Lectures on popular and scientific subjects delivered at various literary institutions, and a few poetical remains / by William Robinson Lowe ; edited by his sister ; with a brief introductory note by J.B. Owen.

Contributors

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7—last line but three, for "is" read "*are*"
22—line 3, leave out "*with*"
23—line 21, for "cosmogyny" read "*cosmogony*"
23—last line but four, for "Lutheron" read "*Lutheran*"
23—last line but one, read "*the first two verses*"
24—line 3 of note, for "treatits" read "*treatise*"
31—line 3 of note, for "intercalated" read "*interposed*"
83—line 18, for "cites" read "*cities*"
83—last line but seven, for "sirsute" read "*sienite*"
95—last line but eleven, for "minature" read "*miniature*"
109—line 7, for "was" read "*were*"
110—last line but 7, for "Frist" read "*First*"
134—line 18, for "bonas" read "*bonos*"
141—line 15, for "intellect" read "*intellects*"
169—last line but seven, for "ironry" read "*irony*"
189—line 16, for "independant" read "*independent*"
198—line 7, for "simoom" read "*simoon*"
223—line 1, for "This" read "*The*"
268—last line but ten, for "cerebal" read "*cerebral*"
291—line 6, for "is" read "*it*"
311—line 20, for "magnitute" read "*magnitude*"
326—line 4, for "their partitions" read "*thin partitions*"
336—line 6, for "the diseased" read "*delinquent*"

INTRODUCTION.

William Robinson Lowe, the author of the following series of Lectures and Poems, will be long remembered with admiration for a genius of no common order, and for a disposition of singular kindness and *bonhommie*. He was a man from whose private conversation and public speeches one always learned enough to account the time well invested which was spent in listening to him. The writer heard him deliver many of the papers published in this volume, and is enabled to bear testimony to the great applause with which they were uniformly received. As a lecturer, Mr. Lowe was exceedingly popular, and was one of the few instances in which popularity was respectable, both to its object and the public;—to the latter for their intelligent discernment, to the former for the utter absence of claptrap, whether of terms or sentiments. Mr. Lowe's style was at once erudite, eloquent, and Saxon, and his delivery, whether he read his paper or discoursed extempore, was strikingly earnest, telling, and unaffected. With no great compass of voice its notes were under that masterly control, which, by its power

and pathos, could with equal effect fill a Guildhall or charm a drawing-room.

A man of extensive reading, he loved knowledge for its own sake, while fully sensible of its value as an instrument of social influence. His extensive and gratuitous services to the cause of popular education and civic improvement deserve a better recognition than the patronage of this humble publication.

His friends, however, solicit no other tribute to his memory than the patronage of a volume which it is hoped may thus serve a twofold purpose, at once a reminiscence of the deceased, and a posthumous sacrifice to filial duty in the assistance which it may render to his widowed mother and her family; being just the kind of tribute which would have gratified his best affections had he been living.

The event has proved that the pursuit of his literary labours abstracted more time and attention than could be spared with impunity, or without a prejudicial recoil upon his domestic interests. In his removal the whole family (and especially a delicate sister, the life-long centre of sympathy to the family group) are suffering at the same juncture the bitter pangs of his recent insolvency, and the saddening desolation of his early death.

That the estimate here presented of Mr. Lowe's character and gifts is not the partial retrospect of friends, mellowed and magnified by the medium of regret through which his loss is viewed, may be demonstrated by the following editorial notice of his decease in the local press. The removal of so young a burgess is not made the subject of a special paragraph in

newspapers without some unusual claim upon public sympathy and respect. That well-conducted journal, the Wolverhampton Chronicle, of September 10th, observes:

"It is with a feeling of regret, in which very many of our readers will participate, that we announce the death of Mr. William Robinson Lowe, wholesale chemist and druggist, of this town. Mr. Lowe was only in the thirty-sixth year of his age, and the mournful event has brought to a premature close the life of a much respected townsman, whose abilities and acquirements were at all times most usefully devoted. For some years past until recently Mr. Lowe has been a member of the Town Council, and took an active part in its business, more particularly in support of measures for sanitary improvement. He was likewise an ardent advocate of the extension of education and knowledge generally, especially among the labouring classes, and frequently delivered lectures, exhibiting great acuteness and research upon philosophical subjects at the Athenæum in this town, and at similar institutions in the neighbourhood. Phrenology was with him a favourite study, and he manifested remarkable ingenuity in reconciling its principles with the dicta of revealed religion, in which, unlike many pretenders to the position of philosophers, he was a firm and enlightened believer. He was educated at the Free School in this town,* and retained his affection for the classical studies of his youth, frequently occupying

* This was a misstatement arising doubtless from the fact that all Mr. W. R. Lowe's three brothers were educated at the Free Grammar School.

himself with the perusal of the best Greek and Latin authors. To his *alma mater* he was much attached, and zealously exerted himself in favour of the recent new scheme of government, through which the usefulness of the school has become extensively enlarged. The early removal of such an individual is naturally a cause of much sorrow to his family and to an extensive circle of friends."

His sun went down at noon-day and unhappily set in clouds. A series of untoward circumstances, losses, disappointments, and their mortifying sequences telling adversely upon a naturally very excitable nervous temperament, led him at various periods in the closing years of a life hitherto bright as its acknowledged genius, and irreproachable in its moral antecedents, to seek occasional relief in that treacherous oblivion which always wakes to aggravated anguish. It was so diametrically opposed to all that consituted his better self, so abrupt a contradiction to the uniform tendency and convictions of his anterior life, that it cannot be passed over by an honest chronicler, lest other gifted brethren should be robbed of the solemnity of the warning, "let him that thinketh he standeth take heed lest he fall." The writer is thankful to learn that this lapse from the high pedestal on which his character had taken its stand was but an episode, and a very brief one, in the otherwise brilliant passages of his career;—but it was so;—and to ignore the fact would disintegrate the memoir, and inculpate the biographer with the complicity of a suppression, against which every public testimony, if any part of it is submitted to public judgment, is adjured to speak the whole truth.

However, this transient stain was the effect rather than the cause of those events that led to the embarrassments which closed at once his business and his life, as if neither could survive the other, and in giving up all (as it is well known he did), his sensitive spirit broke with the breaking of his commercial credit, as though life itself was no longer his own, but to be surrendered as the last atonement to society for its involuntary share in his misfortunes. He was too ingenuous a spirit not to be sternly conscious, that unsanctified trouble had for a season turned him aside,—that he had "grieved" the only true Comforter by having recourse to false ones, like Saul in his adversity, departing from the oracle in Shiloh to the witcheries at Endor. No man better knew, nor had more touchingly and strongly deprecated this pernicious evil than he had. Let young men learn to dread the infatuation which invariably aggravates a trouble by the fatal mistake in its remedy, a miserable blunder which leads the wearied and pursued spirit, like Sisera, to seek repose in the tent of its adversary, where "she brings him butter in a lordly dish," but hides "the nail" which is to fix him for ever where he falls. If, however, he was in this respect untrue to himself, he was always in every respect, as a commercial man, true to others. A highly esteemed fellow-tradesman in the same town wrote me word, while this memoir was in course of compilation, "There was one remarkable feature in his character which was very prominent in all his transactions with his fellow-men, especially in trade, viz., his strict integrity and uprightness. The wholesale department of his business offered, as you are aware, peculiar temptations to the 'tricks of trade,' but

he withstood them all, and the retail chemist purchasing from him, knew that his articles could be depended upon as real and genuine. This testimony was invariably accorded to him by all commercial men with whom he had dealings." This respectable correspondent's testimony is in perfect unison with all I ever heard or knew of the transactions of our lamented friend. He was too generous a spirit not to be sensitively honourable, and as the event proved, he could be more easily broken by misfortune, than bent to low manœuvre. I had always the highest opinion of his simple integrity, and nothing that has since occurred has altered *that*, however it may have altered him in the estimation of strangers, who knew nothing of the man, except his failure as a merchant.

We are no apologists for bankruptcy in the abstract. On the contrary, the reckless trading, sumptuous expenditure, exorbitant speculations, and repeated instances of flagitious dishonesty, which precipitate with such disgraceful frequency, the insolvencies of the day, are rapidly demoralising the whole system of British trade, and cannot be too strongly deprecated. Still misfortune must not be confounded with guilt. The guilt indeed becomes more guilty by the discredit which it reflects upon the misfortune, with which it has nothing further in common than the fellowship of ruin; just as the mendicant impostor aggravates the trials of genuine poverty, not only by intercepting its alms, but by reflecting upon the virtuous claim the suspicion and doubt excited by the vicious pretence. It is, however, but too true that the money-getting world can more readily forgive a man for anything than for being ruined.

If a trader could contrive some isolated shape of disaster, that should involve nothing of his neighbour's in the catastrophe, they could look on with a spurious sentimentalism that costs but the utterance of the sigh,—"poor fellow!" But if in the sudden fall of his house, the passers-by unhappily receive a blow, the ill-fated owner is deemed a "bad fellow" for not taking care of his premises.

