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## Religious.

### Correlative Truths.

BY REV. M. MACGREGOR.

TWO principal sources of error, which beset the seeker after truth, are the Scylla of confounding things that differ and of uniting things that have no necessary connection, on the one hand; and the Charybdis of distinguishing where there is no difference, and of separating things necessarily connected, on the other. The former of these, like a certain ingenious toy—the thaumatrope—by rapidly whirling two different objects about each other before the mind's eye, confounds them together, producing the illusion of their identity. The latter of these, like a certain disease of the eye which deranges binocular vision, produces two different and inconsistent representations of the same mental object. The first of these fallacious methods has thrust upon the world many obstinate and pernicious errors, of which two heresies in religion—the union of Church and State, and the rite of infant baptism, both of which arise from confounding the Old and New Covenants, which latter differ in nature, duration and design—are prominent examples. The second of these fallacious methods has often rent the seamless robe, and divided the living body of truth into half-

truths—the deadliest of all errors; and it has occasioned the principal controversies in theology from the earliest church history down to the present time.

Because of the vastness of truth and the feebleness of reason, the perception of truth in its entirety is always difficult and often impossible. The various parts of truth may be readily perceived separately as facts; but the perception of their real harmony and identity is a matter of profoundest difficulty.

It may be almost or altogether impossible to show the consistency of two distinct and seemingly contradictory representations; and yet it may be possible, at the same time to prove conclusively the truth of each; to deduce the most serious errors from either one if held exclusive of the other, and to draw conclusions of the most satisfying and important nature from them both, as premises conjointly. This will be evident from the consideration of certain dual aspects of truth, or pairs of truths, apparently inconsistent with each other; for which, for lack of space, extreme brevity of treatment must suffice.

It is difficult, and perhaps eternally impossible, for finite mind to perceive where Divine Sovereignty and Human Responsibility meet, to point out the *nexus* between them, or to show how they are consistent with each other. That both are truths can be proved indisputably. The Word of God declares nothing more plainly and emphatically than the absolute and universal sovereignty of God, *de facto* and *de jure*, in nature and in grace. The mote in the sunbeam and the rolling star, the insect on the wing and the angel before the throne, are entirely under His control. The sending of the Gospel to one land rather than to another the salvation of any one soul rather than of any other, can be accounted for ultimately by Divine sovereignty alone. The overwhelming argument of the Apostle, in the 9th, 10th

and 11th chapters of the Epistle to the Romans, places this beyond dispute. Evidently, the disposal of transgressors of Divine law, to justice or to mercy, must rest altogether in the Divine prerogative.

The Word of God is equally plain and emphatic in regard to human responsibility. It underlies all Scripture, as a fundamental principle, that man is not a mere automaton, but a being having reason and conscience, individuality and will. Hence it everywhere holds him accountable for his thoughts and feelings, words and deeds, his breaches of law and his rejection of the Gospel. We know not *how* the sovereignty of God and the free agency of man can consist together; *that* is hid in the mysteries of being; but we know that both are truths in fact: *this* is manifest from revelation and experience. These truths are correlatives, and necessary to each other; either one, if held alone, would lead to serious error; into the belief of fate, in the one instance, and into that of chance, in the other. But they present no practical difficulty to their common reception; and their legitimate influence conjointly is of the highest importance, leading, as they do, to trustful acknowledgment of the Divine disposal of us here and hereafter, and to the diligent use of means for preservation and for salvation.

There are two aspects of the vicarious work of Christ presented in Scripture—one of a wider, the other of a narrower extent—in the reconciliation of which, philosophically, much difficulty has been found, and which, in consequence, have occasioned for centuries much earnest and ingenious controversy. There are many portions of Scripture which represent Christ's vicarious work as having an infinite sufficiency, and some relation to the whole world; and there are many portions again which represent it as having a certain relationship, and an actual application, no wider than the elect people of God. Christ is represented on the one hand

as *bearing the sin of the world*, and on the other as *stricken for the transgression of his people*. It cannot be proved that these two representations are inconsistent with each other. But it is not easy to contemplate them from so high a point of view, that we shall have a complete, distinct and consistent conception of both at the same time. A nearer approach to such a conception of them has certainly been attained during the progress of the investigations and controversies respecting them; and the development of theological science in the future may divest them entirely of their apparent discrepancies, and bring them more completely within our comprehension.

What is called the commercial view of the atonement has served much to embarrass this question. But a commercial transaction can never meet a moral crisis—and the predicament of sinners is pre-eminently such—any more than a moral transaction can meet a commercial crisis. Commercial terms are indeed used in Scripture effectively, but figuratively, to describe the efficacy of the atonement, and so refer, in reality, less to atonement itself than to redemption.

The distinctions discernable between *atonement* and *redemption* help materially toward a solution of this question: the one being a sacrifice offered up to God, the other being a benefit conferred upon men; the one having a primary reference to the honour of law, the other having a primary reference to the forgiveness of sins; the one being an expiation, the other a recovery; the one being a cause, the other an effect; the one being a means, the other an end.

But whether their mutual consistency can now, or ever, be a matter of direct and complete demonstration or not, it can be proved conclusively that both representations are true in fact, being supported by the infallible authority of the Word of God.

The wider aspect of the work of Christ, Infinite Atone-

ment, is supported by the universality of many gospel invitations; the condemnation of unbelievers and rejectors of Christ; the probation of the world; the universal judgment of Christ; the necessarily infinite value of the sacrifice of an infinite Person; the necessity of an infinite sacrifice to the satisfaction of Divine law, and so to the salvation of one soul or of many; and several statements of Scripture bearing directly upon the point. The narrower aspect of Christ's work, Particular Redemption, or in other words, the limited application of the atonement, in design and in fact, by the Divine purpose and by the Divine procedure, is supported by many unmistakable Scripture statements, particularly such as are connected with the decree of election, such as represent the fulfilment of it as being one of the principal objects of Christ's death, and such as refer to the definite character of His substitution.

To recede from either of these positions would lead, in the one case, to the fallacious doctrine of universal salvation; and, in the other, to the equally erroneous opinion that the non-elect are excluded from the saving benefits of Christ's work, on account of its limited nature, and not on account of their unbelief; and consequently to Divine inconsistency in unlimited gospel invitations.

But these two Scriptural representations of the Divine character, and of the Divine way, taken together, afford rational and sufficient ground for any sinner to draw near to God, and put the responsibility of the refusal so to do entirely upon the sinner himself; and, at the same time, place the benefits of Christ's death at the Divine disposal, and infallibly secure the salvation of the elect.

The Universality of Gospel Invitations and the Specialty of Effectual Calling may often appear inconsistent with each other, at first sight; and they may be irreconcilable, speculatively, to many who have no difficulty with them practi-

cally. From the fact that many gospel offers are limited to special classes of men, such as the *heavy laden*, the *thirsty*, the *enquiring* and the *willing*, many who take a limited view of the atonement have concluded that there are no more general gospel offers than these, in Scripture. But such Scriptures as represent God as calling and man refusing; as Master of the gospel feast, and saying to those who will finally refuse to come, "Come, for all things are now ready;" as commanding the gospel to be proclaimed to every creature; and as condemning unbelievers because they believe not on Christ, are surely ample authority for general and unlimited offers of the gospel.

That effectual calling, the inward and invincible summons of the Holy Spirit, whereby the gospel call is rendered efficacious, by which souls are graciously drawn to Christ, and which forms a necessary link in the chain of God's gracious purposes, extends to the eternally elect, the finally saved, and to them alone, is beyond dispute; as the New Testament everywhere makes it a distinguishing characteristic of the people of God. The rejection of either of these truths would deprive men of what they are suited to procure, the warrant for faith, in the one case, and the disposition to believe, in the other.

The Divine disposition to save all men, and the Divine decree to save some men, exhibited in Revelation, are questions which lead into the unfathomable mysteries of the Divine nature and of the Divine will. That God has "no pleasure in the death of the wicked; but that he turn from his way and live;" that "He will have all men to be saved, and to come to the knowledge of the truth;" that He is "not willing that any should perish, but that all should come to repentance," are plain statements of His own Word, which are illustrated and corroborated by the spirit of His dealings with those who will be finally impenitent, of mankind. That for rea-

sons drawn from within Himself, and inscrutable to us, God has seen fit to make "an election of grace;" that He has given a people, particular in person and definite in number, to Christ, who will give to them eternal life; that God has "chosen them in Him, that they should be holy and without blame before Him in love;" that He has "predestinated them to the adoption of children," "chosen them from the beginning unto salvation, through sanctification of the Spirit and belief of the truth"—thus electing the persons, determining the end, and ordaining the means—are direct declarations of the Word of God, the substance of which is interwoven with the whole texture of Scripture.

These two aspects of the Divine character and way, equally revealed in the Word of God, must necessarily harmonize in reality; whether apparently to us or not; and, in their legitimate influence, they afford encouragement to sinners, to cast themselves on the mercy of God in Christ, and confidence to saints who have experienced that mercy already.

The Solemn Warnings against apostacy, and the Unqualified Assurances of ultimate salvation, so frequently addressed in Scripture to the people of God, often baffle the attempts of reason to reconcile them. Springing from the inner consciousness of the child of God, is a sense of personal weakness, proneness to error, liability to fall, and contingent danger; and springing from faith in a Divine Person and in a Divine promise, there is in him also, a profound assurance of a present and eternal salvation, and a sure and certain hope of future triumph and blessedness. However difficult, therefore, it may be to reconcile these Scripture warnings and assurances in theory, they evidently quadrate with their counterpart, Christian experience; and in their practical influence, they excite the necessary virtues of personal diligence, and trust in God.

