man for time and eternity. A familiar acquaintance with the Scriptures and a thorough knowledge of the Christian system, together with the cultivation of the moral affections, are deemed an important part of a liberal education. Lectures on the evidences of Natural and Revealed Religion, and on the Ethics of Christi-

anity are delivered by the President. The study of the New Testament in the original Greek forms a regular part of the course. It is an exegetical exercise, designed to promote an acquaintance not merely with the peculiar diction of the New Testament, but likewise with the truths contained in it; its influence cannot but be favorable to enlightened views of Christianity and holy living. Prayers are attended in the College Chapel every morning and evening, with the reading of the Scriptures, one of the Faculty officiating. The students are all required to attend worship on the Sabbath in the College Church, unless parents expressly desire that they should attend preaching with some other denomination in the place. On the afternoon of the Lord's day, they also attend a Biblical recitation in the College edifice, conducted by one of the Professors. Voluntary meetings for prayer and praise are held during the week, which furnish an additional means for spiritual improvement. Pennsylvania College may emphatically be called a Christian Institution. A considerable number of the students are pious, and from many of its apartments the voice of prayer ascends daily before the mercy seat. Those, who enter its walls without a knowledge of God, find themselves surrounded by disciples of Christ, who warn and instruct them, and sometimes not in vain. Some who have come to seek knowledge, such as man needs in this life, have found the pearl of great price, have returned to tell those interested in their welfare, that they have found a hope of salvation through the mercy of the Saviour. It is true, that in every College there are corrupt young men, but their power must be gently checked, when there are so many and such counter influences constantly at work. If an individual of decidedly vicious character is admitted into the institution, he may, without much difficulty, discover means of indulging his inclination, and may find in secret a companion or two of kindred spirit. But if a young man frequent this seat of learning for the purpose of improving in knowledge and piety, there need be no apprehension entertained that he will be drawn from the path of rectitude and virtue. If there is one object nearer the hearts of those, who preside over its interests than another, it is that the mind here educated may be sanctified; that it may catch its inspirations from the word of God and be guided by its life-giving precepts. If there is one petition presented at the throne of Grace with greater fervor than another, it is that the youth here gathered may be made savingly acquainted with the Redeemer, that in the morning of life, they may gird on the whole armor of God, and consecrate their powers, their faculties, their energies, their youthful hearts, to the service of their Maker.

#### PENNSYLVANIA COLLEGE.

The *Annual Commencement* of Pennsylvania College will occur on Thursday morning, 16th inst., in Christ's Church. The exercises will commence at 9 o'clock. The friends of the Institution and the public generally are invited to attend.

D. GILBERT,  
*Sec'y of the Board of Trustees.*

#### ALUMNI ASSOCIATION.

The Annual Address before the Alumni of Pennsylvania College will be delivered in the College Church on the evening preceding the Annual Commencement, *Wednesday, September 15th*, at 7 o'clock, by A. R. STEVENSON, Esq., of Gettysburg.

✍ The members of the Association will meet for the transaction of business at 2 o'clock, p. m., in the lower story of the Linnæan edifice. A punctual attendance is earnestly desired.

M. L. STOEVER, *Secretary.*

#### LITERARY NOTICE.

The Annual Address before the Philomathæan and Phrenakosmian Societies of Pennsylvania College will be delivered on *Wednesday, the 15th of September next*, at 3 o'clock, p. m., in Christ's Church, Gettysburg, by ROBERT TYLER, Esq., of Philadelphia. The public are respectfully invited to attend.

*Joint Committee of the Societies.*

#### LINNÆAN HALL.

The Linnæan Hall of Pennsylvania College will be dedicated on *Tuesday afternoon, the 14th inst.*, at 3 o'clock, and an address, appropriate to the occasion, delivered by JOHN G. MORRIS, D. D., President of the Association. The friends of science and the public generally are invited to attend.

*Committee of Arrangements.*

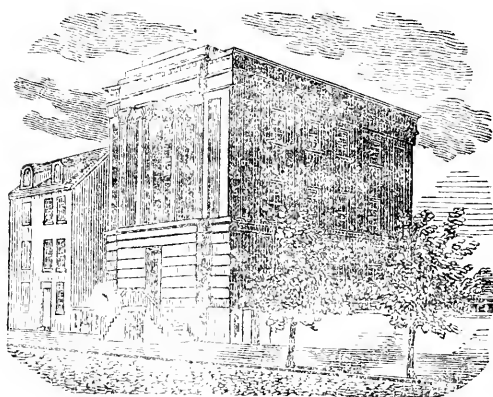
#### THEOLOGICAL SEMINARY.

The Alumni of the Theological Seminary will celebrate their Anniversary on Tuesday evening, 14th inst., on which occasion a discourse will be delivered by Rev. F. W. Conrad, of Hagerstown, Md.

C. A. HAY, *Secretary.*

# Pennsylvania Medical College,

Filbert above Eleventh street, Philadelphia.



## Medical Faculty at Philadelphia.

- W. W. DARRACH, M. D.—*Practical Pathology and Practice of Medicine.*  
 JOHN WILT BANK, M. D.—*Practical Observations on the Diseases of women and children.*  
 H. S. PATTERSON, M. D.—*Practical Botanical Medicine.*  
 W. R. GRAY, M. D.—*Practical Anatomy and Physiology.*  
 D. GILBERT, M. D.—*Practical Principles and Principles of Surgery.*  
 W. L. AYER, M. D.—*Practical Medical Jurisprudence.*  
 ARCH. F. McEVY, M. D.—*Demonstration of Anatomy.*

The Lectures will commence on Monday Nov. 1st and continue  
 most of the year.

## Receipts during August

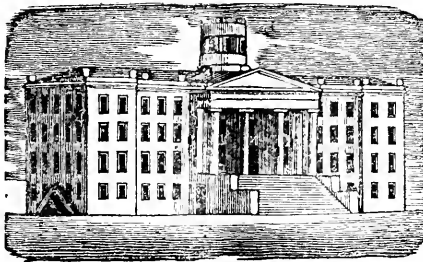
Rev. Stephen J. Mealy, Canton O	\$1 00	Vol 3.
Wm. M. L. ... .. Pa	2 00	" 2 & 3.
Dr. J. P. Herster, Pottsville, Pa.	3 00	" 3, 4 & 5.
Dr. E. Bishop, Smithsburg, Md	1 00	" 3.
Dr. James William Johnson, Md	1 00	" 3.
M. Buchler, Philadelphia, Pa.	2 00	" 3 & 4
Female Literary Society, Langrove, Pa	1 00	" 3.
William Bowler	1 00	" 2.
George Wheeler	1 00	" 3.
W. Hoop, Smithsburg, Md	1 00	" 3.
Charles F. Probst, Smithsburg, Md.	2 00	" 2 & 3.
John ... .. Pa	1 00	" 2.
John ... .. Pa	1 00	" 3.
John E. Colver, ... .. Pa.	1 00	" 3.
Miss Sarah Whitworth, Baltimore Md	1 00	" 3.
H. C. Cline, Gettysburg, Pa.	1 00	" 3.
John W. ... .. Pa	1 00	" 3.

THE

**LITERARY RECORD AND JOURNAL**

Of the Linnaean Association of Pennsylvania College.

OCTOBER, 1847.



CONDUCTED

By a Committee of the Association.

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THE LITERARY  
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VOL. III.

OCTOBER, 1847.

No. 12.

THE AURORA BOREALIS.