If there be any one among the late Mr. W. R. Lowe's friends who is sensible of an alienation of esteem for his character, and who may have been led to think harshly of his business career, because of its unfortunate issue; let the writer ask that friend to suspend his judgment until he has candidly read the young tradesman's story. Let his friends give him that hearing after death in his own behalf, which they were so ready to give him on any behalf when alive, and delighting them with his eloquent erudition on those topics where he was at home. Let them do that justice to his memory which his characteristic generosity would have done to theirs, had they stood in need of his charitable construction. Let his old neighbours read and judge for themselves.

William Robinson Lowe was the eldest of seven children, and was born January 25th, 1820. His father, Mr. William Hutton Lowe, was a manufacturing chemist of Wolverhampton, and son of the venerable patriarch of the Market Place, whose white hairs, and benevolent mien, in connection with his long life of integrity and unaffected personal piety, is well remembered by the writer, and by many of his old friends still living in Wolverhampton. In the subject of this memoir the dawn of intellectual power almost synchronised with

his earliest consciousness of childish existence to think and to live were so near contemporaries. Educated at first in Wolverhampton by the late Rev. J. Reed, and subsequently at Tong by the Revs. J. Lea and R. Robinson, he made very rapid advances in classical and other scholastic studies; and as a probably unwelcome recompense was removed from school at the premature age of thirteen. It was his own earnest desire to pass thence through the University with a view to preparation for the Church, but his father's business having outgrown his individual powers to manage, he considered it advisable to introduce, as early as possible, a son into the establishment. From that strong sense of filial obligation which always characterized William Lowe, he cheerfully sacrificed inclination to duty, and joined the business, though not without hope of hereafter resuming the course of life he so much preferred. His constitution was delicate, and consumption being apprehended, he was advised to accompany his father on his commercial journeys, with a view to more change of air and exercise. By these means, under the blessing of God, his health gradually improved, and he acquired some bodily vigour, by which he was enabled to devote his evenings to study, often until midnight, after having worn out the days in the occupation of business. His books were his only recreation, nor did his literary taste require any other diversion. At the age of seventeen he undertook alone the business journeys, which extended over a considerable part of the United Kingdom. At this period he commenced the laborious task of translating the New Testament from the Greek. He consecrated his leisure hours to the elaboration of an

English version, as severely literal as possible, with the hope of approximating nearer to the original of the sacred text, than he imagined was always practicable through the medium of our admirable authorized version. This arduous undertaking was a source of constant enjoyment to him, and was a means, under God, of separating him from the too common frivolities and profligacies of youth. His continual study of the Divine Word operated as a powerful antidote to the poisonous currents of infidelity. It was his rule to translate at least one verse each day, and if no opportunity could be snatched in the commercial room on his frequent journeys, he retired earlier to his bed-chamber, there to devote the fragments of his evenings to his literary task. In four years he completed his work, and a very creditable performance it was, judging from the specimens the writer remembers to have seen. He then commenced the Old Testament, and in order to his greater accuracy he diligently and successfully studied Hebrew. He had proceeded as far as the 1st Book of Chronicles, when in the mysterious wisdom of Providence, he was suddenly deprived of his father. Mr. Lowe, senior, left his home in the morning in perfect health, and during the day met with a watery grave; thus bequeathing a widow and five fatherless children to the care and compassion of his eldest son.

William, at the immature age of twenty-five, was thus placed in the position of head of the family, with all its varied responsibilities, and domestic and commercial solicitudes. He had ever been a tender and devoted son, and an affectionate elder brother; but he was overwhelmed with the thought that henceforth he

must be the father as well as brother to the disconsolate circle, which now looked up to him, under God, as their future guide and protector.

He deemed it best to dispose of the business for the general benefit of the family, and take his own chance in following out his long cherished desire of preparing for ordination. His friends, however, disapproved of this scheme, and (it ought to be added) without difficulty persuaded him that the interests of his family would be better consulted, as it *then* appeared to them, by his remaining at home, and continuing the business for their joint benefit. Acting upon their suggestion, and with the hope of greater usefulness to his bereaved relatives, he finally abandoned the long ardent wish of his heart, and consecrated his life to their support and comfort. These were the hopeful days of himself and family. Time, and a meek submission to the will of God, accompanied by the faith that recognises and relies upon His Providence, who is the "Father of the fatherless and the Husband of the widow," had enabled the sorely-tried domestic circle to look upward, and to look forward more cheerfully to a happier future. The writer is not aware if Mr. W. R. Lowe made any distinct religious profession, or had taken any decided step involving more direct and personal communion and sympathy with the people of God. At all events, his conversation always implied the deepest reverence for religion, and attachment to its ordinances, together with an enlightened sense of the spiritual nature, value, and responsibility of its privileges. He was, at any rate, in a hopeful state of Christianity, he "did run well" till he suffered some-

thing to "hinder him;" departing, as we believe, "for a season," that he might be received back for ever.

The writer can bear testimony to his unostentatious acts of benevolence, some striking instances of which came under his notice in the position he then occupied in the town of Wolverhampton; but he forbears, lest some men's economical charities, who do not give of their own, should retrospectively convict the deceased of giving away at the cost of other people. Whatever he gave to the pleas of charity or religion, he believed was his own, and at the time doubtless *was* his own:—at all events, his "heart went with it" whatever he did. "The left hand might not know what the right hand did," but his heart was in every secret of his life, and a more ingenuous transparent character it is rarely one's lot to meet with. Some men's mistakes are more amiable than other men's morals. He gave time and substance, as much as in him lay, to serve others, without the slightest intention to violate the strictest rules of economy and prudence; as conscientious in what he gave as in what he withheld—though many men's frigid conscientiousness is gauged by what they *withhold*, rather than by what they give. The happy medium is to avoid either extreme of going beyond the means, or of "withholding more than is meet;" both, though from opposite causes, "tending to penury." The writer has still by him, brief, pithy, eloquent notes, written by our poor deceased friend, on behalf of the widow, the orphan, or the friendless, among Wolverhampton's folk, whose only claim upon his sympathy was their extreme need of it, concerning whom all one can remember now is, that they belonged to the touching

category: "These cannot recompense thee, but thou shalt be recompensed at the resurrection of the just."

In earnest of the complete relinquishment of his old scholastic aspirations, and to make a whole "burnt offering" of his sacrifice of personal predilections to the interests of his family, he set aside close study, "all forms and pressures past," and became, as far as an uncongenial nature would allow him, the man of business. His counting-house became his study, Hebrew gave place to herbs, and the only poetry which seemed to interest him was the poetry of real life, that seemed to force upon him the duty of economising its resources and opportunities in the path assigned to him, as if there he was about to work and realize the position, "I do remember an apothecary, and hereabout he dwells."

At this period he determined to pursue business with more exclusive energy, in conjunction with his brother Henry, accounting the line of trade to be the particular path of duty which Providence had marked out for him. "Few young men probably ever embarked on the troublous waters of mercantile life with firmer resolutions than he, or with more profound dependence upon divine pilotage, to steer him through its perils, temptations, and difficulties."

These were some of his beloved sister's words, written to the writer, as descriptive of his state of mind at this period, in reference to his Christian convictions.

The scheme of his brother's partnership was soon frustrated. Death, after an interval of a few months, again invaded the still pensive abode of recent bereavement, and plucked off his poor brother Henry by a rapid decline. This was a heavy and unexpected blow

to the family firm, as Henry possessed great business talents and powers of application, which could not readily be supplied. William, now feeling he must tread alone the path which he never cordially liked, arranged to take his brother's department of the business at home, devolving the travelling as much as possible upon an agent whom he engaged for that purpose. Misfortune again pursued him here. His traveller was very highly recommended by previous employers (as people are too apt to do), yet nevertheless turned out a failure, and occasioned him great anxiety and loss, by the large amount of monies he had misappropriated before his want of integrity was discovered. Thus, very greatly inconvenienced by his position, and in some measure embarrassed by this circumstance, he carried on as best he could, until an eligible partner could be found. This partnership, though formed after much caution and deliberation, proved inauspicious, and its speedy dissolution disarranging his business plans, and sadly accumulating his financial and economical difficulties, together with other adverse circumstances aggravating their pressure, disabled him from meeting his liabilities. Heavy domestic affliction at the same juncture accompanied his outward trials, and the serious illness of several members of his family made, as it were, "all the billows go over him at once, and the clouds return after the rain." He was smarting under another painful bereavement in the death of his youngest brother Nicholas, and just closing an arrangement for a promising partnership in trade, when he found himself unexpectedly called upon to surrender all he had into the hands of his creditors (and to become

a bankrupt, although possessing *much more* than was sufficient to liquidate every claim). That he did so to the "uttermost farthing," none can doubt: reserving nothing to himself but his personal honour, to which he looked, under God, as the forlorn hope of hereafter retrieving his position. But he found it easier to maintain the hardships of the struggle, than to endure the anguish of defeat. His physically weak constitution and shattered health gave way—he became an almost unresisting prey to disease—a subtle species of dropsy set in, against which he seemed to have lost all power of rallying, and under which he sank in less than a fortnight, not surviving his ruin long enough to be cheered with a consolatory hope of its recovery. He could have wished, had it been the will of God, to have lived to make the gallant effort at resuscitating his name in its former credit, to redeem the fallen fortunes of his family, and, above all, to devote his heart more earnestly to the duties of a Christian life; but he always added the humblest acquiescence with the Divine Will, should it be otherwise ordered. These were among the parting sentiments which he uttered at intervals to those he loved, and who loved him to the last. It is gratifying to learn that his latter hours were spent in "sorrowing after that godly sorrow that worketh repentance." They who believe in God's recovery of His fallen ones, whom His Holy Spirit never finally leaves to themselves, welcome the tidings of a late backslidden penitent, not only in the individual sense, but as a demonstration of the doctrine that should encourage us all "to return from our backslidings to be freely healed."