The difficulties experienced with these and with many other correlative truths, both in the Word and in the Works of

God, have their origin in the vastness of truth and in the finiteness of reason. As has been already observed, the various parts of truth may be readily perceived, separately, as facts; but their harmony and real unity is often a matter of profoundest difficulty. Reason, like the eye, perceives only one object at a time, and it is only by the rapidity of its operations, in conjunction with an acquired mental habit and a peculiar mental act, that the perception of unity in multitude is possible. The perception of unity, amid the multiplicities of light and shade, depth and distance, position and proportion, in painting; amid the complexities, involutions, and variations of compass and quality, volume and movement, in the higher harmonies of musical art; amid the magnificent outlines and minute details of architecture; and in the ideal structures of science and literature, is impossible to the novice; and is attainable only after prolonged and painful self-culture.

And the human mind must ever encounter difficulties in the study of truth; it must invariably find the solution of one problem opening the way for more and greater, along its eternal march towards the infinite. The mine of truth is inexhaustible; the realm of truth illimitable. No human system can embrace all the truth in Scripture, or all the truth in nature; neither can human reason discover or comprehend the Divine system in them, if indeed anything we understand by the term system be in them at all. To systematize our knowledge has certainly its practical advantages; but all our systems must necessarily be incomplete and imperfect, for how can the finite comprehend the infinite? and they must all change with the emergencies created by error, and the demands of advancing knowledge.

“Our little systems have their day;  
They have their day and cease to be;  
They are but broken lights of Thee,  
And thou, O Lord, art more than they.”

The soul's need of truth is paramount and perpetual; and reason is too limited in sphere and in power to furnish forth sufficient supplies. Hence the necessity for faith. We can not know; we must believe. The Scriptures, recognizing this fact, with Divine dignity state boldly the truth, in its entirety and in its extremes, without pausing to explain or to defend. For want of properly observing this fact, many men have felt constrained to endeavour to pare down the miraculous, to explain away the supernatural, and to compress the infinite, in Scripture, and in Nature. But Faith can soar where Reason stumbles; it can utilize what Reason cannot analyze; it can include what Reason cannot reach; and can harmonize, in our own experience, what Reason cannot reconcile in theory. Let not Reason, therefore, presumptuously attempt to prop up, with its unhallowed hands, the sacred ark of Truth. Let it rather abide in its proper sphere, ministering with eye and ear, to Faith, the appointed priestess of Truth; discerning what the testimony of God really is; not rashly presuming to judge what it should be.

In view of all, therefore, it is surely the part of the Christian, who lives and walks by faith, to receive unshrinkingly, believe steadfastly, cherish lovingly, and maintain fearlessly, all that Divine Authority may utter, however exalted above reason, "holding the mystery of faith in a pure conscience."

"We have but faith: we cannot know;  
For knowledge is of things we see;  
And yet we trust it comes from Thee,  
A beam in darkness; let it grow."

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Beautiful thoughts cannot pass over the mind without acting as fine files that wear away the coarser furrows.

Pictures around your room are like loop-holes of escape for the soul, leading to other scenes and days.

## How to Grow in the Knowledge of Divine Truth and How to Disseminate it.

BY PROF. JNO. CRAWFORD.

THE first step in the successful study of divine things is a deep consciousness of our need of divine teaching. There is no more effectual hindrance to a healthful growth in knowledge than for a man to imagine that he has not much need of instruction. The more a man knows the more he feels that he needs further light. "If any man think that he knoweth any thing, he knoweth nothing yet as he ought to know." "If any man among you," says the apostle, "seemeth to be wise in this world, let him become a fool, that he may be wise."

Another prerequisite to the discovery of divine truth is true, genuine conversion of heart to God. "The carnal mind is enmity against God"; and, unless this enmity be slain at the cross, this native hostility of soul to the Divine Being will draw a thick veil over His glory as it shines forth in Jesus Christ, and is displayed in the doctrines of grace.

In the study of the divine oracles we need the constant teaching of the Holy Spirit who indited them. Let the student of the Word, therefore, in all his investigations commence and continue his labours in prayerful dependence upon divine illumination. But while he thus depends upon the Holy Spirit he must not neglect the diligent and laborious use of means. The man who expects aid from above, while he is too indolent to study, will find that he has made a grand mistake. The Holy Spirit will give no man a patent for indolence.

Again, prejudice caused by worldly interest tends to warp the mind of the biblical interpreter. Cicero, who possessed a deep acquaintance with human nature, has clearly set forth

in his *De Oratore*, the chief sources of a perverted judgment. *Plura enim multo homines judicant odio, aut omore, aut cupiditate, aut irascundia, aut dolore, aut letitia, aut spe, aut timore, aut errore, aut aliqua permotione mentis, quam veritate, aut præscripto, aut juris norma aliqua, aut iudicii formula, aut legibus.*

Every student of the Scriptures, and above all, every teacher of divine truth should be careful to maintain a prayerful vigilance over the workings of his own heart; and especially when the adoption of *unpopular* truth is in question, or when the adoption of truth might be prejudicial to his worldly interests. His earnest prayer should be that he may never be permitted to forget his solemn responsibility: that his eye may be kept stedfastly fixed upon the future and eternal reward, and that he may retain a constant and abiding persuasion of the comparative worthlessness of all earthly considerations; and let him ever remember that he is the servant of Christ.

While we are to be willing to profess, and, if need be, to defend unpopular truths, we should be cautious in the adoption of novelties in theology. It is an unhealthy state of mind which leads a man to be over anxious of discovering some new theory in the word of God in order that he may thereby acquire fame. Vanity is always contemptible; but it is especially odious when it seeks an occasion for display on the oracles of God. If fame be the object of critical labour, let that labour be bestowed on Juvenal and Cicero, upon Herodotus and Demosthenes, rather than upon Moses, Isaiah or Paul.

As all theological knowledge is derived from a just interpretation of holy scripture, it is obviously of the utmost importance that we adopt no unsound principles of interpretation. There is no more prolific source of error, nor one more fertile of false teaching, no more powerful engine for per-

verting scripture, than the adoption of false principles of interpretation. Better to have no principles to guide us, nothing but our knowledge of the language to be interpreted, than to be furnished with false canons. Hence it follows that extreme caution should be observed in the study of hermeneutics, and *no principles should be adopted which are not self-evident or legitimately deduced from first principles.*

In the study of divine truth we should be satisfied with slow and certain progress, rather than with the hasty adoption of views either before a thorough and searching investigation, or before our mental advancement or such as to render us competent for such investigation. Every man that is in down-right earnest to acquire truth without any admixture of error, will find that he has sometimes to refrain either from adopting or rejecting certain views for months, or even for years, until he is enabled to procure further light. Hence it is especially of importance, in the investigation of *controverted truth*, to study with the utmost care what has been said or written on *both sides*: and here we have much need of prayerful vigilance against those prejudices which tend to darken the mind. Not only should we be in earnest to acquire a knowledge of truth, but also to avoid every particle of error. All error is injurious.

While I say we must be satisfied to remain in doubt *for a time* about some things, we should not be satisfied to *continue* uncertain about anything in the Word of God. It is no crime to hold with firmness, and to teach and defend also with firmness, any truth which we have thoroughly investigated and of which we are thoroughly convinced. A man ought to tremble either to teach or defend any doctrine or interpretation as truth unless he be himself fully persuaded of its truthfulness. If he be in doubt he ought to hold his tongue until he obtain further light. A Christian should think it

no light matter to lead his brethren into error. But after a man has, by thorough and prayerful investigation, arrived at the knowledge of any truth, he should teach it as one who thoroughly believes it; and be ready to defend it, if necessary, with confidence. If we teach in a hesitating manner, it is a proof that we are not convinced ourselves either of the *truth* or of the *importance* of the sentiments we utter; and hence these doubtful utterances will have little influence upon our hearers. If a man be thoroughly penetrated with a sense of the truthfulness and importance of what he teaches, he will deliver his message with earnestness and authority which will commonly carry conviction home to his audience; while he who undertakes to teach when he only "sees men like trees walking," while he dribbles out his hesitating oratory, will be likely to leave his audience both unmoved and unconvinced. It is true that in every age those men, who were thoroughly convinced of the soundness of the truth which they taught and of its importance, and who therefore taught and defended it with confidence and enthusiasm, have been regarded by many as men who possessed little breadth of mind, in fact as narrow bigots or shallow enthusiasts. Nevertheless, such have been the men whom God has employed in every age for the advancement of His truth and kingdom. Men like Luther, or Calvin, or Knox, or Carson, or Spurgeon, men who care but little for the verdict even of their brethren in comparison with a "Well done thou good and faithful servant" from their heavenly Master; and who are willing, however painful it may be, to be misunderstood both by the world and by their brethren, provided only they can retain the assurance that their words are stamped with the approbation of Heaven.

## Dust to Dust.

A MOURNFUL cry o'er the earth is sweeping,  
 A wail from the depths of human hearts ;  
 Where'er it passes, the voice of weeping  
 And bitter woe from the silence starts.

"Dust to dust!" from cot and mansion,  
 "Dust to dust!" over vale and hill,  
 Over deserts drear—o'er the sea's expansion  
 The cry rings on, and is never still.

"Dust to dust!" how rose-lips whiten,  
 And brows grow pale at the cruel cry !  
 How hopes die out, no more to brighten  
 The lingering look in the grief-dimmed eye !

Like a spirit's sigh, through the heart vibrating,  
 Like a hopeless wail from the darkling tomb,  
 Each note a quiver of pain creating,  
 It wafts its message of direful doom.