III. *Its altitude.*

Concerning this point there have been many conflicting opinions.—Some have placed it at no greater elevation than that of the cirrus-cloud, others in the upper strata of the atmosphere, and others without its limits, at an elevation varying from 60 to 200 and even several thousand miles! But to whatever conclusion we may come in reference to its altitude in middle and low latitudes, it is generally conceded that in the polar regions it is comparatively low, and that it gains elevation as it progresses toward the equator. At least such is the universal opinion of the natives of those regions, which are its birth-place, and with this agree nearly all the navigators and men of science, who have spent several winters there, and who have consequently had the most ample opportunities of becoming fully acquainted with its most important features. “Mr. Trevelyan observed, that in the Faroe and the Shetland Islands, it was often seen not more than forty or fifty feet above the sea, and learned that in both countries it is frequently heard. One person had perceived in it, when red, an electrical smell.” (Sill. Jour. vol. xxxv-151.) “Lieut. Hood, at Fort Enterprise, found the aurora in one instance to be only  $2\frac{1}{2}$  miles high.” (Ibid p. 155.) And Baron Von Wrangell estimates it to be so low in the polar seas of Siberia, as to be influenced by the wind. (See Wrangell’s polar expedition, p. 302.) That it should have a greater elevation in low latitudes than in high is, upon the supposition that it is within our atmosphere at least near the pole, perfectly consistent with the law of bodies moving through a resisting medium of variable density; the motion will be deflected towards the point of least resistance. This takes for granted that it consists in the transfer of luminous matter, or the exertion of force from the polar towards the equatorial regions. The various estimates of its altitude, which have been made, have all been based upon, what was at least, an imperfect paralax

of some portion of the arch or corona, and upon the supposition of the altitude and place being unchangeable for a very appreciable portion of time. Two observers are, for instance, on the same meridian, and at the same moment, notice the distance of the northern or southern edge of the highest part of the arch, from some particular star. The difference of this distance in degrees is the parallax, or angle which is subtended by the arc of the meridian comprehended between the places of the observers. This being known, the perpendicular height is easily calculated by the rules of Plane Trigonometry. If now the corresponding observations be accurately made, and at the same instant of time, the parallax thus deduced must give the correct height. But it is safe to say that no parallax hitherto has even approximated accuracy, except by accident. It is amusing to read the accounts of the manner in which, even scientific men have endeavored to persuade themselves that they had demonstrated its altitude to be enormously great; how out of the notes of observers stationed at the same place they rejected all which did not suit them; and how they here allowed  $\frac{1}{2}^{\circ}$  to  $1^{\circ}$ , and there  $2^{\circ}$  or  $3^{\circ}$  of probable error, and then announced that the aurora was far above the limits of the atmosphere. Hence for the *same* arch or "auroral cloud," we have an altitude of either 40 or 160 to 200 miles! It may be doubted whether it be possible to obtain any thing like a reliable parallax of so changeable a body as is an auroral streamer or arch, unless it be very low, and hence the estimates of its altitude in high, agree far better than those in low latitudes.

It is, besides, a singular fact that the corona is always in or near the elevated magnetic pole of each observer, and as no two observers can have the same magnetic pole, this changing nearly with the latitude, each sees a separate corona, as each sees a separate rainbow. However similar or near absolute identity the coronas of two observers may appear, they are not the same, and so it may also be, to a certain extent, with the arches, streamers, and other parts of the aurora. Hence it may be just as impossible to obtain a correct parallax of a corona or streamer, or even arch, as it would be to obtain one of a lunar or solar halo.—The corona, at least, must be an optical effect, depending upon some yet *unknown law of magnetism*, or magnetic condition of the particles of the matter of the aurora, just as the rainbow and halo depend upon the *well known laws of light*. All conclusions, therefore, concerning the great altitude of the aurora, derived from a supposed parallax must amount to nothing more than approximate guesses; except that it is satisfactorily determined that in middle latitudes it is considerably above the region of the ordinary clouds.



IV. *Its atmospheric or terrestrial origin.*

A number of circumstances render it almost certain, not only that it has a terrestrial or atmospheric origin, but that it is a phenomenon taking place in, and confined to the atmosphere.

1. It does not *change its position in reference to the revolving earth*, as do the heavenly bodies, which not being connected with it, are apparently carried westward by its eastward revolution. But for hours together, it appears to occupy the same place, or to hold the same position relative to the observer. It must consequently, in common with the atmosphere, have the same eastward motion with the earth.

2. Numerous observers, whose opinions are entitled to the greatest confidence, and who have had ample opportunities of forming a correct estimate of its height, have agreed in assigning it, in the polar regions, a place, not only far within the limits of the atmosphere, but only a short distance from the surface of the earth.

3. The constant *position of the corona in the elevated pole of the dipping needle*, and the *near parallelism of the streamers to the direction of its dip* show that the aurora has a most intimate relationship to terrestrial magnetism, and must have a more than casual connection with the earth.

4. It is commonly asserted by the natives and some of the temporary residents in high polar regions, where the aurora displays itself on the most magnificent scale, and where its rays are far more vivid than in southern regions, and shoot forward with lightning velocity, that its most active state is accompanied with a *crackling or hissing sound*, so distinct as not to be mistaken, even by those who have had no prejudices or superstitious fears to lead them to believe an imaginary to be a real phenomenon. "Persons engaged in the whale fisheries," "the inhabitants of the Sletland Islands," and those of Siberia, all agree in making the same statements. But in opposition to these, are placed the statements of some observers who, though they witnessed many polar auroras, yet never heard any sound. But this can prove no more than that sound is not invariably heard. We should not expect the noise to be audible except when the aurora is very low, and acting with a maximum intensity. Wrangell testifies that during "the most brilliant auroras," he "did hear a slight hissing sound, as when the wind blows on a flame." But in order to be heard the aurora must be within our atmosphere.

5. It is accompanied by *cloud-like matter*, which has all the ordinary external properties of true watery vapor. Wrangell says he "often saw on the northern horizon, below the auroral light, dark blue clouds,

which bear a great resemblance in color and form to the vapors which usually rise from a sudden break in the ice of the sea." This is no doubt the dark bank of vapor-like matter so generally seen even in middle latitudes. M. Lotten, a French naval officer, and member of a scientific commission sent to the north seas, who during the winter of 1838-9, observed upwards of one hundred auroras, at the bay of Alten, observes that "*a light sea-fog, extending to the altitude of from four to six degrees, became colored on its upper border, or rather was fringed with the light of the aurora, which was then behind it; this border became gradually more regular, and took the form of an arc of a pale yellow color.... This bow swelled upward more or less slowly, its vertex being constantly on the magnetic meridian, or nearly so.*" His description of the bow, shows it to be very like in character to that witnessed in lower latitudes, with its "oblique fleeces," or "snow-drift" forms, so much resembling an illuminated cirrus-cloud, but to which so extravagant a height has been assigned by some. This furnishes a strong presumption in favor of aqueous vapor forming the luminous particles which constitute all the visible parts of the auroral display.

6. It is influenced by *local circumstances*. Wrangell says, "Auroras are more frequent and brilliant on the sea coast than at a distance from it," whilst "latitude does not otherwise influence them." This seems to be corroborated by the statements of Capt. Bonnycastle concerning the auroras of the lakes. It shows that the existence of vapor, other things being the same, is favorable to their development.

7. It is *affected by the state of the weather*. "The finest auroras," says the same authority, "always appear at the setting in of strong gales in November and January; when the cold is intense they are more rare."

8. And finally, that the aurora "is usually nearer the surface of the earth," "than the higher regions of the atmosphere," "is shown by the *visible influence of the lower current on its beams.*" "We have frequently seen the effect of the wind which is blowing at the surface of the earth, on the streamers as distinctly as on the clouds."

#### V. *Its nature.*

That this is a most difficult point to determine is shown by the great number of theories which have been offered concerning it.

1. It was once maintained that the aurora was occasioned by "fiery and sulphurous vapors exhaled from the bowels of the earth, which, rising into the region of the air," there became phosphorescent, or were ignited. This theory has nothing in the discoveries of modern science

to support it, but on the contrary almost every thing to show its improbability.