William longed to live, but it was chiefly to return

to "his first love," and to requite his family all the tenderness and confidence they had reposed in him, and which he had never betrayed, though he had deceived himself, and been cruelly *deceived in others*. In his heart there was, moreover, another secret link to life, which had long lain there, waiting for such a favourable turn in his affairs, as could alone have justified its honourable addition to the chain of his domestic affections; but death has snapped it asunder in the rivetting, and left only another mourner to bewail her sorrowful bereavement. In a calm and tranquil slumber, painfully contrasting with the troublous disquietude of his late experience, but sweetly suggestive, as we trust, of the rest and peace to follow, he passed away in the early spring of manhood, on the 6th of September, 1856, in the thirty-sixth year of his age.

This is the apology which death has made his epitaph, and there will be, as the writer believes, and does not hesitate to affirm, no breach of truth and justice in the verdict, that, as between man and man, "he was more sinned against than sinning." He did his best in a line that he never sought, and that never suited him; but which conscience, filial duty, and his holiest affections, thrust upon his adoption.

The event has only proved what he always himself suspected, that he was a better scholar than a trader; more fitted to shine at an Athenæum than on 'Change; giving fairer pledges of his capabilities as a student than of his prospects as a merchant; all his better parts of truth, and trust, and generosity, becoming the intrinsic obstacles to a successful encounter with too

much of the chicanery and ultra-competition of modern commerce.

That he was popular with his humbler neighbours, and with the public, was indicated by his repeated election to the Town Council of his native borough. His votes and influence were always given to what he conscientiously believed to be the best municipal interest, never allowing himself to be swayed by party-feeling. He was particularly active in all those measures that were calculated to improve the sanitary condition of the town.

That he was respected by the elders and chief inhabitants of the district, he was gratified to discover in the fact of his nomination to be one of the trustees of the Free Grammar School, in the improvement of whose academical character he was not an undistinguished instrument.

His gratuitous labours, during the years he was in business in the cause of popular education, especially in connection with the singularly able lectures he delivered in Wolverhampton, and many other towns, are not deserving of any less grateful recollection on the part of the public, that their benefit was probably obtained at no small cost to his private interests. The moral seems irresistibly to suggest itself—that few men in trade can afford to be public men at the same time. Abstruse studies and complications of business cannot be co-partners without risk of damage to the more vulnerable interest of the two, and unfortunately for the temptations of the student and the claims of his customers, the literary credit is more easily sustained

than the commercial, and hence the latter generally suffers. The corollary is, that men involved in other men's affairs, should deny themselves an indulgence, however intellectual, which jeopardises their more immediate moral duty. Intellect may have been our poor friend's idol, and it proved itself as any other idol always does, unequal to a real emergency. The books that have the first claim upon a tradesman, after the book of God, are his day-book and bank-book, on whose critical entries the interests of others are bound up with his own; and this fact makes their constant study not discretional but incumbent upon him, or loss of fortune and repute will be the penalty. The conclusion is, that parents and guardians who naturally influence a young man in the choice of his calling, should not coerce him into any line of business against his own inclination. The preference of one calling to another, is in the Providence of God usually determined by the consciousness of the individual's gifts; and their diversion into other channels, however cogent and attractive the ground may appear, seldom realises the expectations which are based upon a misconstruction of the means of their fulfilment. Elders may judiciously point out to their young relatives the particular direction that may seem desirable; but the final selection is for their lives—for *themselves*—and not for their ancestors, and should therefore be left, in prayer and faith, to the parties chiefly interested. In the instance before us, all was meant well and wisely, but the *dénouement* presents a case for sympathy no less sincere than the intention of the chief sufferers, nor less liberal than the characteristic generosity of him whom they mourn,

and none the less worthy of general consideration, for the valuable lessons which his obituary suggests.

Postcript.—The writer cannot deny himself the pleasure of adding to the foregoing memoir a most kind and characteristic letter from a highly-esteemed friend of his own and of the deceased, George Wallis, Esq., Principal of the Government School of Art, Birmingham:—

"Government School of Art,
"Birmingham, Nov. 4th, 1856.

"My dear Sir,

"I was glad to learn, when at Wolverhampton a short time ago, that, by your advice, a few of the lectures of our late dear and worthy friend, Wm. Lowe, were to be published. Until to-day, my many engagements have prevented me sending my name to Mr. Simpson as a subscriber to the book, and also of writing to you, to say how glad I am to embrace any opportunity of testifying my sympathy to Wm. Lowe's mother and surviving sisters. * * * I feel I owe this to the memory of a very excellent young man, whose abilities, I firmly believe, were sacrificed to a deep sense of duty. It is now some twenty years ago since I first remember to have met him, and I believe he was then on his first commercial journey after leaving school. I was sitting in the "Commercial Room" of an hotel in the Staffordshire Potteries, when I was struck with the lively intelligent air of a youth—a mere boy, in fact—who entered the room with all the vigour and quiet confidence of the practised man of business, sat down to his desk and letters, and appeared to wind up his day's

business with the ease and accuracy of his seniors. I thought I knew his features, and in this I was confirmed on making inquiry. Subsequently, having returned to reside in Wolverhampton, (from which, at that period, I had been absent five years,) a considerable intimacy sprang up between myself and the youthful commercial traveller, in consequence of the active interest we both took in the then Mechanics' Institute. The more I saw of him the more I felt, as I still feel, that his vocation really lay in another direction than that in which he was engaged. The death of his father, leaving to him all the responsibilities of a business to attend to, and a family to support, seemed only to fix him more hopelessly in commercial pursuits; and though I never remember hearing him complain, yet I obtained a key to his aspirations through a chat with him on phrenology when he once called at my studio, and jocularly expressed his envy of my quiet (and as he knew to myself) congenial pursuits. I then learnt for the first time his love of the ancient languages, and his regret that he could not devote himself more thoroughly to literary pursuits, without too great a sacrifice of those more immediate affairs, in which the well-being and comfort of those so dear to him were involved.

"During the last fifteen years we only met occasionally in Manchester and London, when I was resident there, prior to my coming to Birmingham; after which I promised myself that we should again see more of each other. Still the active life of both, each in a different sphere of action, rarely permitted us to meet, and never to spend more than a few minutes together; but at these times I always felt that there was a world

of undeveloped power underlying the outward bearing of our young friend, and which I still hoped that some favourable circumstance might providentially assist to bring forth. When I heard of his misfortunes, I felt deeply for that which I knew to be a tender and kindly nature within him; and when I read the intimation of his death I wept,—not so much for his departure, as because I was certain that his difficulties had been more than he could bear. That he was without fault, it would be absurd to suppose; but it was my good fortune only to have seen and known him on the brightest side, and it is from this side alone that *I choose* to look at him, and to cherish his memory.

"You will, I am sure, excuse this perhaps too long reminiscence of our departed friend; but it has been an exceeding relief to myself to be able to say what I have done to one, that I know loved and respected him.

"Very truly yours,

"George Wallis.

"The Rev. J. B. Owen."

LECTURE I.

ON THE ANTIQUITY OF THE GLOBE.

When Geology first began to attract a considerable share of public attention, and to be studied in that philosophical spirit in which alone, if at all, it ought to be studied, one of the first truths which it disclosed was that which forms the subject of the present paper:—the extremely remote antiquity of the globe on which we dwell. For announcing this, novel doctrine, Geology paid the penalty which its kindred science Astronomy, and every other science, bringing new and startling facts to light, has paid —that of meeting with the opposition of a great portion of the world. All the artillery which ignorance and prejudice could bring to bear was freely discharged against it: authority scowled upon it: piety was alarmed at it: and dogmatism, dressed in the borrowed plumes of Christianity, hurled its loud but impotent anathemas against the infant science. Geologists, however, with a magnanimity and zeal deserving of the highest admiration, stood unmoved amid the storm. They appear to have adopted for their motto the well-known apophthegm, "*Magna est veritas, et prevalebit.*" Heeding not the charge of heresy, they condescended not to bandy harsh epithets with their opponents; but turning neither to the right hand nor to the left, pur-

sued the onward course of a diligent and impartial examination of the phenomena presented to their view, feeling confident that the God with whom they had to regard is emphatically "not the Author of confusion, but of peace," and therefore that the facts of nature, and the truths of revelation (however much they might appear to disagree) would eventually, when both became better understood, like scattered sunbeams concentrated by a lens, converge together into one focus, and be reciprocally strengthened by each other.