'Tis a bitter cry—yet a note of glory,  
 A tone of joy from the angel throng,  
 A blessed strain of the "Old, old story,"  
 Is mingled still with the saddened song.

Swift from the banks of the pure life-river,  
 Soft from the hills of Paradise,  
 The glad strain floats, till the dread and quiver  
 The anguished pain of the death-song dies.

O Eden song ! what hope and gladness,  
 What dreams of rest, and joy, and love,  
 Thy notes breathe over the spirit's sadness !  
 What calming thoughts of the home above.

A glory lingers around death's portals :  
 Through the dark valley a radiance gleams ;  
 Down o'er the spirits of earth-worn mortals,  
 A ray of Heaven divinely beams.

MAGGIE SINCLAIR.

A Letter from India to the Judson Missionary Society.

ONGOLE, Aug. 28th, 1872.

**M**Y VERY DEAR FRIENDS,—I was down at Ramapatam last week and saw the printing press, your valuable gift to the Telugu Mission. I can assure you that it is with feelings of gratitude and pride we look upon any token of your interest in us and the Mission, and every fresh evidence of energy and devotion to the cause of our dear Redeemer. We intently watched each paper as the roll of names increased, and blessed each one in turn till the whole was complete. The press will be stationed at Ramapatam, I expect, as it would be better to have it near the Seminary. We thank you heartily for the press, and ask God to abundantly bless in their souls and bodies and substance all those who have in any way contributed to the success of the undertaking. We hope to print tracts, pamphlets, scripture portions, lessons, &c., &c., upon it; and who shall tell how many, in ages to come, shall bless God for the gift you just lately sent us! I believe the waves of influence will be bounded by eternity alone.

This also shows that the missionary spirit is still living,—but where are the rest of our missionaries? I hear nothing from them just now. It may be that they are in course of preparation, but remember there are three years since your last left. *Three-fourths* of the Telugu Mission is now on the shoulders of your missionaries, and it is slowly crushing out their life. This is no fanciful statement. Bro. Timpany told me as much as that the other day; and I know *flesh* and *blood* cannot stand this strain *very long*. Bro. Timpany has a rapidly enlarging mission, and the School or Seminary, at least he has the oversight of it. I have a field more than three times as large as either of the others. Will you not send us help? We have a natural

craving to live long and work long. We think it poor economy to kill ourselves with anxiety and hard work. Besides, we have no time to *read, study and grow*. We must be working machines unless we get a little more time.

In your speeches, orations and essays, you grow eloquent over "the labours of *our devoted* missionaries." Come and *share* their devotion. Is it a glorious privilege to be a missionary? Come, *enjoy* that privilege; the door is open. Is it an arduous work? Come, help bear the toil. Shall there be a blessed reward? Come, brethren and sisters, and share that reward.

If it is a life of self-denial and monotonous toil, is it fair that the *few* should be left to deny themselves. If it is a work of immortal honour and glory, is it not strange so few enter upon it? Think upon these things and come.

The missions are still prosperous. Bro. Timpany was out lately for a little over four weeks, and baptized 104 persons, precious gems for Jesus' crown. I was out at the same time about three weeks and baptized 72, and the Sabbath after coming in, baptized in Ongole 19. In Nellore they are baptizing almost every Sabbath. I have twelve school teachers now on this field. They are now with me taking lessons in Timothy. There are twenty preachers; these also spent a month with me (May) studying Romans. They also get half-a-dozen lessons every time they come in, which is generally once a month. This helps them very much, but still their stock of knowledge is very small.

Now I must bid you good-bye, hoping your Society is vigorous, and that you may be the means of stirring up the missionary spirit in many souls, and aiding much in spreading abroad the Saviour's name.

I am, with very fond recollections,

Your brother in Christ,

JOHN MCLAURIN.

## Literary.

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### Science in the Institute.

BY PROF. J. MONTGOMERY, M.S.

ALMOST all admit at the present time, that science should form a part of every college course of study.

Indeed it may be assumed as demonstrated, that any course of instruction that is exclusively classical, exclusively mathematical, or exclusively scientific, is defective; more than this, any course of study that does not at least include these three departments may be considered very faulty. Most of our universities and colleges make ample provision for classics and mathematics, but very few of them come up to a true standard in science.

I shall briefly state what I conceive to be the work of the university and the first-class college in science, and follow with some views in regard to the amount of this work we can, or ought to do in the Institute.

While I would not diminish, in the least, the amount of classics and mathematics required in our colleges and universities, I would materially increase the course in science.

Science may be made an excellent means of discipline; and it will be as useful in after life as anything taught. But to state what should be done in this department, I should say that the first object should be to teach the great fundamental principles of the various branches of science.

Examination will show that too many institutions of high standing are not as scrupulous about this as they should be. How many professors dwell too much upon pet theories, or lay too much stress upon the minutiae of a favourite subject, and neglect, or but half teach fundamental principles. The

grand outlines of some departments of science may be seen and appreciated without much knowledge of details. The liberally educated man may have the broad general view, leaving the working out of minor matters to the special student.

I do not mean that a superficial knowledge is all that is required—very far from it—but that the great general principles are to be learned.

To illustrate : a man may spend all the time of his college course in the study of butterflies, but his education would fall far below the true aim, while one who should devote a fourth of the time to the careful study of the distinguishing characteristics of the sub-kingdoms, and the classes and orders under them, would have made far more advancement in the right direction.

In the next place, every university should be prepared to give very extended instruction in all departments of science to those who desire it. It is not intended to advocate the false view, that man should study only that which he expects to practise in after life ; but, that after receiving the thorough discipline that a well balanced general course will impart, a student should find the means in the university of further prosecuting study in special departments.

Again, the university should keep up with the times in all of its departments. New questions in history, philology, philosophy, and especially new discoveries in science, should be presented to the student.

Probably there is no department of educational work of more importance than this. How many teachers cling to old or exploded theories. How many are utterly incapable of presenting the new ones. One university retains old mathematical works, teaching nothing of modern methods. The professor of chemistry in another holds on to the old nomenclature, because he thinks the new system is in a transition

state. In another, the professor who of all others should know, has not heard of an important piece of apparatus, although a score of articles have been written upon it in the different scientific journals. These examples are no suppositions, but actual facts.

Every university should furnish the advanced student with the means of making special investigation in science, that is, he should be furnished with proper apparatus for making researches, entirely original, or at least new to himself—something not laid down in the curriculum, and, for the most part, planned by himself, and prosecuted by his own methods. As, for example, the examination of some formation of rocks, and a careful presentation of facts and deductions in an essay.

The formation of a collection of birds or insects, with an accurately prepared description and classification.

A series of experiments upon the propagation and growth of plants under peculiar circumstances.

A series of experiments to determine the amount of ozone, or the amount of free electricity, in the air.

An analysis of the waters of the springs and streams of the vicinity ; and hundreds of other things that the earnest student will readily think of.

Such work would usually be done by post graduates, and of course under the direction of the professor, otherwise many useless things might be undertaken,

Every university should supply itself, if possible, not only with all the apparatus necessary to illustrate its prescribed course of instruction, but with different varieties of the same kind. One instrument will illustrate the principles of the thermometer, but it would be much better to have several varieties, with Fahrenheit, Reaumur, and centigrade scales. One polariscope will illustrate the principles of polarized light, but several should be owned, as Noremborg's, Amici's, Airy's, Dove's, &c.

A good museum should be formed, and then it should be made useful to the student. Too many valuable collections are not used at all, and only serve as objects of curiosity to the multitudes that almost daily visit them.

If the above are some of the conditions that every first-class university must fulfil, it must be admitted that they are objects of no easy attainment.

However, the difficulties are not insurmountable, and it ought to be the aim of every institution of high grade to overcome them.

But I must turn to the scientific wants of the Institute. We do not now propose to attempt the work that a great university should do, but there are some things we can and ought to do.

We should teach the fundamental principles of all those sciences included in our course of instruction.

We should endeavour to give our pupils an intelligent general idea of the advancement in science and the new phases it puts on.

We can conduct special investigation in certain departments.

While we cannot expect to have a very large amount of apparatus, we should have a well selected supply of all that is most useful for the elucidation of the fundamental principles we undertake to teach.

Let me now particularize a little. We have in our course of study botany, chemistry, physiology, zoology, geology, natural philosophy and astronomy.

Of all these subjects, botany should first be introduced to the notice of the pupil; and, were it possible, a course of elementary instruction should be placed in the preparatory department.

A class exercise might be conducted without a text-book, in such a manner as to lead the pupils to discover for themselves all the more obvious facts of elementary botany.

After this, it would be taken up as a regular study as usual, and, to finally complete the subject, a larger text-book might be used in connection with lectures, use of microscope and special investigation.

Considerable time might be spent in pressing flowers, and preparing other botanical specimens, without trespassing upon other portions of the course.

Natural philosophy should come next in order, and this also ought to occupy two places in the course.

The instruction in the preparatory department being calculated to draw attention to common things in such a way as to teach the pupil to observe and compare facts and to some extent, to think and investigate for himself. With this arrangement more time could be given in the advanced class to the solution of problems adapted to fix principles upon the mind of the student.

In physiology and comparative anatomy a few skeletons of different animals would be of great use. Prepared specimens of Ontario birds and mammals, or good charts, or a good magic lantern with natural history slides, would possess a still greater value.

In connection with our study of geology and minerology, we need more specimens of the principal rocks and minerals.

There should be a work-room especially fitted up for students in botany, zoology, and geology, where flowers could be pressed, specimens of wood cut and arranged, seeds put up and labelled, microscopic objects mounted, skins of animals stuffed, minerals polished, &c.