2. Dr. Halley supposed that "there is a constant circulation of the magnetic fluid of the earth, from the north to the south pole through the air; which is counterbalanced by a circulation from the south to the north pole, through the pores of the earth. The magnetic effluvia, darting upwards from the north pole into the higher regions of the atmosphere, acquire such an impetus as to render the circumambient ether luminous;" and give rise to the phenomena of the Aurora Borealis. But this theory is contradicted by the phenomena of the Aurora Australis, in which the streamers, instead of being directed towards the south as the theory would require, move from the south towards the north.

3. M. de Mairan "ascribed this phenomenon to the impulse of the zodiacal light upon the earth's atmosphere." The zodiacal light is attributed to the atmosphere of the sun, which "extends sometimes as far as the earth's orbit. When the earth is immersed in it, a quantity of the luminous matter falls, by the force of gravity, upon the earth's atmosphere, and, by the centrifugal force, is driven from the equator towards the poles." A fatal objection to this theory likewise is the fact that the aurora actually moves from the poles towards the equator.

4. Euler ascribed the aurora to the luminous particles of our own atmosphere, driven beyond its limits by the light of the sun, sometimes ascending to the height of several thousand miles! The objection to this theory is that it lacks even a moderate share of plausibility.

5. M. Monge maintained that the phenomenon consists merely in clouds illumined by solar light reflected from others placed at different distances in the heavens. It is difficult to see how all the phenomena can be accounted for by this theory.

6. Captain Ross has maintained that the aurora is due to atmospheric vapors illumined by light reflected from fields of ice in high latitudes, and that he has seen auroras between two separate icebergs. But a fatal objection to this theory is, that some of the most brilliant auroras take place during the long polar winter, in the total absence of the sun's light from those regions in which they occur in their greatest splendor. Another objection, which applies with equal force to the theory of Monge, is the fact, determined by Brewster, Biot, and our own countryman Henry, that the light of the aurora is not reflected but direct or original light. "No trace of polarization can be discovered in it," which would be the case if it were reflected light.

7. M. Biot's theory maintains that the aurora is composed of real but very attenuated vapor, whose particles are obedient to the earth's

magnetism. This vapor must consist of volatilized iron or other magnetic metals, ejected from polar volcanos and forced to great heights into the atmosphere, where, forming strata, it would perform the office of electric conductor. If the metallic particles were sufficiently near each other or the cloud sufficiently dense, the electricity would flash along without producing light; but if the cloud were very rare, the electric light would be seen between them and so produce the appearance of luminous lines, and the particles themselves would become luminous. The electricity he also supposed originated from the polar volcanos. But to this theory it may be objected that we know of no such polar volcanos as are adequate to produce the effects ascribed to them, and the volcanic vapors as far as known consist principally of non metallic gases, and comminuted earthy matters.

5. The most plausible theory yet suggested is that in which the light is referred to electricity, and the aurora is regarded as an electrical display. This is, indeed, in part the theory of Biot, which has, in some respects, been deemed insufficient. But the electrical theory, in variously modified forms, has been advocated by the most eminent electricians of the past and present centuries: such as Hawksbee, Canton, Beccaria, Franklin, Faraday, and others.

The first two showed that the principal appearances of the aurora can be exhibited by means of common electricity—an experiment which almost every lecturer on that branch of science now performs as a class illustration. If, for example, a tube of any convenient length and diameter be made air-tight, and exhausted by means of an air-pump, it will exhibit flashes of light diffused through the space within resembling the auroral streamers and waves, if either end be held in the hand of the operator, and the other be presented to the prime conductor of an electrical machine. As each successive spark passes upon the cap of the tube a flash passes through the latter to the other end. The color of the light will be influenced by the extent to which the exhaustion has been carried; if this be nearly perfect, the light will be white: but if only partial, it will be of some shade of blue, purple or red. Perhaps, however, the color still more depends upon the state of condensation of the electric light; in the ordinary atmospheric flashes, the electric matter, in order to overcome the resistance, must pass in a condensed stream and consequently in large quantities, from point to point, and is then white; so in the exhausted tube the quantity passing in a given time, and therefore its density, may be greater than when the exhaustion is only partial; and this may explain the greater whiteness of the aurora near the hori-

zon; it being then really in a more condensed state, and apparently so also on account of being seen obliquely by the observer.

It has already been stated that the magnetic needle is constantly disturbed during an auroral display, and that too in proportion to its activity. A most intimate relationship had, long, been more than suspected as existing between electricity and magnetism. Electricity was, for instance, known, under favorable circumstances, to communicate and to destroy magnetism. But since 1820, when Prof. Oersted found that an electric current causes the magnetic needle to deviate from its position in reference to the meridian, every new discovery in these two collateral branches of science, has only shown the intimacy to be the more close, until, in the hands of Faraday, the proof that they are but modified phenomenon of one great material agent, and that they are perfectly reciprocal, the one capable of producing the other, has become complete. Now repeated observations, made within the last quarter of a century, all go to prove that the needle is not only disturbed during the display, but especially so when the streamers are brilliant, thus showing that it is affected precisely as if electricity were in motion, and corresponding in the extent of its disturbance to the intensity of those movements.—The mean disturbance of the needle being, moreover, eastward, the effect is the same as if electric currents moved above the earth from the pole towards the equator, which is also the apparent direction of the auroral movements.

Dr. Dalton has, also shown, what has since been verified in innumerable instances, that, not only are the coronas, when they exist, invariably found to occupy the place in the heavens to which the elevated pole of the dipping needle is directed, but the "luminous arches" are perpendicular to the magnetic meridian, or parallel to the magnetic equator, which makes an angle of about  $12^\circ$  with that of the earth. This remarkable obedience to magnetic forces must certainly be regarded as something more than accidental.

9. Regarding, therefore, the aurora, as we must, as an electrical display, it is yet necessary to state the different explanations offered by different philosophers as to the mode in which the free electricity is supplied and made to produce the visible effects of the aurora.

Canton supposed that the electricity flashed from positive to negative clouds; but then, it may be asked, why is the direction of the auroral flashes always from polar towards equatorial parts, unless we make the bold assumption that the electrical relations of clouds depends upon those of latitude? And why is the aurora not as frequent and brilliant in equatorial as in polar regions? Beccaria supposed that the electric

circulation was from the north to the south pole, which, however, is inconsistent with the direction of the Aurora Australis.

Again, it has been supposed that, by thunder showers, in tropical and temperate regions, much of the natural electricity of the air is withdrawn, and that the deficiency thus created is supplied by the passage, through the rarer portions of the atmosphere, of the comparatively redundant electricity of the poles. This explanation accommodates itself, at least, to appearances. But it is now very well established that the free electricity of the clouds, is nothing more than that which was held in an insulated or latent state in the vapor before condensation, and which it carried up with it from the earth during evaporation. And further it is by no means certain that there is, as a general matter, a deficiency of electricity in the equatorial atmosphere. According to this view, however, there must be a determination of the electric matter from the equator towards the poles through the mass of the earth, and a reverse course through the upper air. The *fact* of such circulation is more than probable, but the *cause* here assigned is not likely the true one. But a cause adequate to the production of such a circulation, and in accordance with well established facts has been suggested by Faraday. He has shown that the unequal exposure of the earth's surface to the solar heat, by its diurnal revolution, must produce free electricity, and that this must press towards the poles, whence there must be a tendency for it to pass off. This tendency, perhaps always nearly constant, being favored by certain conditions of the atmosphere, would, under such circumstances, give rise to the gorgeous displays of the aurora, which have excited so much curiosity and interest; and, under unfavorable circumstances, produce a circulation so feeble as not to be appreciable either by the visible appearances of the heavens or the magnetic needle. A favorable condition of the atmosphere may be found in the existence of more than an ordinary share of moisture in the regions above those of the ordinary clouds; and the light, as seen by us, may be that of highly electrified vapor moving under the influence of electric forces.