And what was the consequence of this fearless, this straightforward course? As soon as the storm had partially subsided, reflecting men began to discover that, though the deductions of geologists had been impugned, yet their documentary evidence—evidence written like the moral law, by the finger of Nature's God, on tables of imperishable stone—had not been invalidated. The correctness of their inferences was denied, while their premises in many cases had never been considered; the whole fabric was pronounced baseless, while its real foundations had not been examined. Geology, therefore, now gained ground; it rapidly passed, to borrow its own terms, from the chaotic state, in which it consisted of mere crude, undigested theories, through the transition formation, in which the first symptoms of harmony and arrangement appeared, and attained its present stratified or systematised condition, so that, thanks to the persevering labours of its advocates, it ranks among the noblest of the physical sciences. In proportion, too, as light was thrown upon the subject, the objections on religious grounds were found to vanish; there was a re-action in the public mind; people began to suspect that possibly Geology, instead of weakening, might strengthen our views of the wisdom and Omnipotence of our great Creator. And it is not the least singular feature in the present aspect of Geology, that this much-abused, heretical system of philosophy, now numbers among its most distinguished advo-

cates, perhaps, a greater number of the clergy than almost any other science. This fact, coupled with the general argument that Geology is merely the investigation of a branch of God's works, which, when rightly understood, cannot be at variance with His word, might induce the non-geologist to pause before daring to level against it the charge of irreligion.

The religious aspect of Geology by no means forms any part of my present subject; nevertheless, as the doctrine of the earth's extreme antiquity seems to many cursory observers to militate against the inspired narrative in Genesis; I may just observe, that as a firm believer in Divine Revelation, and having, I trust, a becoming reverence for Scripture truth, nothing would have induced me to prepare the present paper, did I think that by so doing I was likely to undermine a single doctrine of the Bible. On the contrary, not only do I believe the evidences presented by Geology to be incontrovertible; but the conclusion to which those evidences lead, to be perfectly reconcileable to the very letter of the sacred text. If we consult the Mosaic cosmogyny, we find stated what certainly geologists will not deny, that "In the beginning God created the heavens and the earth." After this general announcement, the account at once goes on to relate the creation of the *present* state of things, with man and his cotemporary plants and animals; but it nowhere tells us that millions of years may not have rolled away, and creative energy have been repeatedly exercised, subsequently to "the beginning" spoken of in the *first* verse, but prior to the Adamic creation, the account of which commences in the *third* verse. And to show that this is not a far-fetched opinion formed to solve the present difficulty, I may remark that some of the old translations of the Bible, (the Lutheron for one), though made years before the science of Geology was heard of, contained the two verses of Genesis *detached;* and then commenced the chapter by the *third* verse, thus opening the

account of that creation which Moses was about to give in detail. It is vain to say that because the sacred penman omits mentioning any intermediate occurrences, therefore they cannot have taken place; for we know it is the usual style of scripture to omit in a narrative whatever is not essential to the point in hand. As for instance in Exodus ii., 1, 2, it is recorded that "there went a man of the house of Levi, and took to wife a daughter of Levi. And the woman conceived, and bare a son; and when she saw him that he was a goodly child, she hid him three months." Now a cursory glance at this passage might lead to the supposition that because no elder children are mentioned, therefore Moses was the first-born, though we know from his own subsequent writings that his brother and sister, Aaron and Miriam, were both older than he. This, however, is not noticed here, because not essential to the subject. So in Genesis, after the announcement that God originally created the earth, the historian omits all that did not bear upon his point, and comes at once to what he had to relate—the institution of the present state of things.*

This evening, I repeat, your attention will be directed, not to the religious aspect of the earth's remote antiquity; but to the plain and palpable evidences in its favour, which are written on the rocks themselves, and which cannot easily be misinterpreted.

It must, however, be apparent to every one who has paid the smallest attention to Geology, that a subject of this magnitude can be but very cursorily treated within the narrow limits usually assigned to such a paper as this. The

* Those who feel disposed to pursue this question further cannot do better than consult the chapter devoted to it in Dr. Buckland's Bridgewater Treaties, Dr. Pye Smith's delightful work on Scripture Geology, and an interesting pamphlet on the same subject by the Rev. W. Lister, of Bushbury. In all these works the question is fully and fairly met, and it is abundantly proved, that startling as the doctrine may be, no single argument of any force can be adduced against it from the Sacred volume.

doctrine of the earth's antiquity forms no detached nor isolated point in Geology; it is, as it were, the grand truth, to the evolution and confirmation of which every separate fact tends more or less directly; the centre to which, by a species of gravitation, every observed phenomenon is found to point. Nothing less, therefore, than an elaborate statement of all the facts and discoveries of Geology could fully do justice to the theme; and for this, even if time permitted, I confess my own inadequacy. The present sketch is not intended for the experienced geologist, but rather for those not yet proficient in the science, and who perhaps have no very definite idea of the nature of the evidence on which this doctrine, once so novel and startling, really rests. For such and such only is this brief epitome intended; and by them it must be borne in mind that the evidence which will be adduced, instead of being a summary, will only be a sample of that which might be brought forward. Indeed, the difficulty of treating the subject lies, not in finding evidence in support of the proposition, but in selecting from so large and multitudinous a mass, where all bears upon the point, and all is replete with interest.

This then being intended, in the strictest sense of the term, to be merely "a popular sketch," and not a scientific essay, there are one or two preliminary inquiries which it may be well to institute. And first, let us see what are the opinions entertained by those who have disagreed with modern geologists on this subject; in order that those of my hearers who are not conversant with such matters may judge how far these ideas can explain the phenomena observed, and *ergo*, how far this doctrine be or be not forced upon us by necessity. This shall be done in very few words. One idea which for some time was pretty generally received, but which is now consigned to its merited oblivion, was, that the fossil remains entombed in the various rocks were not really the mementos of former generations of organized existence, but that nature had a certain plastic

power within herself, and that these strange formations were merely accidental concretions assuming the singular appearances of plants, shells, and animals, to which was applied the expressive epithet of "lusus naturæ," or freak of nature. It would be quite superfluous to combat, or point out the absurdity of such a theory. This is altogether the strangest "lusus mentis," or freak (not of nature, but) of the human mind, ever adopted by the credulous sons of Adam.

Others, again, there have been, and still are, whose motives, since they spring from veneration for what they believe to be Scriptural truth, are entitled to respect, however much and justly we may feel inclined to smile at their philosophy. These persons would stifle all inquiry into the subject, by reminding us of the Omnipotence of our Creator, and asking, with an air of triumph, if it were not possible for Him by the fiat of His Almighty Will, to have called these rocks into existence, loaded at first as now with organic remains.* Now, with due deference to these objectors, I would observe, that no rational geologist could presume to deny or to limit the Divine attribute of Omnipotence; Geology unfolds to view too many evidences of the repeated exercise of Infinite power as well as wisdom, to allow him to be guilty of such presumption. The question is not, how *could* Deity have formed these rocks? but how, judging from such evidence as finite and erring creatures can collect, *has* Deity been pleased in His Infinite wisdom to order their formation?

The objectors on this ground try to silence inquiry by the gratuitous supposition of a miracle. Dr. Pye Smith well observes, "Those who can satisfy themselves with

* The Rev. Mellor Brown, for instance (a most estimable clergyman in the Established Church) does not hesitate to declare that "Almighty God may, by the mere fiat of his power, have intentionally brought every rock and stratum, every fossil leaf, and shell, and bone, into its present form and condition;" an opinion, I should hope, expressed inadvertently.

such a supposition, made without evidence, at their own good pleasure, are beyond our reach of reasoning. No difficulty, no improbability, no natural impossibility appals them. They seem to have the attribute of Omnipotence at their command to help out any hypothesis, or answer any exigency." It is most likely that the individuals holding these tenets have never considered to what their doctrine would lead, if indefinitely carried out. If this mode of explaining difficulties be legitimate in Geology, it is also available in the other sciences; and thus every knotty point in philosophy might be set at rest by calling in the convenient aid of Divine miraculous agency. Surely there never was a dictum more calculated to foster intellectual idleness, to fetter and enthral the human mind, or to prevent the noblest exercise of man's reason in the inference of causes from their effects, than this—that what we see around us may be the result of miracles, and therefore must not be investigated. All the wonders of electricity, chemistry, and Astronomy might be referred to the same source. Once let a dogma like this be established, and there would be an end of all physical, aye, and of metaphysical science also. But further, "Divine wisdom has never lavished away miracles." If we take the Scriptures as our guide, we shall find that the only miracles there recorded to have been wrought, were intended to form the credentials of some individuals professing to bear a revelation from God. This was the case with those of Moses, Joshua, Elijah, Christ, and his Apostles; indeed I know of no exception. Can we then believe that at the creation of our planet, in addition to that wondrous effort of Divine power, the act of bidding this stupendous globe to rise, and swinging it on high amid the glittering lamps of heaven, to roll mysteriously through the silent realms of space, when "the morning stars sang together, and all the sons of God shouted for joy;" can we believe that in addition to this, it should have pleased the Mighty Artificer of the earth to stratify and laminate its

surface, and miraculously fill its crust with the forms or imitations of organized existence, for no other imaginable reason than to puzzle a few geologists? The very supposition is monstrous.