In astronomy we cannot expect to do much at present. If, however, our small telescope were mounted on a stone or brick foundation inside of, even, a small wooden building, we might use it considerably, and perhaps gradually accumulate other appliances by means of which something more important could be done.

There is no subject in our course upon which we can more profitably spend time and money than upon chemistry. Our prescribed work, although now lengthened, should still have some additions to it.

We need, first of all, a suitable room fitted up in a proper manner, and stocked with proper apparatus for manipulation.

I doubt very much if chemistry is best taught by putting the text-book in the student's hands and compelling him to commit a horde of facts, too often without showing any connection between them. Probably no subject can be more successfully "crammed" than chemistry. It is not intended, however, to discuss best methods of teaching chemistry.

But, had we a room fitted up with some of the less expensive apparatus, where students could become acquainted with most of the elements and their compounds by actually seeing them and producing them, where they could each work out the lesson in the text-book, and perform the more simple experiments that might be given in a course of lectures, I am satisfied that a new impulse would be given to the study, and that the elementary principles would be imparted with much more ease and certainty.

To give the instruction that we ought to give in the subjects of chemistry and natural philosophy, and to give it properly, our supply of apparatus should be materially increased, and at the earliest opportunity possible.

There can be no doubt but that a work-room with a turning lathe and tools would be of very great advantage to us; for in it apparatus might not only be repaired, but apparatus of no mean construction may be, and has often been made by skilful students. There are scores of things that might be thus added to our stock of apparatus that we cannot hope to purchase for a long time to come.

In regard to giving our pupils some information relative

to the advances in science, and to new phases of thought in other departments, all we can hope to accomplish for the present must be done by occasional lectures, each professor turning his attention to a particular department. One to science, one to metaphysics, especially to the so-called modern philosophy, another to philology, &c.

Lastly something may be done in special investigation. The observations we have been taking for some time are a kind of specialty. Something more in this direction might be done.

It would be easy to suggest special lines of investigation for most of the subjects taught in the department of sciences, that our students might engage in, without loss of time, and yet greatly to their advantage.

If so much is to be done in our school, and I believe it can be done, and ought to be done, it is easily seen that it will take time, labour and money. A great deal can be done, however, without much means by pupils and teachers.

Let us, then, set the example in the hope that our friends who have the money will supply the means of fully attaining the very best results in the scientific work we undertake: and let us not only endeavour to accomplish so much, but let us strive to attain the high position that will ultimately enable us to give instruction as extensive and as thorough as the great work of education demands.

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## The Island of Time.

I LIVE upon an island in the sea,  
 An island walled around with ridgy rocks,  
 And scooped into a valley wherein dwell  
 A busy race. From morn till night the sound  
 Of trampling feet, of striving tongues I hear.  
 From night till morn the flood of sound flows on,  
 Save that one mid-night hour it lapses back  
 Almost to silence; and, as from a dream  
 Waking, I know myself again, and hear  
 A sound that seems of solemn silence born—  
 The ceaseless dashing of the thunderous waves—  
 The long, long waves that one by one swing up  
 Against the rock wall, and nigh overleap  
 Its mighty barriers. I can almost think  
 I feel the in-blown spray upon my face,  
 As in still awe, with ears compelled I hear  
 The solemn sound, and move with feet compelled  
 Nearer and nearer to the solemn shore.  
 Oh! in the day time I will lift my voice,  
 Till all my fellow men shall hear my cry  
 "Hark! hark! th'eternal waves devour the shore,  
 Come up, and build us battlements heaven-high,  
 That when the rocks shall crumble, we may yet  
 Defy the leaping surge."

But, list! my soul.

I hear a Voice among the winds of night:  
 "Yea, build ye Babel high, or heaven-high.  
 If so you can, your towers and battlements,  
 The unheeding waves with undiminished might  
 Beyond your vanished structures will advance  
 Resistless."

"O, thou Voice among the winds!

Behold I evermore draw near the shore,  
 And the waves evermore tear at the rocks.  
 What shall I do, what shall my brethren do,  
 At that supreme last moment when the sea,  
 Sweeps all its tempest fury o'er our heads?"  
 And thus the Voice among the winds replies:  
 "Behold yon rock among the rocks alone  
 In majesty, its pinnacle star-crowned.  
 Lo, its eternal bases moveless stand  
 Among the waves, while they advancing kneel  
 To kiss its feet. Go, hide ye in its clefts,  
 And there ye shall abide for ever safe."

MISS M. MCGINN.

## Yesterday and To-day.

WE cannot always bind down the mind to the work of gathering facts, nor to close reasoning concerning their mutual relations. Sometimes it will take flight over the whole field of inquiry and gather intuitive knowledge not from each individual circumstance, but from the whole combined. Thus in the department of history we find it a pleasant recreation to give over for a time the laborious search after simple facts and permit the mind to soar free over the great field, whether it gropes in the mists of the distant past or strives to find the bounds of the great present. In this flight much is seen to cause thought.

It is not long, only a little while, the way the world goes, since that which is now called the civilized world was enveloped in almost unbroken gloom. Mediæval darkness rested like a pall upon the nations of Europe, upon the grand old empires of Asia, and upon a world yet unborn in the west. The sable mantle of intellectual night overspread the world and it slept. Only now and then was the gloom broken for a moment, as a Charlemagne, like a bright and terrible meteor, rose from the political horizon, to live for a moment and then die, leaving the darkness even more intense; or as a torch-like flame lit up the Pyrenees or blazed on the banks of the Po, telling that yet one more was witnessing for Jesus, and would soon put on a heavenly robe, even brighter than that winding sheet of flame.

By means of those old musty manuscripts that for ages were hidden in the lumber rooms of monasteries we can pierce this gloom, and, far beyond the dark ages, catch glimpses of another of the world's days, a yesterday of civilization, whose light, though perhaps more evanescent than that of to-day, was by times even more brilliant.

Old Greece and Rome in their palmy days bequeathed to

us a treasury of literature. Their time-worn tomes that adorn the shelves of our libraries reveal to us the noon-day brightness of that grand yesterday. Even the brightest lights of to-day would be dim indeed did they not borrow from their grand old masters. The morning too of that day throws a mellowed light upon the present. Letters, the pledge of civilization coming from ancient Phœnicia, the arts and principles of science that owe their origin to the early enlightenment of Egypt, the rudiments of philosophy that found birth in distant Oriental climes, and above all that pure and undying light that shone forth from the Sun of Righteousness, all are telling the present, the To-day, how bright and glorious yesterday was.

But, in striving to pierce the gloom of this night, it is only *occasional* glimpses of light we can catch, for we strain the eye in vain to catch one bright ray from the ancient home of the Britons, or aught that would tell us of the Frank's sunny clime or the Fatherland of the German. We turn from these thoughts for the view we sometimes think we can catch of our own Alfred or Canute is lost in the darkness that intervenes; and the songs too of Ossian, though by times sublime in the fitful gusts of their strange melody, do but confuse images like those.

The world is only now emerging from the darkness of that night. The morn is only breaking. We, in new-born America, enjoy a light, civil and religious, that is like a summer for our growth, and in Europe mid-day brightness shines, but beyond the land of Milton, of Goethe and of Homer there is night. To-day, five hundred millions of our fellow men are enveloped in Pagan darkness. Those Oriental climes, in whose very names there is poetry, where once the star of learning neared the zenith, now lie in mental obscurity: lands once noted as the birth-place of the arts and sciences are now sunken in intellectual gloom; the mid-

night darkness of the past still clings to the fairest portions of the world, and nations once bright with the light of knowledge, and in whose midst the Sun of Righteousness once diffused the light of truth that should penetrate even the dark recesses of the soul, are now grovelling in barbaric night.

Though in the West morn has risen into noon-day, yet in the distant East, the benighted millions, with extended hands and suppliant voice call to us for light :

“ A cry from afar comes over the deep,  
’Tis the wail of souls as they wait and weep ;  
They sit in the shade and gloom of night,  
As they call to the nations afar for light.”

Then, brethren, let us arise in the name of the Master and for the sake of humanity and roll back the flood of light, that *there* long ago sprung into existence and has struggled through intervening centuries to dawn upon us, that once more the Orient may glow with brightness.

N. WOLVERTON.

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## Lake Huron.

IT is evening on Huron's pleasant waters, though the gloriously-crowned Day-King still sends smiting glances over the ripple of waves. How the boat speeds on—on through the changing glories of the time and place! It is an hour of exquisite enjoyment. The suffocating cabin, the cramped deck, the rough voices of the men below—everything unpleasant is forgotten.

But some one has said that half one's enjoyment of anything consists in having others share that enjoyment. So, if you please, you devotee of literary pleasures, leave that quiet nook, lay aside that rather suspicious looking yellow-covered volume, and participate in this free, priceless entertainment. See how the blue waves we have passed, stretch away and away in endless flow—waves of time, they almost seem, extending back to the eternity of the past.

On the right the shore, distinctly visible, varies as the shifting scenes of a panorama. Now we glide past hoary hills, dotted with white cottages and green meadows, and crowned with groups of trees: again a river comes flashing, singing through the sunlight to pay its tribute to the lake; or a valley, quaint and sombre, holds its treasures of century-burdened forests. For a time we forget the blue lake and the sunlight, and fancy wanders through the deep shades, hearing the stealthy foot-fall of the red-browed hunter as he slowly retreats before the "pale face," and yet further back, we hear the lone cry of bird or the howl of wild beast—the only denizens in the far solemn past.—Hark! was that the wind? or was it a faint muttering of thunder from those heavy masses of clouds gilded so magnificently? How grand! a broad undimmed expanse, and then those burnished cloud-mountains! old Sol smiling a gracious good-night to earth! and the waves: how they rise and fall, and

gambol in the slanting, softened sun-rays! what varied hues are pictured in nature's magnificent mirror!—

“Bits of cloud belt and of rainbow,  
In strange alternate braid.”