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THE LANGUAGE OF PASSION.

The first and brightest names, that have been engraven on the adamantine pillar of Fame, to which men point with mingled pride and gratitude, were of those, who,

“With a master's hand and prophet's fire  
Struck the deep sorrows of their lyre.”

Mankind were thrilled by the passing witchery of this divine art long

ere Eloquence had ascended her proud rostrum, or History had unrolled her wondrous scroll; before the Philosopher had penetrated the hidden arcana of nature, or the Legislator had discussed the intricate science of government; before the sleepless eye of the Astronomer had scanned the circling orbs of the midnight heavens, or the Geographer, with aimless elevated, had explored and described his *ultima Thule*. The voice of blind old Homer floated over the plains of mighty but dormant Greece like a spirit-song from a brighter sphere, while barbarism yet rioted beneath that sunny clime. But why does Poetry thrive in such early and rude ages, the antecedent of Prose? Simply because the savage is the slave of momentary impulse—he is the child of feeling; his heart, in its wild and tumultuous throbbings, acknowledges no sovereign but his ever-varying passions, and hence his Language is of that wild, abrupt, exclamatory, yet highly poetical style, which passion always dictates. But it is not amid the murkiest gloom of the night of barbarism that Poetry flourishes in its greatest vigor. It is in the period immediately succeeding, when the stars are waning in the heavens and the mist of night is slowly receding from the earth, when the footprints of rose-crowned Aurora can already be seen in the blushing hues of the glowing Orient, that Poetry breathes her choicest strain. This is the auspicious moment, when the mind has become expanded and enriched, the imagination chastened and refined, but when the passions are thriving in all their native and unchecked luxuriance, for the production of model-poets. Accordingly we find that the most glorious poets of the world have arisen in this twilight of civilization. This was true of Dante, Boccaccio and Petrarch of Italy, Corneille and Racine of France, Cervantes of Spain, Camoens of Portugal. Spenser, Shakespeare and Milton were the morning stars, that sang together in prospect of the glorious day that was dawning in England. Garrick has truly said, that Shakespeare *dip'd his pencil in his own heart*. Centuries roll after centuries like the never-ceasing waves of the restless deep, each effacing every vestige of its predecessor—change is writing its stern name upon every part of the crumbling world—poets flourish, like *ephemera*, for a day and are engulfed in the Lethæan waves of oblivion; yet Shakespeare still sits upon the throne of English Poesy, entwining the chaplet of triumph in immortal verdancy around his brow. Why does his fame encompass the earth and defy the ravages of time? It is because he faithfully portrayed the emotions of his own breast, and although the material world may change, the passions of mankind are similar in all countries and all ages.

In more refined ages those Poets, who have made their names as familiar with us as “household words,” were individuals of the most acute

sensibility. The productions of Byron, with more than a mirror's truth, reflect the lineaments of the man. The gloomy, misanthropic, mysterious Manfred, roaming over the dizzy heights of the ice-mantled mountain, where the startled Chamois hunter feared to tread, and smiling at the terrors of the thundering avalanche, or the desolate Childe Harold, standing like a fiend in mockery over the tombs of classic Greece, are but transcripts of the different states of the poet's mind. Love was the ruling passion of Robert Burns—Love of Home, of bonny Scotland and her fair lassies. He took his first lessons in Love and Poetry simultaneously, and his Tutor was his partner in the harvest-field, who, in his own language, was a "bonnie sweet, sounsie lass." It was while listening to her dulcet voice and picking out the cruel thistles from her small hands, that he imbibed that "delicious passion" which he has celebrated with such charming simplicity and sweetness.

Then may we not conclude that the Language of Passion is highly poetical? Grief, Joy, Revenge, Pity and Love, are the divinities that inspire the poet's song; under their influence he strikes his sounding lyre and his strain flows sad, melancholy and pensive—wild, joyous and glee-some—deep, intense and absorbing—sweet, soothing and entrancing—rich, melodious, and fascinating, according to the passion that sways his breast.

The language of Passion is also highly eloquent. Look at the aboriginal tribes of America, rude, unpolished, unlettered savages as they are, yet when their passions are once fully excited, their eloquence flows with a force and an impetuosity that art may in vain attempt to rival. See the manly form of the chief slowly arise—a mild halo of dignity playing gracefully around his august countenance—he speaks—

"With voice as low, as gentle and caressing  
As e'er won maiden's lip in moonlit bower."

But anon! and the scowl is gathering on his swarthy brow! darker and still darker it grows, until it becomes as portentous as the summer storm-cloud: the lightning glances of his fiery eye flash with electric rapidity to the hearts of his auditors: his voice swells to the highest pitch of its powerful compass, and the listening hills reverberate his thunder-tones of indignation.

As a striking example of the power of rude but impassionate eloquence, look at the first Crusade. An obscure, monk returning from a pilgrimage to our Savior's tomb, conceives the grand design of arming Europe under the ensign of the Cross and expelling the ferocious Turk from the Holy City. What a chimerical idea! a poor, illiterate, unknown bigot, machinating the overthrow of those armies, whose every battle



was a victory. But look! from one kingdom he proceeds to another, haranguing the crowds, that everywhere attend him, with all the earnestness of an inspired prophet; his spirit is quickly imparted to others, and it spreads in every direction like a fire in the Prairies. Mail-clad kings, war-worn nobles, chivalric knights, and beautiful damsels attend his preaching, and yet stranger to relate, embrace his faith. He unfurls his banner and the bands are formed in deep and terrible array. Here is youth, with its fair and dauntless brow, manhood well-poised in its confirmed strength, and wrinkled age leaning on its tottering crutch. The civilian side by side with the warrior, the libertine with the patriot, the fearless Scott with his goodly claymore, the adventurous Saxon with his trusty blade, the fair-haired Gaul with his well-tryed lance, the blue-eyed German with his puissant pike—all hurried onward by the wild enthusiasm of Peter the Hermit. And although we cannot see such striking and powerful exhibitions of eloquence in ages of greater refinement, yet the orator of the heart is in all countries, and all ages, a potent wizzard. Look at the Earl of Chatham and his son Wm. Pitt, Fox and Erskine, Grattan and Plunkett, and the ferocious Mirabeau! They established their high reputation as orators, not by the deep, learned or chaste disquisitions of the closet, but by the overwhelming, resistless, lava-like torrents of fierce declamation, while their souls were on fire with the subject, and every nerve strung up with excitement. And why did Edmund Burke, the profound scholar, the far-seeing statesman, and the erudite metaphysician so often address "a beggarly account of empty boxes"? It was because he was the orator of the head; cool, logical and dispassionate, he could pursue a long and connected series of pure ratiocination with all the truth of a mathematical demonstration; he could delight the fancy by the freshness and beauty of his variegated flowers—he was an original, profound and transcendent genius; but he possessed not that magic power by which the true orator of nature can sweep the sympathetic chords of the human heart and attune it in perfect unison with its own emotions. Of this style of eloquence, which is doubtless the highest, our own America may boast some bright and shining examples, whose names are their own sufficient eulogy. Hers is an Adams, a Rutledge, an Otis, an Ames, and greatest of all, a Henry; more recently others, too, whom History will not neglect.

Such is the power of Passion over Language. It does not, however stop here; but ascending the heavens, it is this which gives the softest and most ravishing tones to the Seraph Hosannas, as hymned around the throne of the Eternal, and which joins the Archangel's lofty notes of praise in sublime concert with "the music of the rolling spheres."

## PHILOSOPHY OF STORMS. NO. VIII.

BY PROF. W. L. ATLEE, M. D., PHILADELPHIA, PA.