Others again there are who, admitting the aqueous origin of the stratified rocks, and the reality of their organic contents, imagine that the length of time which elapsed between the dates of the Adamic creation and of the Noachian deluge, is sufficient to account for all the phenomena presented. This class will admit there is evidence to prove that the causes still in operation were those employed in former times in producing the formations we see around us; but they assert that these causes may have operated with far greater intensity then than they do now; so that a deposit, which at the rate of deposition now going on in our lakes and seas, would take centuries, or even thousands of years, to form, may have been formed then in a comparatively short time. But it must be apparent to all that this is a complete "petitio principii," a begging of the whole question. That present causes may have once operated with increased intensity is certainly within the range of possibility; but where is the evidence of it? The "onus probandi" rests upon the party making the assertion; and some definite and tangible evidence must be afforded before any sane philosopher can give up reasonable deductions from hosts of carefully elaborated facts, to the "perhapses" and "may-have-beens" of any individuals, however estimable in themselves, or laudable in their intentions.

We see, at the present time, streams and rivers rolling torrents of mud into various lakes and seas, there to be deposited; and, as it falls, entombing shells and other relics, just as in former times: we see earthquakes shattering the solid framework of the globe, and volcanoes, at one time obtruding their molten streams into stratified formations, and at another raising mountains on our continents, and islands in our seas: we see coasts gradually rising above the

tidal level, as in Scandinavia, where a rise of three feet in a century is still taking place: we see immense quantities of timber carried into rivers and estuaries, where they become cemented together by mud and then deposited, as in the Mississippi: we see denudation taking place as in former times, and broken fragments of rocks being rolled into pebbles and carried to immense distances by the transporting agency of water: we see those industrious creatures, the coral animals, still at work building up their reefs, and studding the vast Pacific with innumerable islands: all these and many other causes we see still in operation, and finding their effects precisely analogous to those produced in past ages (knowing that like causes produce like effects), we are justified in believing that these several agencies were employed in producing the formations upon which we stand. But until we have positive proofs on the subject we are not justified in assuming that these causes operated then with much greater intensity than at the present day.

It will be unnecessary to pause longer here to canvass the question, how far it was possible for the whole series of stratified rocks to have been deposited, and for the various races, whose relics are therein entombed, to have been called into existence, lived their day, and become extinct, within the short period (of 1656 years, according to the Hebrew text, or of 2262 years according to the Septuagint and Josephus) which elapsed between the Adamic creation and the deluge; inasmuch as all the succeeding remarks will bear reference, more or less, directly to this subject.

Nor need I point out in detail the various causes and instances of change still taking place, but will pass on to our more immediate subject; after briefly showing by what means the geologist is able to ascertain the thickness of the different series of rocks. The aggregate thickness of the sedimentary or stratified rocks alone is estimated at about ten miles. Now, the two deepest mines in Great Britain are, one in Cornwall, and the other at Monk Wearmouth, in

Durham, neither of which much exceeds three-tenths of a mile; and the deepest mine in the world, at Kitzpuhl, in Upper Austria, is only 2,764 feet below the surface, or a little more than half a mile. It is certain, therefore, that little information can have been gained by perforations downwards; while, on the other hand, the loftiest peaks of the Himalaya mountains are not quite five miles in vertical height, so that however interesting the examination of mountain sides, and the steep declivities of valleys and ravines may be, it would be of little value in ascertaining the thickness of the several strata. Fortunately, however, there are other sources of information; and in consequence of the manner in which stratified materials are arranged in the earth's crust, it is quite possible, by a careful combination of direct observations, to know correctly the structure of the globe to the depth of three, five, or ten miles, according to the situation and circumstances of the country. To accomplish this it must be borne in mind that, although the stratified rocks were for the most part deposited horizontally, they seldom now occupy their exact original position. They are not found one above another in parallel layers, like the leaves of a closed book, and forming concentric spheres round the earth, like the paper and varnish of an artificial globe, or the various coatings of an onion; but they have been broken and upheaved to the surface at different angles of elevation, so that their edges crop out, and by observing the extent of these edgings and croppings, and comparing them with natural sections, borings, &c., it is easy to form a tolerably correct conclusion as to the thickness of the various formations. The order of the strata, though occasionally broken, is never inverted; the carboniferous limestone is never found below the Silurian system, nor the New Red Sandstone below the Old Red or Devonian group, nor are the tertiary crags and clays, with their teeming myriads of fossils, ever found intercalated with rocks of the secondary or transition systems. Yet it is true that for-

mations which are found in some districts are sometimes wanting in others. But what does this prove? Merely that the rocks in such districts were above the level of the sea at the time of the deposition of the strata not found, and consequently could not be covered by them.*

After these lengthy preliminary observations, in which we have first noticed the opinions of the opponents of geology, and then briefly explained how its advocates are enabled to ascertain the thickness of the different series of rocks, and the degree of importance to be attached to the fact, that certain rocks which occur in some districts are wanting in others, I proceed at once to the immediate subject of the present paper. And in considering the proofs of the antiquity of the globe, a difficulty meets us at the very threshold of the inquiry—viz., what class of rocks first to cite as witnesses, and what period in the physical history of our planet to fix upon as a starting point. We might, under the guidance of some philosophers, go back in imagination to the time when the now solid materials of the globe existed in the form of nebulous matter, floating, like the fleecy clouds in our own atmosphere, through the infinite

* For instance, between the Silurian Limestone and the coal, two other formations, the Old Red Sandstone and Mountain Limestone, are generally found intercalated. In the South Staffordshire coal-field, however, they are entirely wanting, and the coal rests immediately upon the Silurian Limestone. But what does this prove? Merely that the Silurian Limestone had been previously raised by subterranean agency to the surface, where it remained while these two formations were deposited; parts of it were afterwards again submerged, when the coal was carried down and consolidated upon it, and the New Red Sandstone deposited above the coal; after which they were again raised, and have not been since submerged, the New Red Sandstone being still at the surface. In Herefordshire the converse of this has taken place. The Silurian Limestone near Ledbury is covered to an immense extent by the Old Red Sandstone, above which no other strata are found; which proves that during the deposition of the Old Red Sandstone that district was under water, but that it was raised above the surface before the deposition of the Mountain Limestone; Coal, or New Red Sandstone, and has remained so ever since.

regions of space. Or we might begin with the present state of things, and take a retrogressive journey through the regions of the past; but, for many reasons, I prefer the opposite mode of commencing with some former period in the world's history, and tracing the progressive changes on its surface, until it became a fit habitation for God's favoured creature—man.

Below all the stratified rocks masses of crystallized granite are found to exist, so as to form a general floor, irregular in surface, and of unknown thickness, upon which all other formations rest as the superstructure upon the foundation. We have not time to travel back so far as to the period when this granitic floor was formed, but assuming its existence, we will make a brief examination of the rocks above it; firstly, noticing their mineral composition, thickness, and order of position; secondly, observing the vast heaps of organic reliquiæ of which these rocks are the depositaries; and, thirdly, glancing at the relative changes of sea and land, which the former considerations inevitably involve. And in thus omitting the granitic rocks from our list of witnesses, I am willingly relinquishing what would materially increase the weight of evidence to be adduced; for in the words of an eloquent author, "Can any man imagine that granite was created in its characteristic state, a composition of visibly and palpably distinct materials, scarcely mixed, only loosely put together? It would be almost as reasonable to affirm, that the stomachs of the first animals were created with bitten and masticated fragments of the appropriate food in them. Whence came the quartz, the mica, and the felspar, each a rock of separate existence? Whence the schorl, the augite, the steatite, and other interminglings? Must we not pursue them to their chemical decomposition? Can we stop short of believing, that the original act of creation produced the primordial elements, by the combinations of which all

mineral and all organized matters have been formed ? Then we have gone back to the fathomless abyss of ages of ages."—Pye Smith.

We commence then with the stratified formations lying above the granite. All these bear incontrovertible evidence of having been carried down, in the shape of detritus, from the older mountains, by the agency of floods, streams, &c., and deposited at the bottom of the then existing lakes and seas; where, partly by the pressure of the water above them, and partly by the influence of interior heat, they became consolidated. They were afterwards, by subterranean forces, fissured, broken, and raised to the surface, perhaps in the lapse of ages to be again submerged, covered with new deposites, and again raised above the waters. It has been already stated, that as causes of abrasion, transportation, consolidation, &c., are still in operation as in former times, it is unphilosophical to assume, that these processes then took place with much greater rapidity than they do at present. Further than this, there are indubitable proofs, that most of the sedimentary strata cannot have been deposited rapidly, but must have subsided from aqueous suspension slowly, gradually, and in tranquil water.