Gleamings of gold and sparklings of silver; tints of amber and green, and purple—almost every lovely hue mingling in bewitching confusion! Brighter the splendours grow for a moment, but only for a moment: they are fading now. Slowly, surely, right royally, the day-king has swept from sight; but yet the waters are not shorn of all their loveliness. Let us lean over the deck and look into the depths below. How the waters curl and flash, and leap up in delicate feathery spray! wreathing themselves into fairy forms that roll away in gentle mellow curves.

But another visitant has appeared upon the scene. The Queen of Night has arisen in fairest splendour. Moonlight upon the waters! Thought will not fashion into words language is too tame to describe it. The “sentinel stars,” too, decorate the nocturnal scene, and each wave is gemmed with a million images of tremulous radiance. Earth is almost too fair to-night, and Heaven seems scarcely beyond the blue dome and the stars. But, already, we have neared the port. Adieu, fair Huron! storms may rage upon thee, and proud ships lie stranded on thy shores, but we will ever remember the setting sun, the peaceful moonlight, and all the untold raptures of that hour.

MAGGIE SINCLAIR.

## Selected.

### Blindness and the Blind.\*

THIS interesting volume is rendered still more interesting by the fact that its author has been blind from early infancy. Mr. Levy is the Director of the Association for promoting the General Welfare of the Blind. His position has enabled him not only to collect a variety of curious facts with regard to those who are thus afflicted, but also to give the results of much practical experience. The writer considers it advisable that blind children should be treated as far as possible like "sighted" children, and that their freedom of action should be encouraged from earliest youth. It is a mistake to make them too dependent: a most mischievous mistake to forbid them walking out alone from fear of possible mishaps. The blind child should be taught to do everything for himself, and "should be permitted to join in common recreations, such as leap-frog, hoop-bowling, skipping with rope, shuttlecock, marbles, &c., and even the sports of sliding and snowballing should not be forbidden, as they greatly tend to strengthen the system, and to give a correct idea of distance. Riding on horseback, when attainable, will be found of great service, and gymnastic exercises are much to be commended." We are reminded too by the writer's narrative, that while blind children may follow most of the sports of childhood, blind men and women are not debarred from a number of pursuits for which eyesight might be deemed indispensable. Thus we read once more of the brave John, King of Bohemia, who died fighting valiantly, and whose motto, "Ich dien" is now worn by the Prince of Wales; of Count de Pagan, who on becoming blind devoted himself to the study of fortifications and of geometry; of Dr. Nicholas Saunderson, who, although blind almost from his birth, lectured on optics, and was Professor of Mathematics in the University of Cambridge; of Sir John Fielding, half brother of the great novelist, and Chief Magistrate of Bow Street Police Court, whose "acuteness

\* *Blindness and the Blind: or a Treatise on the Science of Syphology.* By W. Hanks Levy, F.R.G.S., London.

on the magisterial bench may have been equalled, but has never been surpassed;" of Huber, the eminent Naturalist, who invented the glass beehives now in common use; and of James Holman, who travelled without an attendant through a large portion of Europe, penetrated five thousand miles into the Russian dominions, performed a voyage round the world, and actually on one occasion saved the vessel by taking the helm. There was a certain John Metcalf, who seems to have pursued his numerous avocations without much hindrance from the loss of sight. It is at least difficult to imagine what more he could have done had he been able to see. As a boy he went birds-nesting with his school-mates; as a young man he followed the hounds, he learnt to swim and to dive, had the reputation of being a good boxer, was a good musician, dealt in woollen goods and also in horses, established public conveyances, became a builder and contractor, built bridges, laid down roads, made drains, and accomplished some difficult engineering works which people who had their sight declined.

One of the most interesting portions of the volume is devoted to a consideration of the unrecognized senses. Mr. Levy writes:

"Whether within a house or in the open air, whether walking or standing still, I can tell, although quite blind, when I am opposite an object, and can perceive whether it be tall or short, slender or bulky. I can also detect whether it be a solitary object or a continuous fence, whether it be a close fence or composed of open rails, and often whether it be a wooden fence, a brick or stone wall, or a quick-set hedge. I cannot usually perceive objects if much lower than my shoulder, but sometimes very low objects can be detected. This may depend on the nature of the objects, or on some abnormal state of the atmosphere. The currents of air can have nothing to do with this power, as the state of the wind does not directly affect it; the sense of hearing has nothing to do with it, as when snow lies thickly on the ground objects are more distinct, although the foot-fall cannot be heard. I seem to perceive objects through the skin of my face, and to have the impressions immediately transmitted to the brain. The only part of my body possessing this power is my face; this I have ascertained by suitable experiments. Stopping my ears does not interfere with it, but covering my face with a thick veil destroys it altogether. None of the five senses have anything to do with the existence of this power, and the circumstances above named induce me to call this unrecognized sense by the name of 'Facial Perception.'"

This power of seeing with the face is diminished by a fog, but not by ordinary darkness. At one time Mr. Levy could tell when a cloud obscured the horizon, but he has now lost that power, which he has known several persons to have who were totally blind. The service rendered by this facial perception will be obvious from the following remarks :

“ When passing along a street I can distinguish shops from private houses, and even point out the doors and windows, and this whether the doors be shut or open. When a window consists of one entire sheet of glass, it is more difficult to discover than one composed of a number of small panes. From this it would appear that glass is a bad conductor of sensation, or at any rate of the sensation specially connected with this sense. When objects below the face are perceived, the sensation seems to come in an oblique line from the object to the upper part of the face. While walking with a friend in Forest Lane, Stratford, I said, pointing to a fence which separated the road from a field, ‘ Those rails are not quite so high as my shoulder.’ He looked at them and said they were higher. We, however, measured, and found them about three inches lower than my shoulder. At the time of making this observation I was about four feet from the fence. Certainly in this instance facial perception was more accurate than sight. When the lower part of a fence is brick work, and the upper part rails, the fact can be detected, and the line where the two meet easily perceived.”

A similar sense belongs to some part of the animal creation, and especially to bats, who have been known to fly about a room without striking against anything, after the cruel experiment of extracting their eyes had been made. We may add, in conclusion, that all the system of printing for the blind are reviewed by Mr. Levy, and that his little volume abounds with curious details, on a subject which has an interest for every one.—*From the Spectator.*

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### Unseen.

AT the spring of an arch in the great north tower,  
 High up on the wall, is an angel's head,  
 And beneath it is carven a lily flower,  
 With delicate wings at the side outspread.

They say that the sculptor wrought from the face  
 Of his youth's lost love, of his promised bride,  
 And when he had added the last sad grace  
 To the features, he dropped his chisel and died.

And the worshippers throng to the shrine below,  
 And the sightseers come with their curious eyes,  
 But deep in the shadow, where none may know  
 Its beauty, the gem of his carving lies.

Yet at early morn on a midsummer's day,  
 When the sun is far to the north, for the space  
 Of a few minutes, there falls a ray  
 Through an amber pane on the angel's face.

It was wrought for the eye of God, and it seems  
 That he blesses the work of the dead man's hand  
 With a ray of the golden light that streams  
 On the lost that are found in the deathless land.

A. J. C.

*Spectator.*

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### Educational Veneering.

VENEERING is a great art. It makes things "go so much further," and there is nothing an economist likes so much as to make things hold out. Our ancestors were so foolish as to build solid mahogany tables, bureaux, and sideboards. We know better. We have found out that a piece of wood a sixteenth of an inch thick will transform the commonest wood into mahogany or rosewood. And so the honest old tables and sideboards have given place to the sleek veneered ones, which look just as well.

A monument should be built to the man who discovered this wonderful art, for its applications are so numerous. The crockery men sell imitation china; they have learned the art of veneering. The rogue veneers himself with the dress and manners of a gentleman. The cook veneers his dishes. The shaky broker veneers his credit by keeping up appearances. The parson, alas! sometimes veneers his sermons with thin layers of learning. The doctor veneers his conversation with sounding phrases. The politician veneers his thieving by thin patriotism. The fortune-hunter veneers his cupidity with professions of love. What a wonderful art it is! How badly we should feel if the veneering were taken off and all our purposes, acquirements and pretensions appeared the naked pine and poplar which they are.

But when it comes to education, we wish veneering had

never been invented. And now that George and Maria are about to begin school, let us enter our protest against venerating establishments. There are schools for boys and hundreds of schools for girls, where the whole business transacted is the putting on of a thin layer of outward appearances. Everything is taught from a compend. History is boiled down to a strong decoction of facts and dates, and Ann Matilda is required to swallow it. "There were five thousand on one side, commanded by Gen. Brown. There were seven thousand on the other, commanded by Gen. Smith. Gen. Smith was surprised on Sunday morning, and driven back with a loss of five hundred men and three pieces of artillery." This Ann Matilda, and Ann Matilda's parents, and Ann Matilda's friends, fondly believe, is history. It is paid for as history, and labelled history, and must be history. But whatever there is of philosophy, of poetry, of culture, of mental discipline in history is gone. This desiccated extract has no nourishment whatever. Of the peculiarities of race, of the domestic life, of the underlying causes of history, Ann Matilda learns nothing. She has swallowed a register, a gazetteer, but not a history. But she has passed her examination and "graduated." Her education is all right. It has the seal of the proper authorities on it, and she can go in peace.