Whenever, therefore, the dew-point is very little below the temperature of the air, and the cloud very narrow and very lofty, and reaches down so as to touch the earth, the storm will take the form of the *water spout* if at sea, and the *tornado* if on land. The lower part of the cloud, or that which forms below the original base, in consequence of the levity of the cloud itself, will be in the form of an inverted cone.

The length of this inverted cone will vary with the difference between the dew-point and the temperature of the air within the ascending column under the base of the cloud. For example, if the dew-point be 5 degrees below the temperature of the air, the inverted cone will be 500 yards long; if it be 6 degrees, it will be 600 yards long; and thus for every additional degree of difference between the dew-point and temperature, the cone will be 100 yards longer.

This forming of the cloud lower and lower in the up-moving column under the cloud is not only indicated by the thermometer, but depends upon the same circumstance, which causes the sinking of the barometer, and corresponds also with the fluctuations of the latter instrument. For every fifth of an inch that the barometer sinks, the cloud will begin to form about 100 yards lower, so that, if the barometer should fall, in one of these tornadoes, two inches, the air, on coming in under the cloud, will cool by diminished pressure about 10 degrees, and the inverted cone might be 1000 yards long, and would then reach to the earth, if the dew-point was only 10 degrees below the temperature of the air, at the time the cloud began to form.

The velocity of the air upwards in one of these spouts will be in proportion to the fall of the barometer in the centre of the column, increased a little by its rise in the annulus. This may be calculated by an observer over whom the middle of the cloud passes, by the following formula:—Note the height of the barometer at the moment of the calm which precedes the storm, and also at the moment of the calm in the middle of the storm; take the difference in inches—8 times the square root of 900 times this difference will be the velocity in feet per second of the upward motion of the air in the centre of the storm. For example: if the barometer should sink one inch in the centre of a storm, the air would rush upwards with a velocity due to a head of pressure equal to one inch of mercury. This is equal in weight to about 900 feet of air of mean density at the earth's surface. On the supposition of its having this density, the pressure would of course be this much less in the inside than the outside of the column. Now, if we subject

this to the laws of spouting fluids, and take the square root of this number, which would be 30, and multiply it by 8, we will have the velocity upwards in the centre of the storm of 240 feet per second, and so in proportion to the fall of the barometer. A column of mercury one inch square and 30 inches high, the average height of the mercury in the barometer at the level of the sea, being equal in weight to 15 lbs., one inch of mercury will be equal to  $\frac{1}{2}$  lb. weight, and the barometer being one inch lower under the cloud, the upward pressure of the air must be equal to half a pound upon every square inch of surface.

With this immense velocity and this great upward pressure it will be readily understood why, in the progress of such a storm, bottles explode their corks, and cellar-floors, roofs of houses, trees, &c., are thrown up as the tornado passes over them, taking off the pressure of the air above, while the rapid expansion of the air below and within explodes them.

The diameter of these storms at the surface of the earth does not generally exceed two or three hundred yards; and as the annulus all around the tornado extends about as far beyond the borders of the storm as the borders are distant from its centre, there will be a calm, not only in the centre, but also all around the meteor, only two or three hundred yards from its borders. And beyond this annulus, in consequence of its greater pressure, the wind will blow gently outwards.

As the tornado-cloud rises very high at its top, its upper part will be in the upper current of the air, and as this gives direction to the storm, the course of the latter will be governed by the motion of this current. It is known that this current observes the same direction in the same latitude, but varying with the latitude, the course of these storms must necessarily vary with their geographical position.

The variation in the direction of this upper current depends upon several circumstances, viz:—1. When the air at the equator rises ten miles from the surface of the earth, as Mr. Espy remarks, it will, on the principle of the conservation of areas, be 1-400 further from the centre, and of course it will fall back towards the west by more than 1-400 of the equatorial velocity of the earth, eastwardly by its diurnal motion, or about  $2\frac{1}{2}$  miles per hour, besides the motion, which it may have had towards the west at the earth's surface. The upper current, therefore, near the equator, will be found to move from the east to the west.—2. The mean temperature of the air in the torrid zone is about 80 degrees greater than in the frigid zones, and as the mean temperature of the air in the frigid zones is about zero, the air, according to Mr. Espy, is, in consequence of expansion by heat, 80-118 of its whole height *higher at the*

*equator than at the poles.* The greater quantity of vapor, too, in the equatorial air, will cause it to stand about 1-90 *higher than the polar air*, and, from these united causes, if the polar atmosphere be forty miles high, the equatorial will be about forty-eight miles.—3. Herschel says, that since the earth revolves about an axis passing through the poles, the equatorial portion of its surface has the greatest velocity of rotation and all other parts less in the proportion of the radii of the circles of latitude to which they correspond. The heated equatorial air, while it rises and flows over towards the poles, carries with it the rotatory velocity due to its equatorial situation in a higher latitude, where the earth's surface has less motion. Hence, as it travels northward or southward, it will *gain* continually more and more on the surface of the earth in its diurnal motion, and assume constantly more and more a *westerly* relative direction, until, as the atmospheric elevation and rotatory velocity diminish towards the poles, the air, as it rolls off down the inclined plane of the surface of the atmosphere towards the north, will be constantly passing over portions of the earth's surface which have a less diurnal velocity than the part from which it set out, and, as from the nature of inertia it still inclines to retain the diurnal velocity towards the east, which it originally possessed, it will veer gradually round, and when it reaches the latitude of about 20 or 25 degrees, it will then probably be moving nearly towards the north, and beyond that latitude its motion will be north-eastwardly; while the air towards the south will first veer round towards the south, and then south-eastwardly. This will be rendered plain to any person who will take up the terrestrial globe and examine the operation of these two forces, bearing in mind at the same time that the surface of the earth at the equator moves at the rate of 1000 miles in an hour, while at 60 degrees of latitude it revolves only at the rate of 500 miles in the same time.

That such is the necessary operation of these causes is satisfactorily proved by the *cirrus-cloud*, which forms at great elevations, and always indicates the course of the upper current.

In our latitude this cloud always comes from the west, or rather a little south of west; in the torrid zone it comes from the east; in north latitude 25 degrees it comes from the south; and in the same latitude south it comes from the north. A tornado, therefore, in Pennsylvania, and probably throughout the northern and southern temperate zones, being guided by this upper current, in which the *cirrus-cloud* appears, will move towards the east, or to a point a little north of east; in the torrid regions it will move towards the west; and in intermediate latitudes it will move towards the north and south respectively. Indeed, they will

always move in these directions, unless they meet with a middle stratum of air moving in a different direction. It, therefore, becomes a matter of much greater consequence to meteorology than would at first view appear, that the direction and velocity of these uppermost currents in the atmosphere should be accurately ascertained.

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#### COAL MINING AT PITTSBURG.

BY GEO. W. FAHNESTOCK.

The great coal basin of the west, in which Pittsburg lies near the northern out-crop, differs essentially from almost every other known. The regularity of its strata, the vastness of the bituminous deposits, and the facility with which their treasures are brought forth from the bowels of the earth, have long been familiar in Geology. Every student of that science is aware of the similarity existing between the coal measures of the old world, while the important features, which distinguish an Appalachian coal field, are comparatively unknown. I do not design, however, entering into more of its peculiarities than such as may be elucidated in a loose sketch of the manner in which it is excavated by the miners. Unlike the English collieries, or those of Eastern Pennsylvania, we never descend by a shaft for coal, although there are four or five strata of from eighteen inches to six feet in thickness below the level of the rivers. The lowest of these, as nearly as I remember, is about three hundred feet below the river and was discovered while boring for salt water.