In many formations, each bed or stratum consists of an indefinite and often almost infinite number of thin laminæ or plates, which have evidently been slowly and steadily suffered to fall one above another. "Among these laminæ in the lacustrine formations," according to Professor Sedgwick, "we can sometimes find the leaf sheddings and insects of successive seasons. Among them, also, we find almost mountain masses of the *Indusiæ tabulatæ* (the cylindrical cases formed for its habitation by a six-legged insect larva, which inhabits ponds and small streams, creeping at the bottom), and other sheddings of insects year after year." In some formations too the very ripple marks of the waves and rain-drops are still preserved; and in others the footsteps of now extinct reptiles which had crawled over them

during their soft and partially consolidated state, as in the new red sandstone near Dumfries, and the forest marble near Bath. The delicacy and singular perfection of the fossil reliquiæ are also such as clearly to indicate that no violent action can have taken place during their entombment. Thus we find fishes with their scales unbroken and undisturbed, and the skeletons of gigantic saurians with partially digested fragments of their food still remaining in their interior; we find shoals of various kinds of shells, beautifully perfect, extending over a limited area, clearly showing the spot in which they had lived and died; we find the elegantly marked nautilus and ammonite, with hosts of kindred species, still retaining their beauty and enamel; we find numerous shells with sharp spines and angular edges, such as the Plagiostoma spinosa Euomphalus, and many of the Tertiary varieties, preserved unbroken and entire, as recent specimens are found when dredged from the bottom of a quiet lake, but never, if they have been subjected to tidal action, on the beach; we find bivalve shells (such as the Unio in our own coal-field), with their valves, not rudely separated and dashed to pieces, but still connected by the altered cartilaginous matter which during life had formed the hinge; we find parasitic shells still adhering to those, to which they were accustomed to attach themselves when inhabited by the creatures whose tenements they were; we find Crinoidea, such as the Pentacrinite in the Lias, with their long slender branches and tens of thousands of joints, very little injured or impaired; and we find "the beds and ledges of petrified corals of many species, still retaining the position in which they grew at the bottom of an ancient sea; as coral-banks are now in process of formation in the inter-tropical regions of the present ocean."—Buckland.

And once again, if we turn to the vegetable fossils, how exquisitely perfect do we find the ferns, reeds, coniferæ, and other vegetable remains, so profusely scattered through the coal formations. We find the stems of immense palms

occurring full of silty matter, containing the leaves of other plants, which shows that after those stems were submerged, the inner parts (which in plants of that class are softer and always decay sooner than the outer) had been decomposed, and then quietly filled up by the falling mud, inclosing other leaves, &c., thus clearly pointing out the tranquil nature of the whole process: and in other cases trees are found standing as they grew, and still surrounded by their original soil, though afterwards covered by marine strata to the depth of thousands of feet. This occurs in that remarkable formation, the Portland Dirt Bed, and it most satisfactorily proves the tranquil nature of the deposition; for had the action been of a violent character, how could the trees have remained erect as they grew, or how could the soft vegetable mould have remained around them?

All these, and a host of other facts, indubitably prove (independently of the general argument that we have no right to assume increased rapidity and violence in past ages) that the deposition of the sedimentary rocks was slow and gradual. If, therefore, the former changes in the earth's crust were much more rapid and violent than they are now, they can only have been so in the case of the crystalline or granitic rocks which we are now leaving entirely out of our calculation.

And after this general glance at the condition of the stratified rocks, let us proceed to examine them in detail; commencing with the lowest, which all will admit to be the oldest; for as, in visiting an Egyptian pyramid, if we found thirty or forty sarcophagi placed one above another, we should naturally assume that the lowest of the series had been placed there first, so with the stratified rocks—those vast sarcophagi in which alone are found the relics of the myriads of creatures that tenanted our earth before man's reign commenced.

The first appearance of stratification is in the rocks forming the Gneiss and Mica Schist systems, which are

found reposing on the irregular surface of the granite, and in this part of the world are principally developed in the Hebrides, the Highlands of Scotland, and some parts of Ireland. These rocks are composed of the same materials as the granite; the chief, if not only, difference between the gneiss and mica schist being that, while the former contains the three ingredients of granite,—quartz, mica, and feldspar; the latter is principally formed of quartz and mica alone. If, however, these rocks closely resemble granite in their mineral composition, it does not follow that, like granite, they must necessarily be of igneous origin. On the contrary, it can be abundantly proved, that they were submitted to aqueous action, and deposited by aqueous suspension, and that they only resemble granite because they were produced by the detritus of granitic rocks; for in this early period of the history of the earth all the rocks above the ocean were granitic. "Let any one, for example, compare in well characterized granite and gneiss the constituents, felspar and mica; in granite these are always perfectly crystallized within, and have regular external geometrical figures; in gneiss the internal crystallization remains, but the felspar is rounded like sand or small pebbles, or fragmented like a broken crystal, and the mica is bent and contorted by irregular pressure among the felspar and quartz. Add to these circumstances the lamination of the masses, and we see clearly that gneiss and mica schist resemble granite, because their materials have been derived from granitic rocks; but they differ because they were accumulated under the mechanical influence of water, and not aggregated by chemical forces from a state of igneous fusion."—Phillips.

Every atom, then, of these rocks has been derived by atmospheric abrasion, the action of rain, floods, streams, &c., and other similar causes, from previously existing granite; there must, consequently, have been time during their formation for the disintegration of the primeval mountains;

for all the atoms forming these masses to be broken off, removed, rolled about, carried into seas, diffused through their waters, and eventually falling by their own gravity to the bottom, there to become consolidated into the rocky beds in which we now find them. Time must, therefore, have elapsed, but how long that portion of time was, it would be too daring to conjecture. We know from the ordinary way of such a process, which in many cases can be observed and watched, that it would be extremely slow. The trituration, depositing, and permanent fixation of a very few inches, would be a liberal allowance for a hundred years. What, then, is the average thickness of the gneissic rocks, where they have been displayed to view? On account of the intervention of other rocks they cannot be sufficiently explored, and therefore surveys fall short of the full amount as to magnitude; but enough is exposed to demonstrate an exceedingly great thickness. Professor Phillips, one of the most cautious of geologists, says, "We may believe it to exceed many thousand yards, and the mica schist several thousands more."

Above the gneiss and mica schist come the Clay Slate, and Greywacke systems, forming such immense mountains as Skiddaw, Snowdon, and Sca Fell, constituting nearly the entire Isle of Man, and extending over immense tracts in the northern counties of England and Wales. The Clay Slates are of argillaceous composition; indeed, they appear to be nothing more than the clayey matter, brought down by floods and rivers into the early seas, there becoming deposited in laminæ, and eventually consolidated. The Greywacke, again, which alternates with and very closely approximates to the Clay Slates, is merely the substance of the clay slate diffused amongst and around grains of feldspar, mica, quartz, fragments of jasper, or other minerals, and the whole considerably indurated.

The mode of formation, then, of this system of rocks is proved by striking characters to have been the same as that

of gneiss and mica schist. Their materials were detached from the older rocks, transported, rolled and rubbed into a state of mud, carried down into the seas, gradually deposited in thin beds, one above the other; and there, either by pressure from above or heat from beneath, or perhaps by both, consolidated, before they were upheaved to the surface, to win our admiration by the broad swelling outlines, the lofty crags, the dizzy precipices, and fearful ravines, which their mountain masses now present, even in the limited confines of our own island. The process of formation was slow, very slow; what, then, is their thickness? It is unknown, but is proved to exceed several thousand yards. Any who are familiar with our English Lake district, or with the boldness and grandeur of the North Welch scenery, must have some faint idea of the scale of magnificence on which this formation was deposited. We shall not certainly be guilty of exaggeration in estimating the united thickness of the Gneiss, Mica Schist, and Clay Slate systems at from three to four miles.

Pursuing our investigations in an ascending order, we next arrive at that deeply interesting and familiar class, the Silurian, or Dudley and Sedgley rocks, &c. These consist of indurated clayey matter, sandstones, and limestones. The accumulation of the two former has evidently been regular and tranquil; the beds are very distinctly marked, and are full of the laminæ of deposition. In the formation of the lime, however, two agents appear to have been at work, viz., water and coral animals. That these industrious creatures have had much to do with the formation of these rocks is proved by the abundance of coralline remains therein imbedded. The Wren's Nest Hill, for instance, at Dudley, is a time defying monument of the patient industry of its tiny artificers, and a splendid mausoleum to their memory; it is, in fact, one gigantic tumulus of coral, crustacean exuviæ and mollusca, cemented together by carbonate of lime. The lime, there can be no doubt, was abstracted from the sea

water by that peculiar "vital action which dissolves the strongest chemical aggregations, and fixes the unwilling elements in new combinations. The perfectly laminated structure of the rocks requires the further admission that the materials were arranged in obedience to the fluctuations of water."—Phillips.

Thus we see at how slow a rate the laminated sedimentary rocks have been deposited: and we know on the combined authority of all modern observers that the growth of coral reefs is still inconceivably slow. According to three authors of the highest credibility (Stuchbury, Captain Flinders, and Williams, the missionary), six inches in a century is about their present rate of growth in the Pacific Ocean. The aggregate thickness of the Silurian rocks and shales alone is estimated by Sir R. I. Murchison at not less than 2,490 yards, or nearly a mile and a half. All attempts to calculate the ages which must have rolled away during the formation of such a mass as this, by the twofold agency of slow sedimentary deposition, and the still slower growth of coral reefs, must be utterly futile; we are completely lost in attempting the calculation; and imagination herself is compelled to acknowledge her inadequacy even to conceive the mighty period.