English literature is worse taught than history. It is a thing that cannot be learned from a compend. The very essence of the highest culture for people, who speak the English language is in English literature. But no one can learn English literature at second-hand. A good thorough knowledge of the authors themselves in their works is the only road to this culture. And all short-cuts are delusions.

The great mistake in the education of girls, and for that matter of boys, is that they master nothing. A little here and a little there is the plan. The object seems to be to enable the pupil to give a long catalogue of things studied. And for this charlatanism the parents who demand it are chiefly responsible. There are schools which are thorough. It is not for us to point them out, but for parents to be sure that they are not caught with the chaff of an empty pretence. In education, veneering will peel off.—*H. and H., Southern Collegian.*

## A New Theory of Volcanoes.

THERE are few subjects less satisfactorily treated in scientific treatises than that which Humboldt calls the reaction of the earth's interior. We find, not merely in the configuration of the earth's crust, but in actual and very remarkable phenomena, evidences of subterranean forces of great activity, and the problems suggested seem in no sense impracticable. yet no theory of the earth's volcanic energy has gained general acceptance; while astronomers tell of the constitution of orbs millions of times further away than our own sun, the geologist has hitherto been unable to give an account of the forces which agitate the crust of the orb on which we live.

A theory has just been put forward respecting volcanic energy, however, by the eminent seismologist, Mallet, which promises not merely to take the place of all others, but to gain a degree of acceptance which has not been accorded to any theory previously enunciated. It is, in principle, exceedingly simple, though many of the details (into which we do not propose to enter) involve questions of considerable difficulty.

Let us, in the first place, consider briefly the various explanations which had already been advanced. There was first the chemical theory of volcanic energy, the favourite theory of Sir Humphrey Davy. It is possible to produce on a small scale nearly all the phenomena due to subterranean activity by simple bringing together certain substances and leaving them to undergo the chemical changes due to their association. As a familiar instance of explosive action thus occasioned, we need only mention the results experienced when any one unfamiliar with the methods of treating lime endeavours over hastily to "slake", or "slack" it with water. Indeed, one of the strong points of the chemical theory consisted in the circumstance that volcanoes only occur where water can reach the subterranean regions, or as Mallet expresses it, that "without water there is no volcano." But the theory is disposed of by the fact, now generally admitted, that the chemical energies of our earth's materials were almost wholly exhausted before the surface was consolidated.

Another inviting theory is that according to which the earth is regarded as a mere shell of solid matter surrounding a molten nucleus. There is every reason to believe that the whole interior of the earth is in a state of intense heat; and

if the increase of heat with depth (as shown in our mines), is supposed to continue uniformly, we find that at very moderate depths a degree of heat must prevail sufficient to liquify any known solids under ordinary conditions. But the conditions under which matter exists a few miles only below the surface of the earth are not ordinary; the pressure enormously exceeds any which our physicists can obtain experimentally. The ordinary distinction between solids and liquids cannot exist at that enormous pressure: a mass of cold steel could be as plastic as any of the glutinous liquids, while the structural change which a solid undergoes in the process of liquifying could not take place under such pressure even at an enormously high temperature. It is now generally admitted that if the earth really has a molten nucleus, the solid crust, must, nevertheless, be far too thick to be in any way disturbed by changes affecting the liquid matter beneath.

Yet another theory has found advocates. The mathematician Hopkins, whose analysis of the molten-nucleus theory was mainly effective in rendering that theory untenable, suggested that there may be isolated subterranean lakes of fiery matter, and that these may be the true seat of volcanic energy. But such lakes could not maintain their heat for ages, if surrounded (as the theory requires) by cooler solid matter, especially as the theory also requires that water should have access to them. It will be observed also that none of the theories just described affords any direct account of those various features of the earth's surface—mountain ranges, tableland, volcanic regions, and so on, which are undoubtedly due to the action of subterranean forces. The theory advanced by Mr. Mallet is open to none of those objections. It seems, indeed, competent to explain all the facts which have hitherto appeared most perplexing.

It is recognized by physicists that our earth is gradually parting with its heat. As it cools it contracts. Now if this process of contraction took place uniformly no subterranean action would result. But if the interior contracts more quickly than the crust, the latter must in some way or other force its way down to the retreating nucleus. Mr. Mallet shows that the hotter internal portion must contract faster than the relatively cool crust; and then he shows that the shrinkage of the crust is competent to occasion all the known phenomena of volcanic action. In the distant ages when the earth was still fashioning, the shrinkage produced the ir-

*regularities of level* which we recognize in the elevation of the land and the depression of the ocean bed. Then came the period when as the crust shrank it formed *corrugations*, in other words, when the foldings and elevations of the somewhat thickened crust gave rise to the mountain-ranges of the earth. Lastly, as the globe gradually lost its extremely high temperature, the continuance of the same process of shrinkage led no longer to the formation of ridges and tablelands, but to local crushing down and dislocation. This process is still going on, and Mr. Mallet not only recognizes here the origin of earthquakes, and of the changes of level now in progress, but the true cause of volcanic heat. The modern theory of heat as a form of motion here comes into play. As the solid crust closes in upon the shrinking nucleus, the work expended in crushing and dislocating the parts of the crust is transformed into heat, by which, at the places where the process goes on with the greatest energy, "the material of the rock so crushed and of that adjacent to it are heated even to fusion. The access of water to such points determines volcanic eruption."

Now all this is not mere theorizing. Mr. Mallet does not come before the scientific world with an ingenious speculation, which may or may not be confirmed by observation and experiment. He has measured and weighed the forces of which he speaks. He is able to tell precisely what proportion of the actual energy, which must be developed as the earth contracts, is necessary for the production of observed volcanic phenomena. It is probable that nine-tenths of those who have read these lines would be disposed to think that the contraction of the earth must be far too slow to produce effects so stupendous as those which we recognize in the volcano and the earthquake. But Mr. Mallet is able to show by calculations which cannot be disputed, that less than one-fourth of the heat at present annually lost by the earth is sufficient to account for the total annual volcanic action, according to the best data at present in our possession.

This would clearly not be the place to follow out Mr. Mallet's admirable theory into all its details. We must content ourselves with pointing out how excellently it accounts for certain peculiarities of the earth's surface-configuration. Few that have studied carefully drawn charts of the chief mountain-ranges can have failed to notice that the arrangement of these ranges does not accord with the idea of upheaval through the action of internal forces. But it

will be at once recognized that the aspect of the mountain-ranges accords exactly with what would be expected to result from such a process of contraction as Mr. Mallet has indicated. The shrivelled skin of an apple affords no inapt representation of the corrugated surface of our earth, and according to the new theory, the shrivelling of such a skin is precisely analogous to the process at work upon the earth when mountain-ranges were being formed. Again, there are few students of geology who have not found a source of perplexity in the foldings and overlappings of strata in mountainous regions. No forces of upheaval seem competent to produce this arrangement. But by the new theory this feature of the earth's surface is at once explained; indeed, no other arrangement could be looked for.

It is worthy of notice that Mr. Mallet's theory of volcanic energy is completely opposed to ordinary ideas respecting earthquakes and volcanoes. We have been accustomed vaguely to regard these phenomena as due to the eruptive outbursting power of the earth's interior; we shall now have to consider them as due to the subsidence and shrinkage of the earth's exterior. Mountains have not been upheaved, but valleys have sunk down. And in another respect the new theory tends to modify views which have been generally entertained in recent times. Our most eminent geologists have taught that the earth's internal forces may be as active now as in the epochs when the mountain ranges were formed. But Mr. Mallet's theory tends to show that the volcanic energy of the earth is a declining force. Its chief action had already been exerted when mountains began to be formed; what remains now is but the minutest fraction of the volcanic energy of the mountain-forming era; and each year, as the earth parts with more and more of its internal heat, the sources of her subterranean energy are more and more exhausted. The thought once entertained by astronomers that the earth might explode like a bomb, her scattered fragments producing a ring of bodies resembling the zone of asteroids, seems further than ever from probability; if ever there was any danger of such a catastrophe, the danger has long since passed away.—*From the Spectator.*

## Editorial.

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EDITORS :

J. J. WHITE, N. WOLVERTON, IRA SMITH.

AS we expected, some into whose hands the first number of THE TYRO fell, were pleased with it, and some were not; some thought it quite creditable, while some thought it quite the reverse. Yet, upon the whole, we are thankful for the kind reception accorded to it. Considering that those who conduct it are *students*, and that, as the title indicates, it professes to be but an incomplete *beginning* of something to be improved, it cannot be surprising that it contained many imperfections. The beginning of everything undertaken by human hands falls far short of perfection, even where those hands have been trained by that experience the want of which we deplore.

As our readers may see, we have striven to remove many of those imperfections from the number we now place in their hands. With much trouble, and at greatly increased expense, we have enlarged the magazine, so that we now present forty-eight pages of reading matter, instead of thirty-four, and, having placed the printing and binding in the hands of one of the best houses in Canada, Messrs. Hunter, Rose & Co., of Toronto, we have been enabled to secure a larger and more beautiful type, and to give the whole a greatly improved appearance.

The arrangement of the contents we have now adopted will be permanent. We wish, if possible, to make THE TYRO serve the double purpose of a college magazine and a paper representing our school. Now, a college magazine is supposed to contain a variety of matter, all, either directly or more remotely, bearing on the great work of education; while a college paper is devoted chiefly to college news. The greater part—something like three-fourths—of the present number answers to the former description; while the remainder is devoted to such items of news as will, we think, interest students, and those having the welfare of the Institute at heart.