The vein usually worked, in the neighborhood of this city, lies about three hundred feet above the river, and is only mined from the sides of hills where the stratum is exposed. The miner digs into the coal and examines its quality, whether it is hard, black, and shining, or soft, friable, and coated with a brown oxide of iron; and if the test proves it to be desirable coal, he prepares for an excavation. This stratum is about six feet in thickness, and the floor is formed of pyritous shale, several inches thick, under which a thickness of from nine inches to a foot of good coal is found. This is never worked, owing to the cheapness and abundance of the material. As they dig into the hill they confine themselves to a passage about six feet in width, planting strong posts opposite each other every few feet, which support heavy timbers intended to prevent the roof from caving in. These are always used, no matter how far the miner goes, and if he ventures too far without a prop, he may forfeit his life for his temerity, as the roof sometimes falls in a mass of many tons weight, and without a moment's warning crushes all beneath. An experienced miner by striking his pick against the roof, is enabled to

judge of its solidity, for if it gives forth a dull or hollow sound, there is reason to believe that a strong prop is necessary.

They diverge from the entry in different directions, and take out the coal from spaces twenty or thirty feet square: these they call rooms. Pillars or masses of coal, about forty feet in diameter, are left between the rooms to sustain the superincumbent rock. Their implements are few and simple. A light pick, sharp at both ends, with a handle three feet long, three or four iron wedges, a sledge-hammer, and tools for blasting, are all they require. The miner when going to work is denuded of everything but pantaloons and cap, and is so blackened by the coal, and so effectually disguised as to be recognized with some difficulty. Thus appareled and armed with his pick-axe, he presents a wild and grotesque appearance as he moves stooping through the mine, his candle fastened to the front of his cap by a ball of plastic clay, and his hoide of fierce dogs surrounding him. He selects a spot and commences a vertical excavation from the roof to the floor about a foot in width, digging in as far as his arm and the handle of the pick will allow. He then lies down upon his side and digs in a similar manner along the floor for a length of six or seven feet, and as far into the coal as he can. He now drives a wedge into the face of the coal about six feet from the vertical digging, and about midway between the roof and floor, when the whole mass detaches itself, and falls to the floor with a deafening sound. It breaks into large cubes which he reduces with his sledge into pieces suitable for domestic purposes. He then fills his little wagon containing ten bushels, and harnessing his dogs, assists them in drawing it to the mouth of the mine. He adjusts a strap across his breast, and side by side they tug until they reach the entrance. In the principal mines the use of mules and ponies is fast doing away with this, the most laborious feature in the miners' life.

A stranger, coming suddenly upon half a dozen of these grim looking men at work in a room, is half inclined to fly, as their wild and almost fearful appearance is very striking, and well calculated to terrify the inexperienced. The strokes of their picks resounding through the vaulted mine can always be heard at the entrance, however distant the workmen may be, and the falling of the mass of coal sounds like deep and distant thunder.

Our miners are generally Welchmen, enjoy robust health in the mines, which are of equal temperature summer and winter, and they make good and peaceable citizens.

*Pittsburg, Pa*

## CHOOSING A SUBJECT.

MR. EDITOR: What a strange thing is this human mind! How it annihilates time and space in its movements, brings the Past into the Present, and springs from continent to continent, and from world to world with inconceivable rapidity! Here, for instance, have I, in the solitude of my study, sat down to comply with the request of my worthy friend, who would have me honored with an appearance in the Journal; and lo! in an instant, when I would seek a subject on which to exercise my pen, instead of finding such a subject, and holding it fast before me, this wild mind of mine is off in every direction—now in the halls and groves of my *Alma Mater*; now listening to the roar of great Niagara; now peering with telescopic vision at the mountains in the moon; now skimming across the ocean-wave and standing on the walls of ruined Jerusalem; now here, now there; in a moment, “*quick as thought*,” running through a countless variety of scenes and subjects—History, Poetry, Rhetoric, Eloquence, Mathematics, Geography, Astronomy, creeping things and quadrupeds—and yet I have no subject for an *article*. Now is not this vexations? So much to write about, and yet nothing on which to write! “Why, I am sure, there are subjects enough.” Subjects! oh, yes; they are plenty—

“Thick as autumnal leaves that strew the brooks  
In Vallambrosa, where the Etrurian shades,  
High overarched, embower—”

that is just the trouble. “My dear,” says the parson to his good wife, “I wish that you would give me a text for a sermon; for really, I hardly know what to preach about.” “Why, my love, how can you be at a loss for a text when you have the Bible before you?” What a precious helpmate!

The truth is, this *choice of a subject* is no small matter. I know it used to be very troublesome in my school-time, when *composition-day* came around. And so it was in College. I once had an oration to write for a public occasion—it was to be a great epoch in our student-life.—The fair, and gay, and loving, the learned, and acute, and critical, were to be present. Our venerable President, and dignified Professors, were to listen to us; and we were all expected to do our best. For would not the reputation, almost the continuation of the College, be that day in our hands?—were not we to be its representatives in the public eye—samples of its workmanship, and ergo, arbiters of its destinies? *That* day, the *last of College Life*! Well, such a time as I had to find a subject! How many hours and days were spent in the search! What a consultation of records! What an examination of the schedules of Col-

lege Commencements for long past years! Now one and now another theme was adopted and rejected, this one approved and then disapproved, until at last one was fixed upon—and the oration was commenced. Oh, what a burden fell from my shoulders when the first sentence was written!

Often it is harder to select a subject than to write upon it when chosen. But it is not always so. Some subjects strike one as very fine, but when we would write upon them, we find we can do little or nothing with them. I once thought that I had a magnificent subject for a composition—*The Philosophy of Circumstances*; and I sat down to write upon it. I went so far as to quote from Horace: “Et mihi res, non me rebus, subjungere conor”—and there I stopped. You may perhaps suppose that the fault was not in the subject. Be it so. Some men do choose subjects beyond their strength: and they and their little ideas are lost in the grandeur of the theme, which they are attempting to handle. College platforms on Commencement days, and other great occasions, have given evidence of this. On the other hand, great minds can often invest little, or trite and seemingly uninteresting themes with charms of irresistible attraction. And some minds are capable of rising to their themes, and *with* them. We are occasionally astonished to see how a great subject will bear aloft the mind, and give sublimity and eloquence to the thoughts and expressions of one, whom we have been accustomed to regard as destined only for humble things.

You will find it written somewhere—“*Dimidium habet qui bene cœpit.*” This is true even when applied to the choice of a subject. He has made a good beginning, who has selected a good theme. And then, if he has successfully accomplished a few introductory sentences, his way is clear. Let him go onward fearlessly and triumphantly. Here we may apply the French proverb: “*C’est le premier pas qui coûte.*” But this is not always so. Sometimes the struggle must be kept up to the end. It is wise to select a subject which we feel that we are capable of handling with some degree of justice. But if we always attempt easy things we shall never accomplish great things. We must occasionally plume our wings for a higher flight. It is pleasant and easy walking on this smooth plain—but look yonder at that mountain with its lofty peak and rugged sides! There is some exertion necessary to ascend, but there is excitement in the effort, and a bracing of energies, and when you are up there, what a glorious view! And how proudly and joyously your lungs play with the elastic air. Suppose that we have undertaken a subject, which seems too great for our powers. Let us not be immediately discouraged, nor lay it aside for a more genial moment



I once watched with a great deal of interest a water snake in the act of swallowing a fall-fish. His *subject* appeared too large for him, and it seemed as if the fish must certainly escape. But the snake was steadfast and determined. He held on to his subject. The process was a slow one; but after watching for some time I left his snakeship evidently congratulating himself upon the certainty of mastering his theme, the fish having already half way entered his extended jaws. The moral which I gather is: Hold fast to your subject—struggle hard and be successful.

But the hardest of all things is to write without a subject; and I do not see that I am likely to find one. But I will continue the search, and should I have success, you shall hear from me. At present you must “take the will for the deed.” and believe me,

Yours, &c.

VOLO.

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PENNSYLVANIA COLLEGE. NO. III.