We next arrive in our upward course at the Carboniferous group, with its three distinctly marked formations, the old Old Red Sandstone, Mountain Limestone, and the Coal. The Old Red Sandstone, or, as it is better termed, the Devonian group, so extensively developed in Herefordshire, Monmouthshire, and Devonshire, is the lowest of the three. It consists chiefly of clays, conglomerates, and sandstones; the last are formed almost entirely of comminuted fragments of quartz rocks, rubbed and broken by aqueous trituration, and deriving their red colour from oxide of iron. Its rate of deposition was exceedingly slow, and yet in many places it is of the enormous thickness of 3,300 yards. A recent writer observes, that the deposite of mud

now carried down the Nile, is about a quarter of an inch annually; if instead of this, we allow three inches a year for the deposition of the Old Red Sandstone, and this is probably far above the truth, even this one formation, the lowest of the three members of the Carboniferous series, would have occupied in its deposition a period of more than 36,000 years.

The next formation, lying immediately above, is the Carboniferous or Mountain Limestone, occurring in great abundance in the North of England, Derbyshire, and the banks of the Wye. This, like the Silurian, bears evidence of slow oceanic growth, its zoophytes are all absent from the coal which rests upon it; its shells and other exuviæ are all marine; no traces of land reliquiæ, either of plants or animals, are to be found in its rocks; so that the materials of which these are formed, were evidently not swept from the land, like the arenaceous deposites, but slowly elaborated from the salts of lime diffused through sea-water. I have already remarked how slowly these decomposing processes now go on, where myriads of zoophytes are still pursuing their labours in the vast oceanic laboratory of the Pacific. How long then must these little creatures have pursued their avocations beneath the calm deep waters of that mighty ocean, which once swept over so large a portion of our globe, before they could have aggregated such a mass as the Mountain Limestone, 900 yards in thickness!

We next come to the Coal itself, the third and last subdivision of that class of rocks, which grouped together form the Carboniferous system. This formation is of the thickness of 1,000 yards or more, consisting of indefinite alternations of shales and sandstones of different kinds, with about 50 feet of coal in many beds, some ironstone layers, and, very rarely, thin layers of limestone. The shales and sandstones claim the same source as most of the rocks already examined; they were the debris, mud, and clay, carried down from the then existing lands, but the coal had

a totally different origin. Our coal-beds are in fact the grand natural Herbaria of a former world, in which are preserved the only remaining specimens of that once-abundant flora, that decked in rich luxuriance the surface of the earth. The texture, chemical composition, and other features of the coal, have long made it manifest, that this source of England's wealth has sprung from the wreck of forests, which flourished on the primeval earth, in the form of gigantic Calamites and stately Lepidodendra. They were carried down into fresh-water * lakes or estuaries, where they floated on the waters until they sunk saturated to the bottom, and there, mingling with the detritus of adjacent lands, were entombed through a succession of numberless ages; preserved, chemically changed, newly combined, converted from vegetable to mineral, to be eventually upheaved, by the good Providence of our Creator, to new positions, so as to be attainable by the skill and industry of man.

It must not, however, be supposed, because the coal formation had a different origin from that of the other rocks, that its deposition on that account was more rapid; on the contrary, a slight examination will prove the reverse. In Staffordshire, it is true, we possess one bed of this invaluable mineral, which alone measures thirty feet in thickness, but this is the most remarkable accumulation of the kind in England; generally speaking, it occurs alternating with shales and sandstones, in beds of various thickness, thus showing that its deposition was slow and gradual. This is the case in the Newcastle coal-field, where the alternating beds are fifty-two in number, the twenty-six beds of coal varying in thickness from two inches to two yards. In the Wolverhampton coal-field, at the Chil-

* As the absence of land plants and animals goes far to prove the marine origin of the Carboniferous Limestone, so the exclusiveness of these reliquiæ in the coal proves *its* undoubted terrestrial origin.

lington works, a depth of 114 yards comprehends no less than seventy-six different beds or measures.

How long a time then ought we to allow for the formation of the 1,000 yards and more constituting the coal deposites? Dr. MacCulloch says, "The great tract of peat near Stirling has demanded 2,000 years, for its registry as proved by the Roman works below it. It is but equal to a *single* bed of coal; shall we multiply it by 100? We shall not exceed, far from it, if we allow 200,000 years for the production of the Coal series of Newcastle with all its rocky strata. A Scottish lake does not shoal at the rate of half-a-foot in a century; and that country presents a vertical depth of far more than 3,000 feet in the single series of the oldest sandstone. No sound geologist will accuse a computer of exceeding, if he allow 600,000 years for the production of this series alone. And yet, what are the coal deposites, and what the oldest sandstone, compared to the entire mass of the strata?"

We next come to the New Red Sandstone or Saliferous system, occupying nearly the whole of Cheshire and other counties, and in this neighbourhood lying occasionally above the coal. The name "Saliferous" has been given to this formation, from the fact of the chief, if not only, beds of rock-salt in this country being found within it. It is subdivided into two series of strata; the Magnesian Limestone and the New Red Sandstone.* The Limestone bears the usual evidences of being partly coralline and partly sedimentary, while the Sandstone, consisting chiefly of arenaceous beds, marls, clays, and conglomerates, is beyond all doubt of slow sedimentary growth. This system of rocks advances us again 400 yards in our progress upwards.

* We are indebted to the valuable researches of Professor Ramsay and other gentlemen connected with that excellent institution, the Government School of Practical Geology, for subsequent and highly important subdivisions of the Saliferous system.—[Editor.]

Above this we next arrive at the Oolitic system, with its subordinate divisions, the Lias and the Oolite, to which I will add the Wealden formations. One of the most striking features in these rocks is their very large relative proportion of blue marls and clays, associated with sandstones and interstratified beds of lime. "In the whole series not a mass occurs which can be viewed otherwise than as an original deposition, or a subsequent concretion of aqueous sediment. The sandstones are always stratified. The clays are either laminated, or appear as vast uniform masses of sediment. Jet, a frequent substance in the clays, lies in laminæ parallel to the stratification, being nothing less than chemically-altered coniferous wood. Thin limestones, associated with thick clays, as the lias limestones are usually laminated and interstratified with the clays."—Phillips.

Now, this system of rocks is about 1,100 yards in thickness. Need I ask how long a time such a mass as this must have taken to be, in part quietly elaborated by zoophytes from sea-water, and partly worn away from its parent rocks by various erosive influences, carried down, held in suspension by water, deposited, hardened; and in the course of ages again upheaved, with all its teeming myriads of fossils, to form the cliffs of Dorsetshire, the hills of Gloucestershire, and the flanks of the Himalaya mountains? What mind can indulge in contemplations of this character without being led to exclaim with Mr. Poulett Scrope, "Time! Time! Geology compels us to make unlimited drafts upon antiquity."

Our next step brings us to the Cretaceous system, comprehending the chalk and greensand. The chalk is of the same origin as the limestones which have been already considered; its chemical composition is precisely the same, only it is whiter and softer. It is clearly of oceanic origin; its organic remains are all marine; its corals, mollusca, fishes, and reptiles, were all tenants of the sea, and mammalia and land plants are unknown among its fossils. There can be

no doubt, therefore, that this formation was slowly abstracted from, and deposited beneath, the waters of a tropical sea; little disturbed by inundations from the land; or ferns and other land plants would be found among its strata. The chalk in many parts seems to be made up of vast masses of infinitely minute microscopic shells, all of which must have gradually come into existence, lived, died, and been tranquilly entombed; but who can tell the ages that rolled away during these operations, before the formation of such mountain masses as the cliffs of Dover, Flamborough Head, and the hills of Kent and Hampshire, could have been accomplished? This one system, with its two subdivisions, the chalk and greensand, is 360 yards in thickness, and brings us to the end of those deposites, ranked by geologists under the title of Secondary Rocks.

But there is yet another class claiming our attention—this is the Tertiary series—prior to the deposition of which we know that many of our present continents and mountains were upraised, and the earth had assumed somewhat of its present general aspect, though neither man nor, until we arrive at the later members of this system, many of his cotemporaries had as yet been created. These strata, like most of the others, include chiefly arenaceous or sandy deposites, with some argillaceous, and some both marine and freshwater limestones. Marine, freshwater, and terrestrial exuviæ, are found in strata of all these descriptions; the sea, land-floods, river currents, lakes, and springs, have all contributed to their accumulation, and left characteristic marks of their action. The sandy rocks are either in the form of conglomerates, including fragments of pebbles, and boulders of other mountains, or appear as sand, rarely indurated to sandstone, of various shades of colour. Beds of rolled pebbles and layers of lignite are not unfrequently among them. The Tertiary limestones are also less indurated than those of the older rocks, being occasionally soft and marly—in other localities coralline like the English

crag; but in some cases hard and compact, enclosing nodules of flint, &c., many of which contain chalk or other fossils. Had these fossils the gift of language, what a history could each one unfold! This, however, they have not, but still they speak a silent language which we cannot easily misunderstand. How true it is that, by the aid of Geology, we may literally find "sermons in stones!"