The school contains both a Theological and a Literary Department, each claiming notice. To represent the former, a number of pages have been devoted to religious topics, while the latter finds its representation in the literary department that follows. We have also thought it well to occupy a few pages with carefully *selected* matter. The articles are of great merit, and, for the most part, from English publications that do not, as a general thing, fall into the hands of our readers.

In addition to much solid matter, a little fun or "non-sense," if you please to denominate it such, may also be found. We think the magazine could not properly represent the school if it did not contain something of this nature. When did one hundred and sixty young people dwell together under one roof without producing something funny or nonsensical?

We now submit this number to our patrons, hoping that the labour expended in attempting to make it worthy of their regard may be a sufficient expression of our thanks for their past support, and, at the same time, a not ineffectual plea for more extended patronage in future.

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THE TYRO has been enlarged and otherwise improved, and now we want more subscribers to make it pay expenses. We think it has a right to be supported. It has a claim on present and former students, in that it is serving the school that has done so much for them. A few students, and many who were once students, have not as yet given us their assistance. Students, show your love to the Institute by subscribing to THE TYRO at once. Students and alumni should not only give us their names, but each should get up at least one club. A very little trouble will do it.

THE TYRO has also a claim on the denomination, for it is doing a work nothing else can do. But a very imperfect idea of the working of the school can be gained from our excellent paper, the *Baptist*, for that has a wider and far different sphere. This magazine is well calculated to give all our friends a clear understanding of the work here in all its branches. A periodical of this nature going out from the Institute every term, and finding its way into Baptist homes, far and near, must have a great influence in keeping alive their interest in the school. There should be one or more

clubs in every Baptist church in Ontario. What is to prevent it? The price is very low, and the magazine is worth the money. If our friends will take a little trouble in extending its circulation, we can not only pay our expenses but we can aid the Institute, for our sole outlay is the bare expense attending the printing and binding. Give us seven or eight hundred subscribers, and we will devote from one to two hundred dollars yearly to much-needed improvements here. One hundred dollars expended yearly in purchasing philosophical apparatus will soon increase the efficiency of the scientific department ten-fold. We cannot do much in the way of paying ready money, for students are proverbially poor, but we are willing to labour, and if our friends will purchase the products of our labour, the desired end, viz. the good of the Institute, will be attained.

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### Faculty.

QUITE a change has taken place in the *personnel* of the Faculty. Mr. Carscadden and Mrs. Hankinson retired at the close of last term. Miss A. T. Giddings is now governess; Mr. S. J. McKee, B. A., Professor of higher Mathematics and Classics, and Mr. J. I. Bates, teacher in English and junior Mathematics.

Mr. McKee, a graduate of Toronto University, and silver medallist in ethics and metaphysics, has now assumed control over the department of Mathematics, and will, for the present, assist Professor Wells in the Classics. Mr. McKee has now been with us but one term, yet has, in this short time, won the entire respect and confidence of the school.

Mr. J. I. Bates, who succeeds Mrs. Hankinson in the English department, holds an equally high position in our esteem. We hope he will long remain in a position he is so well qualified to fill.

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CLASSICS.—There is in many places a growing desire to substitute, in college courses, ancient Christian authors, such as Chrysostom, Jerome, and Erasmus, for such old "heathens" as Cicero, Homer, and Aristotle. The desire, it seems, has become strong enough to provoke not a little discussion, and some action, for Harvard University has made these authors optional in the junior and senior years, and Lafayette College has established a course in which Christian authors and the New Testament alone are read. It is probable that some of our Professors, whose tastes are so very classical, will shake their heads at the innovation, but for our part, if said Christian authors have fewer irregularities and "heathenish" constructions than our pagans, we say bring them on.

## Lectures.

The Y. M. C. A. have engaged the services of ten excellent lecturers for the present season. There are some rich treats in store for the people of Woodstock. PROF. GOLDWIN SMITH, M. A., whom D'Israeli has made to figure so prominently in "Lothair," is among the lecturers. Prof. Smith is one of the most classic writers and speakers of his age.

PROF. J. E. WELLS favoured the Judson Missionary Society with his able and interesting lecture on "Paul, the Enthusiast." We are sorry that the night was so unfavourable. The theme was treated in a masterly manner. We should like to hear some more like it.

DR. FYFE'S lecture on "Methods of Reading and Study," was highly appreciated by the students. His suggestions were very practical and valuable.

MISS S. E. ADAMS, from Michigan, favoured the students with a reading, on the evening of Nov. 1st. Perhaps we are behind the age, but while much amused at a few of her pieces, we fail to appreciate the effort as a whole, and cannot but entertain grave doubts as to whether the lady may not have mistaken her vocation.

REV. J. GOBLE, returned missionary from Japan, paid the Institute a visit on Nov. 7th, and delivered a very interesting lecture, giving a full and concise statement of the present condition and future prospects of those far-off islands. How wonderfully and literally is the prophecy fulfilled, "Surely the isles shall wait for me." Several new missionaries are on their way to that interesting field. "The wilderness and the solitary places shall be glad for them; and the desert shall rejoice and blossom like the rose."

## Personals.

We regret that W. B. UNDERHILL has been compelled, through ill-health, to leave the law office, and has returned to his farm.

MRS. HANKINSON, before leaving the Institute, received a handsome gold watch from the students, as a token of regard and esteem.

P. S. CAMPBELL and J. W. A. STEWART, each received a scholarship in general proficiency at the University.

REV. ALEX. McDONALD, of '67, has accepted an appointment to the Manitoba Mission. He proposes going to the Far West in the Spring. The prayers and best wishes of the students follow Mr. McDonald to his new sphere of labours.

CHESTER CAREY, M. D., is practising in Columbiaville, Mich.

Mr. JAS. CROZIER, B. A., has entered the state matrimonial.

Mr. DANIEL H. KITCHEN, M. D., is Superintendent of the State Lunatic Asylum, Utica, N. Y. We congratulate the Doctor on his success.

T. D. PRENTICE, we understand, has followed the example of his

forefathers, and taken unto himself a wife. He is living at Fort Gratiot, Mich.

MISS SOPHIA MCGINN is teaching in a family in Ste. Thérèse de Blainville, Q.

MISS PHELP is teaching music and drawing in Georgetown.

On another page we publish a letter from REV. JNO. MCLAURIN, of Ongole, British India, who graduated in the Theological class of '68. It will be interesting to all friends of missions.

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### Marriages.

CHUTE—CLAPPISON.—On Wednesday, the 1st ult., by Rev. R. E. Tupper, assisted by the bride's father, at the Wesleyan Parsonage, Lambeth, H. N. Chute, B. S., of Ann Arbor, Michigan, to Lucretia, eldest daughter of the Rev. D. C. Clappison, Wesleyan minister, Westminster.

BAKER—GILLIES,—At Grovehill, P. Q., by Rev. A. Gillies, assisted by Rev. N. W. Alger, on the 22rd inst., Rev. A. C. Baker, of Fingal, Ont., to Miss S. J. Gillies, of Eaton, P. Q.

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### Deaths.

CAMERON.—We regret that, since our last issue, one of our most highly esteemed and most talented companions has been called to his reward. Mr. Richard H. Cameron died at his father's residence, Bayham, on the 26th August, in his thirty-third year.

Mr. Cameron had completed all but one year of the preparatory and theological courses, when compelled, by failing health, to discontinue his studies. For a short time he was settled over the Tilsonburgh church, but soon he gave that up and returned home, fully realizing that his work was done. While his class was graduating, he was slowly sinking, conscious that when the Master should call he would enter upon a glorious reward. At last the summons came, and our brother and friend passed from earth to for ever "walk with Him in white."

CHALLEN.—Just before going to press, we received the news of the death of another of our alumni, Mr. Samuel Challen, which took place Nov. 28th. Mr. Challen, as a true gentleman, and a consistent and earnest Christian, was highly esteemed by his fellow-students. His end was sudden, but it was peace. We regret to lose so steadfast a friend; and would assure his relatives of the deepest sympathy of his fellow-students.

## Societies.

THE SOCIETY OF ASSOCIATED ALUMNI was formed in 1868: its professed object being the general advancement of education in connection with the C. L. Institute, more particularly to found and sustain professorships, wholly or in part—to assist students by awarding prizes and scholarships, and to adopt such other means as the Society might deem advisable to attain the desired end.

Any person having attended the Institute three full terms, and having left in good standing, may become a member by the payment of one dollar. Any person duly proposed and elected at any regular meeting, may become an honorary member.

The donation of thirty dollars shall entitle any person, elected by vote of the Association, to become a life member.

The regular meetings of the Association are held triennially in connection with the commencement exercises at Woodstock. A special meeting is held annually, some time during the week of the Baptist Home Missionary Convention's annual meeting.

The Alumni have already established a prize for proficiency in English composition, to be competed for annually. It is to be hoped that their treasury will soon be so full that they may be able to present other and larger prizes in various departments. The present officers are:—*President*, Rev. Jno. L. Campbell, Chatham, *Secretary*, Rev. Daniel Baldwin, Strathroy; *Treasurer*, Rev. Robt. B. Montgomery, Beamsville; *Directors*, Revs. Chas. Northrup, Wm. Muir, H. P. Fitch and Fred. Ratchliffe.

JUDSON MISSIONARY SOCIETY.—*Pres.*, Thos. Johnson; *Vice do.*, M. P. Campbell; *Sec. and Treas.*, Robert Clark.

ADELPHIAN LITERARY SOCIETY.—*Pres.*, J. P. McEwen; *Vice do.*, D. D. Burtch; *Sec. and Treas.*, Archd. McCurdy; *Critic*, D. W. Troy; *Marshal*, N. Wolverton.