Having furnished our readers with a sketch of the origin and progress of Penn. College, and presented its claims upon the confidence and patronage of the public, we propose now to inquire how far the object contemplated by the benevolent founders of the Institution has been accomplished, how far the expectations, originally cherished, have been realized. Have the wishes of those, who commenced the enterprize and labored from the beginning for its advancement, through difficulties and discouragements, been attained? We reply, there is no reason for dissatisfaction. The little acorn, that was planted a few years ago, is spreading its umbrageous branches far and wide, under which many find refreshing shelter. Fruits have already accompanied the effort, such as to gratify the most sanguine expectations of its friends. Pennsylvania College does occupy an honorable position among the literary institutions of the land, and has secured the favor of an intelligent community. From this fountain streams have been sent to gladden the city of our God. Although in existence not a score of years, upwards of one thousand have enjoyed the advantages of instruction here given, who are distributed through the country, enjoying public confidence, occupying posts of honor and usefulness and discharging the responsible duties of society. In almost every state of the Union, and even in distant climes, its representatives are to be found, making an impression upon the community and exerting an influence for good. Of those, who have entered upon the duties of active life, all we believe are answering the wishes of friends and

fulfilling the expectations of their *Alma Mater*. No one has fallen by the way, forfeited the trust reposed in him, or shown himself unworthy of his literary parent. From this source the legal and medical professions have received accessions of strength, usefulness and honor. At the bar of justice, pleading for injured innocence and invoking the penalty of the law upon the offender, her sons are to be found. At the sick bed, exposed to disease and surrounded by death, the ministers of the healing art may be found, whose first lessons were received in Pennsylvania College. But the primary object with those who originated the enterprise was to bring cultivated intellect into the service of the Church, to furnish facilities, by which men might be thoroughly educated and fitted for the ministry of reconciliation. It was hoped that the mind, here educated, might be sanctified, that the benign influences of religion might be infused into the science and literature communicated within these Halls—that here many men might be qualified to go forth as heralds of the cross, and use their influence to rescue other souls from ruin, to awaken new notes in praise of the Redeemer, to people new mansions in heaven.

But in order that we may ascertain what proportion of the young men here educated have been induced to devote their energies to the Church, let us, as a criterion, refer to the graduating classes, saying nothing of the many who, having pursued a partial course in the College, are now faithfully laboring as watchmen in the vineyard of their Lord. The first class, three in number, was graduated in 1834; of this number one is in the ministry. In 1835 out of a class of eight, four are in the ministry. In 1837 there were four graduates, two are in the ministry. In 1838 there were six graduates, of these four were for the ministry. In 1839 there were fourteen graduates, all prepared themselves for the ministry except two. In 1840 there were six graduates, three devoted themselves to the ministry. In 1841 there were eleven graduates, all are in the ministry, except one. In 1842 there were thirteen graduates, all of whom are in the ministry except one. In 1843 there were eleven graduates, of this number seven are in the ministry. In 1844 twelve were graduated, of these eight are designed for the ministry. In 1845 there were four graduates, of these two will probably enter the ministry. In 1846 there were fourteen graduates, of these seven have the ministry in view. In 1847 the graduating class consisted of seventeen, ten will probably consecrate themselves to the work of the ministry. Here, then, are *one hundred and twenty-three* graduates, *eighty-two* of whom are either in the ministry or preparing for it. With these facts before them, may not the friends of Pennsylvania College be encouraged, and ask without fear, where is there

another Seminary of learning, that, in proportion to the number educated, has sent forth so many ambassadors of the Most High? Has not the Institution already contributed to impart an impulse, which may yet move millions of hearts towards God?

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PLAGUES. NO. II.

The occurrence of what has been termed "bloody rain," "showers of blood," &c., has been recorded by a number of historians and is incidental to great elemental commotions in nearly every age of history. Allowing much for the influence of superstition and terrified imagination in observing and recording such events in the earlier histories, there is still much, that challenges the careful observation of those who live in this day of "enlarged opportunities and increased light." A few allusions shall suffice.

In the year 1693 of the Christian era, history informs us that nearly cotemporaneous with a violent earthquake in Sicily and Naples, while a malignant plague was ravaging the people, a fountain sent forth its streams "as red as blood." In the year 225 B. C. the Roman army, then marching into Gaul, was infected with a deadly plague and a river in Picenum was so changed in the colour of its water that it presented every appearance of blood. These are confessedly rare phenomena, and to this day the learned are not unanimous in their philosophical explanations of the circumstance. The most plausible, perhaps, ascribe them to subterraneous combustion attended by peculiar electric states of the atmosphere. Showers of blood are more frequently mentioned in connection with highly distempered states of the seasons.—Livy bears decided testimony to the fact, that at particular times "it rained blood," and Homer speaks confidently of showers of blood, which fell before his time, and also of a similar occurrence, that happened in his own day. It is said too that during the reign of Octavius, Egypt was visited with a shower of blood. The historian of England also furnishes accounts of these bloody rains in the fifth century and also in the sixteenth, which the credulous and superstitious afterwards interpreted as the harbinger of the death of the two Dukes of Brunswick. Whilst the profligate Nero swayed the empire of Rome, showers of blood are said to have fallen in such copious streams as to tinge the water of rivers with a crimson hue. It is a difficult matter to explain this phenomenon. From observing the coincidence of bloody rain with the existence of plague in some form or other, it was soon regarded as prognostic of some dire visitation from heaven, and the affrighted beholders were awed

into silent wonder not daring to investigate the causation of these Divine interpositions nor to enquire into their probable production on natural principles. Blood spots, as they are termed, have frequently been seen in the Summer season on the leaves of plants and on stones, and are now, perhaps, correctly ascribed to a species of butterfly, which, it is known, immediately after quitting the chrysalis state, emits drops of blood-red fluid, and when multitudes of the insect move together they deposit this fluid in sufficient quantity to spot the herbage and the soil. But the fact of rivers being colored militates against the agency of these insects as being sufficient to the production of such extensive effects. It is to be regretted, that the more ancient histories of blood-rain contain so few of the attending aerial appearances as to leave much to conjecture, which, if known, would contribute to a correct explanation of the event. Our own country in January 1741, furnished one instance in New England, of rain which, as it fell, presented the appearance of blood descending from the sky. There was on this night an appearance as though the heavens were on fire, the brightness of which illuminated the earth so as to render objects clearly visible, and it was during the continuance of this unusual illumination, that the drops of a shower presented the peculiar hue of blood. It is said that the people who beheld it superstitiously regarded it as the fervent heat with which the elements are to be melted before "the great and terrible day of the Lord," and viewed it as the harbinger of the end of time. This occurred at a time when a malignant disease was prevailing in Philadelphia and Virginia.

We do not design to prosecute a comparison between these appearances and "the plague of blood" in Exodus, but as they are curious they were thought to be interesting. The death of different species of fish, and the corruption of water are such frequent attendants upon great plagues as to receive particular notice by all careful historians, especially of the later centuries. Diemerbroek, in the 17th century, who philanthropically bestowed medical attention upon multitudes, who were ill with a plague then raging, and who afterwards wrote a history of the distemper, speaks pointedly on this matter and also of the unusual tendency to putrefaction in fish, flesh, and even vegetables during the prevalence of pestilence. Aristotle (*De animalibus*,) refers to the same fact, but mentions that *no one* pestilence appears to affect *all kinds* of fish. It is deserving of mention, too, that nearly at the same time that the yellow fever was prevalent in Baltimore, Philadelphia, and some of the seaports of Virginia, in 1797, multitudes of dead fish were seen floating down James river in that state. Instances of the kind might, with a little research, be greatly multiplied. The fact of deterioration in the healthful

qualities of water during pestilential periods is well attested. In the plague known as "the black death," which, in the fourteenth century deprived Europe of twenty-five millions of inhabitants, the water in many places in Switzerland, Germany, France, and other European countries, became so contaminated as to render their use highly destructive. At this period, when the human mind, appalled at the scenes of death, which thickened in the land, was unable to form a deliberate judgment, and suspicions of a fearful kind biassed the intellect in the investigation of supposititious proofs, tens of thousands of harmless Jews were sacrificed to the fury of the populace on the charge of having poisoned the wells and fountains. In 1795 the same condition of the water in New Haven, (Connecticut,) gave rise to the suspicion of the wells being poisoned at the time of the prevalence of a destructive epidemic. In addition to the extreme insalubrity of the water, which attended this epidemic in New Haven, the immense number of animalcules generated in it afforded incontestable evidence that the pestilential principle which, diffused through the air, had so sorely afflicted mankind, had penetrated the water, deteriorated its healthful properties and brought into play new and unwonted phenomena. Thus it was in the great plague, that devastated Athens, when the corruption of the water, alleged to have been poisoned by the Lacedemonians, was supposed to have given origin to the pestilence.

It has thus far escaped, and perhaps always will elude the research of mortals to discover, in what this pervading principle essentially consists. The death of every species of animated nature, when a very mortal epidemic is raging, shows a universal diffusion of the deleterious principle, but what that principle is, which can reach the bottom of seas and destroy at those almost unfathomable depths with the same power that lays waste man in habitations on the land will perhaps be known only to Him whose "thoughts are are not as our thoughts."

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COMMENCEMENT OF PENNSYLVANIA COLLEGE.

Commencement-week was an attractive and interesting season. The attendance of visitors, who assembled to enjoy the literary festivities, was unusually large and the services apparently afforded general gratification.

The exercises, preparatory to Commencement, were opened on the Sabbath evening preceding, with the *Baccalaureate* by the President of the Institution. It was an impressive discourse, founded on Acts xi, 24. *He was a good man*, in which the young men about to leave the Institution were urged to aim at the cultivation and exhibition of true moral excellence, and to gain the reputation of being good men.

On Tuesday afternoon the beautiful Hall of the Linnæan Association was dedicated and an address delivered by *Rev. Dr. Morris*, of Baltimore, Md. It was an appropriate and excellent discourse, illustrated in the most pleasing and forcible manner, and fully sustaining the reputation of the author.

On Tuesday evening, the annual exercises, connected with the "School of the Prophets" of this place, were held. Able addresses on the *Reformation of Italy*, and the *Obligations of science to religion* were delivered by *William Gerhart, A. M.* and *B. M. Schmucker, A. M.* representatives of the class, that has just completed the course in this department of sacred learning. The services of the evening were concluded with an interesting and instructive discourse to the Alumni of the Seminary by *Rev. F. W. Courad*, of Hagerstown, Md. on *Ministerial improvement in preaching*.

On Wednesday afternoon, the annual oration before the Literary Societies of the College was pronounced by *Robert Tyler, Esq.*, of Philadelphia, on the *Rise, progress and influence of Commerce*. It was an able and carefully elaborated production, evincing much research and abounding in a wide range of illustration. Its delivery elicited general and unqualified admiration.

Wednesday evening was occupied with the anniversary exercises of the Alumni of the College. The annual address was delivered by *A. R. Stevenson, Esq.* of Gettysburg, a member of the graduating class of 1835. The theme selected for the occasion, was the *Responsibilities and duties of educated men*, and although its discussion was protracted, the speaker was listened to with marked attention until the last. The sentiments of the address were excellent and worthy the consideration of those to whom they were addressed.

Thursday was devoted to the exercises of the graduating class. At 9 o'clock the procession formed on the College Campus and moved to the Church, where the exercises took place in the following order :

PRAYER BY *Rev. J. Heck*, of Waynesboro', Pa. "*Latin Salutatory*"—*Wm. H. Witherow*, Gettysburg, Pa. "*Providence in the History of Nations*"—*J. K. Plitt*, Philadelphia, Pa. "*Quisque sua fortuna faber*"—*John A. Bradshaw*, Lexington, N. C. "*The Burning of Moscow*"—*Wm. H. Morris*,\* Baltimore, Md. "*Greek Oration*"—*F. W. Brauns*, Baltimore, Md. "*The Spanish Character*"—*L. E. Albert*, Hanover, Pa. "*Ancient Oracles*"—*D. J. Eyer*, Waynesboro', Pa. "*The Dignity of Labor*"—*J. H. Heck*, Chambersburg, Pa. "*Geology*"—*R. A. Fink*, Middletown, Md. "*Benjamin Arnold*"—*E. G. Fahnestock*, Gettysburg, Pa. "*Free Agency of Man*"—*P. Sheeder*, Chester co. Pa. "*The Scandinavians*"—*M. Bachtel*,\* Smithburg, Md. "*The Fall of Palmyra*"—*M. W. Merryman*,\* Baltimore co. Md. "*Thomas Chalmers*"—*P. Raby*, Marion, Pa. "*The Mariner's Compass*"—*H. Jacobs*, Waynesboro', Pa. "*Retrospect of a Century*"—*M. Posey*, Juniata co. Pa. *Conferring of Degrees*—By President *Kranth*. *Aim of the Student and Valedictory*—By *A. Essick*, Franklin co. Pa. *Benediction*.

The productions of the young gentlemen were well written and generally well delivered, reflecting honor upon themselves and credit upon the College.

The degree of A. B. was conferred on the above gentlemen and *H. R. Geiger*, of Springfield, O. The degree of A. M. in course was conferred on *Rev. P. Anstadt*, *O. F. Baugher, Esq.*, *J. B. Bittinger*, *R. G. H. Clarkson*, *J. P. Clarkson*, *Rev. T. W. Corbet*, *Rev. M. Diehl*, *H. J. Fahnestock*, *J. M. Macfarland*, *J. T. Morris*, *Rev. G. A. Nixdorf*, and *B. M. Schmucker*. No honorary degrees were bestowed.

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*Receipts during September*

Rev. E. Schwartz, Manchester, Md.	\$2 00	Vol. 3, 4
" Wm. F. Eyster, Germantown, Pa.	1 00	3
" A. J. Karp, Canton, Ohio,	1 00	3
" Geo. Diehl, Easton, Pa.	1 00	3
" C. Culler, Funkstown, Md.	1 00	3
" D. H. Bittle, Middletown, Md.	1 00	3
" John E. Graeff, Washington, D. C.	2 00	3, 4
" C. W. Schaeffer, Harrisburg, Pa.	1 00	3
Charles W. Kunkel, Middletown, Pa.	2 00	2, 3
S. and J. Groschlose, Smyth Co. Va.	1 00	3
Levi C. Groschlose,            "	2 00	3, 4
Samuel Etnire, Leitersburg, Md	1 00	3
E. K. Smith, Camden, N. J.	1 00	3
S. Sheimer, Esq. Easton, Pa.	1 00	4
C. A. Brougher, Augusta Co. Va.	1 00	3
Levi Miley, Cumberland Co. Pa.	1 00	3
Samuel Fisher, Gettysburg, Pa.	1 00	3
J. K. Miller,                    "	1 00	3
Wm. J. Leib,                    "	1 00	3
John Welby,                    "	1 00	3
John E. Smith                   "	1 00	3
Phrenokosmos Society,        "	1 00	3

**Donations to Cabinet.**

1. From *Dr. Morris*, a box containing birds.
2.   " *R. G. H. Clarkson*, an impression of the seal of St. James College.
3.   " *B. F. Ewalt*, specimens of bugs, butterflies, &c.
4.   " *Rev. Davis Gibson*, Lebanon, Ill. per *Dr. Gilbert* box of shells.

**Donation to Library.**

Proceedings of the Academy of Natural Sciences, for April and May. From the Academy







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