GLENER SOCIETY.—*Pres.*, Miss Christie E. McEwen; *Vice do.*, Miss Barbara C. Yule; *Sec. and Treas.*, Miss Jennie Kitchen; *Critic*, Miss M. McGinn.

EXCELSIOR SOCIETY.—*Pres.*, Chas. J. Jamieson; *Vice do.*, J. J. Baker; *Sec.*, A. Carey; *Treas.*, A. Kinsman; *Critic*, E. C. Kitchen *Librarian*, W. A. Moorhead; *Marshal*, H. A. Shearer.

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THE following churches and stations are now regularly supplied by the students:—Dorchester, Petrolia, East Zorra and Vandecar, Fullarton, Burtch's Corners, Onondaga, Blenheim and Wolverton, Oxford Centre, and Sarnia Township. Besides this, special calls take away two or three each Sabbath.

### Morsels.

There are 166 names on the roll this term—55 ladies and 111 gentlemen.—The roof is on the new building; when completed, it will present a very beautiful appearance.—The Upper Flatters were very noisy on Hallowe'en.—One of the undergraduates declares himself to be a natural-born orator.—There are about forty Theologues here at present.—The Southern States are well represented in the Institute this term by six gentlemen and five ladies.—Applications for rooms are continually coming in; there will be ample accommodation when the new building is completed. Stoves have disappeared from the halls; the building is now heated with hot air.—A Karen recently graduated at Madison University.—There is talk of a much-needed boys' school in connection with the Institute.—Our Campus has been enlarged; the stones should be picked off it, and shade trees planted about it.—There was some skating on the rink the morning of Nov. 17th, for the first time this season. Some of the boys returned to their rooms rather wet.—\$30,000 are annually left in this town by the students; \$20,000 are being spent on improvements in connection with the Institute.—There is some talk of establishing a Provincial Normal School in this town.—Are the "Powers that be" going to designate the ladies' building by any name?

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### Improvements.

The building during the last vacation was considerably enlarged. Three good class-rooms have been placed at the rear of the chapel-room, which are occupied by Profs. Wells and Montgomery, and Mr. Bates. Considerable addition has also been made to the chapel itself, and by throwing open the folding doors we can have a very large hall. The old desks have been removed, being replaced by very comfortable seats. The walls have been beautifully and tastefully painted and blocked. The dining-hall occupies the whole of the basement of the middle section of the building, and one hundred and fifty persons can easily sit down at once. The kitchen is on the basement floor immediately under the new addition.

When our Alumni again visit their Alma Mater, they will see many changes in their old haunts. Perhaps it will not seem so much like the home of by-gone days, while some things may have been removed with which they connect the most pleasant memories; yet we are pleased to testify that every change has been made with prudence, and for the better.

**COURSE.**—As we intimated in our last issue, our course has been lengthened by the addition of one year, corresponding to the first year of University College, Toronto. Five students are now doing this work in preparation for senior matriculation. The literary course, and the preparatory course for theological students, are now four years each, and the ladies' course is three years.

### Our Exchanges.

We have received a number of exchanges from American colleges, and are glad indeed to receive them, for we confess that our knowledge of the many seats of learning they represent has been very limited. While intercourse between the two countries, in almost every other department, has been constant and friendly, there has been but little kindly greeting between schools and colleges. Not to be selfish, we have placed many of them in our reading room, that all may have the privilege of their perusal.

The *Virginia University Magazine* is an excellent monthly, gotten up in good style, and contains good and even some heavy matter. It says, anent THE TYRO, "The first number of THE TYRO comes to us in a neat shape, and with readable contents. We don't know whether to shake hands, or politely doff our hats to it, for there is such a pleasant mingling of Mr. and Miss in its pages, we cannot tell whether its editors are *editors* or *editresses*. 'Under which king Benzonian?'" You may doff your hats, sirs, to our lady students who contribute to the pages of THE TYRO, and as *editors*, we cordially shake hands with you.

The *Tripod*, from the Northwestern Univ., Evanston, Ill., is one of the best we have yet received.

The *Southern Collegian*, from Washington and Lee Univ., Lexington, Va., contains many good articles, but, boys, you give us a deal of nonsense.

The *Madisonensis*, from Madison Univ., Hamilton, N. Y., is welcome, indeed. It comes from the Alma Mater of our honoured Principal, R. A. Fyfe, D. D.

The *Annalist*, Albion Col., Mich. We now look for its coming. It asks why we don't issue THE TYRO monthly. Wait a little, brother *Annalist*. Our personal experience was creeping before walking. We hope to walk by-and-by.

We have also received the following, but an extended notice of each has been crowded out of this issue:—

*College Express, College Herald, College Argus, Trinity Tablet, Blackburn Gazette, Miami Student.*

These are all we have yet received. We would be glad to exchange with many more if we knew their address.

Thanks to Dr. Kitchen, of Utica, N. Y., for the *American Journal of Insanity*.

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### Theological Classes.

SENIOR.—Thos. Johnson, P. H. McEwen, J. P. McEwen, and John Ingram.

MIDDLE.—Thos. Williamson, J. A. Baldwin, W. S. McDermand, and Geo. Robertson.

JUNIOR.—J. A. Her, Frank Dann, M. P. Campbell, R. Clark, N. Wolverton, and John McLagan.

### Things.

A lovely female graduate of a Mass. seminary, recently told one of the board of examiners that, "Æsop was the author of Latin fables covered with hair, and sold his birthright for a mess of pot-ash." Ex.

Mr. — received an explanation from his French teacher, but not remembering it, went again, saying. "Miss —, I suppose you will wonder at my stupidity." "O, not at all," was the reply.

"My dear Ellen," said a young man, "I have long wished for this opportunity, but hardly dare trust myself to speak the deep emotions of my heart; but I declare to you, my dear Ellen, that I love you most tenderly. Your smiles would shed—would shed—" "Never mind the wood shed," said Ellen, "go on with your pretty talk."—*Qui Vive*.

Vassar Col. embraces 485 young ladies. Who would not be a Vassar. Ex.

A young lady hesitating for a word in describing the character of a rejected suitor said, "He is not a tyrant, not exactly domineering you know, but —" "Dogmatic," suggested her friend. "No," was the reply, "he hasn't dignity enough for that; I think *purple* would convey my meaning exactly." Ex.

Some of our "Senior" theologues are beginning to sing "When the spring time comes, gentle Annie."

Prove the following equation:—Sanctified commonsense + Stick-to-itiveness = Genius.

It is now generally admitted that the Grand Trunk thoroughly believes in everlasting destruction.—*Oracle*.

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### Advertisements.

WE wish to call attention to our advertisements:—'I' and J. Grant, boots and shoes. You will find it to your advantage to examine their stock.

G. Anderson, book store, West End. Students, go to Mr. Anderson for books. He advertises in THE TYRO.

Medical Hall: Scott and White. Give them a call.

Nickelson's Gallery is where students go for photos.

See Mrs. Wright's advertisement. Drugs, medicines, &c.

James Vannevar, stationer, Yonge Street, Toronto. Send to him for Text Books, &c.

R. G. Chamber's advertisement is on the cover. Patronize those who patronize us.

Don't forget to patronize the *Institute*. See terms, &c.

THE UNIVERSITY OF BERLIN.—This great German University, that has given to Europe many of her greatest philosophers, theologians, and scientists, and has long been the most celebrated seat of learning on the Continent, is now on the decline. Leipsic has outstripped it in numbers, and, it is thought by many, will soon succeed to its envied position of supremacy. Berlin has, in a short time, fallen from 2,503 students to 1,990, while Leipsic has now 2,315.

SEVEN HUNDRED JAPANESE are maintained at school in this country, at a cost to their government of \$1,000 each per year. One of them in New Haven, having been insulted by one of his classmates, politely sent a note to his teacher requesting permission to kill him. Ex.

CORNELL UNIVERSITY is agitated by an animated discussion on the propriety of their lady fresh men wearing hats during recitations.

PRINCETON COLLEGE has, within the last four years, received donations to the amount of \$1,000,000. Ex.

MR. DARWIN'S forthcoming work on "Expression in Man and Animals," bids fair to be of a more popular character than any of his other publications. Ex.

THIRTY CHINESE recently arrived in the U. S. to be educated. Ex.

DR. HAVEN has resigned the Presidency of the Northwestern Univ., and is succeeded by Rev. Dr. C. H. Fowler, of Chicago.

## Public Meeting.

### PROGRAMME.

DECEMBER —, 1872.

MUSIC—"O come let us sing unto the Lord.".....*Choir.*  
PRAYER.

### PRESIDENT'S ADDRESS.

MUSIC—"Qui Vive Gallop."—(Inst. duett).....*Misses Merrill.*

ESSAY—"Principle." .....*R. Clark.*

MUSIC—"I've wandered in dreams."—(Duett).....*Misses C. McGinn and Olcott.*

"SHEAF."—Paper .....*Miss Kippen.*

DIALOGUE.....*Messrs. Trotter and Burtch.*

MUSIC—"Caprice Hongrois."—(Inst.).....*Miss C. McGinn.*

"ORACLE."—Paper .....*J. M. White.*

MUSIC—"Evening will bring us rest."—(Solo and chorus)...*Choir.*

ORATION—"Our country's safeguards.".....*T. S. Johnson.*

MUSIC—"I Navigati."—(Trio.).....*Miss C. McGinn and Messrs. White.*

COLLOQUY—"Even unto death.".....*Misses McEwan, Stewart, Adams, Russell and Sovereign.*

MUSIC—"Hail to our beautiful Queen.".....*Choir.*