Because the Tertiary is the uppermost of the many systems which we this evening have passed in review, it is not to be supposed that it is necessarily of recent date. That it is of less ancient origin than the lower formations is of course inferred from its position, and other considerations; but it must be borne in mind that these rocks alone are nearly 700 yards in thickness, and that in some cases freshwater beds alternate with those of marine origin in such a manner as to show that, during their formation, there must have been many changes in the relative position of sea and land, which we cannot believe to have taken place within the limited period of a few thousand years. In the Paris basin, for instance, there are five distinct formations in this series; the upper one is of freshwater origin; the next, in descending order, marine; the third, freshwater; the fourth, marine; and the lowest, of confused origin, as though deposited in a troubled estuary or river's mouth. It is to be recollected further that, notwithstanding the vast thickness of these rocks, their accumulation must have been extremely slow, from the very nature of the materials of which they are composed. Take, as an example, the crag formation, which is the uppermost of the series; this, according to Phillips, "resembles a raised sea-beach, being composed of layers of sand and pebbles, mixed with marine shells and polypifers, worn fish teeth and bones, quadrupeds bones, &c." How long must these shells, teeth, and bones, have been in forming such masses as our Norfolk and Suffolk crag? Mr. Babbage, proverbially as calm a calculator as his own calculating machine, in his ninth "Bridgewater

Treatise," regards it as a truth supported by irresistible evidence, that "the formation of the strata nearest to the surface must have occupied vast periods, probably millions of years."

We have now arrived at that period in the physical history of the earth, in which its surface appears to have attained very nearly its present condition; and we have seen that the same processes which we have traced through so many geological epochs are still taking place around us. We need only bestow a cursory glance upon the present face of our planet, in order to be convinced that, since the elevation of the tertiary rocks, a period of time, stretching back ages beyond the Adamic creation, must have elapsed. Go, for instance, to central France. In the volcanic district of Auvergne, we find the lava from still existing, though long spent, volcanic craters, topping the tertiary limestone, and rivers have, since the flowing of these lavas, worn themselves new channels, and eaten through the columnar basalt into the granite rocks beneath, leaving precipitous walls on either bank to the height of 150 feet. This is a most striking case; first of all the tertiary lacustrine limestone must have been upheaved, afterwards covered to an enormous depth with volcanic lava, and subsequently a sufficient period has elapsed for the erosive action of rivers to cut out channels, through the hard basalt and granite, to the depth of at least fifty yards, or, to give some tangible idea, to nearly twice the height of the tower of Wolverhampton Collegiate Church.

Again, the erratic boulders, beds of pebbles, gravel, &c. (commonly known by the name of "Diluvium," frequently enclosing the bones of extinct animals, but never in any single instance well-authenticated, the relics of man or his works), appear to carry us back to a period long anterior to that assigned as the date of the Adamic creation. Into their dark eventful history, however, we will not go; we have already investigated at least ten miles perpendicular

depth of stratified, sedimentary rocks. Now, when we speak of ten miles of horizontal length or breadth, the mind has a clear conception of what is meant; for, by our powers of locomotion, we have all repeatedly traversed the distance; but when we speak of ten miles of vertical height, we can form no definite idea, we cannot grasp its image. And if there be this difficulty in forming a conception of the mere aggregate mass of these rocks, how utterly beyond our reach is it, how completely does it transcend the bounds of the swiftest-winged imagination, to form the slightest approximation to a correct idea of the lapse of time, of the mighty stream of ages, centuries, thousands of years, that have rolled away during their slow and tranquil deposition!

As a second branch of our subject, it was proposed to take a hasty glance at the successive races of organic beings which have inhabited the earth. This subject has already been partially anticipated, so that very few words will now suffice. I presume that, in this enlightened day, it would be a work of supererogation to call attention to the fact, that however great the effect circumstances may have in improving or otherwise modifying the species actually existing, yet there are certain bounds which cannot be passed, and no circumstances nor modifications can cause one species to be transformed into another. Every distinct species, therefore, whether of plants or animals, was undoubtedly the result of a distinct act of creative energy. The idea of the gradual transmutation of species from simple to more complex types, once very generally received, is now, together with its companion in absurdity, the doctrine of metempsychosis, consigned to merited oblivion, and therefore requires no notice here. It may be well, however, to protest against an idea which almost involuntarily arises in the mind, whether the myriads of creatures, whose relics are preserved in the fossiliferous rocks, were not short-lived, and suddenly destroyed by some grand natural convulsion. Such a view is a gratuitous assumption, without the sem-

blance of proof, and contrary alike to reason and analogy. With the most careful investigation, no evidence whatever can be adduced in favour of it. Further still, we perceive in all our Maker's ways uniformity of operation as well as of design. Can we, then, for a moment believe that He would call whole races of sentient beings into existence, and after permitting them to live a short time, by one sudden effort of Almighty power, blot them out from the face of creation? Surely not. We cannot reasonably believe otherwise than that all these creatures fulfilled the purpose for which He created them, and then were suffered gradually to die out, or become exterminated by the predaceous habits of other tribes, or disappear by other natural means, as species have done since man was created. Within a very recent period we have conclusive evidence of the Dodo becoming utterly extinct, no specimen having been seen since 1755. In our own country, the wolf, the wild boar, and the bear, have all disappeared. The kangaroo and emus are also retreating rapidly before the progress of colonisation in Australia, and will doubtless soon become extinct. And if other cases of complete disappearance have not been recorded, it does not follow that they have not occurred. It is comparatively recently that natural history has been extensively studied, so that we could not record the extinction of species of whose existence we were ignorant. Most of the extinct animals introduced to us by Geology were, moreover, aquatic; and none but a mermaid could inform us of all the organic changes which took place among these classes ever since the date of man's creation. Bearing in mind, therefore, that we have no reasonable ground for believing former species to have been suddenly and violently destroyed, we will take a rapid glance at that immensely varied succession which Geology discloses.

In the earliest stratified formations, the Gneiss and Mica Schist, there are no traces whatever of organic life, either animal or vegetable. The land and mountains being at that

time entirely granite, would be highly unfavourable to vegetation, and as a consequence to animal life; and most probably the temperature of the sea was such, as to unfit it for the reception of either finny or shelly inhabitants.

In ascending to the Clay Slates, we find the first remains of organic beings; about a dozen species of shells, &c., on Snowdon, and about twice that number elsewhere, have alone been found; all are of extinct types, and no traces of plants occur. From the small number of these remains we may fairly argue that organic life was not yet very abundant upon the globe: perhaps only certain portions of its surface were yet fit for its reception. Still it is not to be inferred that these twenty or thirty species were all that then existed. The bottom of the sea may have been, and in all probability was, unsuited to the preservation of delicate organic remains; yet those that have been found possess a peculiar interest, from the fact of their being the oldest records of organized existence to be met with upon our planet.

In the next formation, the Silurian, organic life was much more abundant. The twenty or thirty species of the Snowdon Slates here increase to between 500 and 600, all since extinct. These rocks being oceanic deposits, we could not naturally expect many remains of terrestrial flora; inasmuch as comparatively few would be washed into the ocean, and few even of those would resist decay and be eventually preserved. Yet there are fourteen or fifteen species of land plants; but the great mass of its reliquiæ were the tenants of the sea, Corallines, Encrinites, Trilobites, and other Crustacea, Univalve, and Bivalve shells, with the skeletons and bones of fish.

The Old Red Sandstone, or Devonian system, was once thought to be almost destitute of organic remains; "but recent researches, particularly in Scotland, have brought to light numerous and highly interesting relics of fish, but none of them such as belong to the present order of creation. They are all of species and even genera not now existing."

In the Carboniferous Limestone we find the traces of organized existence extremely abundant. It has been already shown that this, like the Silurian, is an oceanic deposit, consequently marine exuviæ form its chief, if not only, contents. Zoophytes, Productæ, Goniatites, Euomphali, Pleurorynchus, and a host of other marine relics are there found; sixty per cent. of which are of extinct genera, and every one of extinct species: and nearly all the species are different from those of the same genera in the older or Silurian formation. The greater portion, therefore, of those that swarmed in the Silurian ocean had answered the end of their creation before the Carboniferous Limestone was deposited; though only one formation, the Old Red Sandstone comes between them. There are no means of ascertaining the exact duration of present testacean life, but there is reason to believe that each individual exists several years; and there is no evidence that any one species has died out since the Adamic creation. Who then can state the proportion which the average length of life in the individual Mollusc or Conchifer bears to the duration appointed by the Creator to the species? We shall be considerably below the mark if we allow 6,000 years, for we find of the 500 or 600 species which flourished during the Silurian period, nearly all had disappeared before the Carboniferous Limestone was formed.

We next advance to the Coal, which, as we have seen, was formed from vegetable matter drifted into freshwater lakes and estuaries. Immense fishes, such as the Megalicthys, partaking both of the fish and lizard character, had now sprung into existence, and basked in the sunny waters, where the luxuriant vegetation of the land was drifted: thousands upon thousands of Unios (Bivalve shells resembling our recent muscle) existed on the bottoms and margins of the lakes: while upwards of 300 vegetable species, most of them of tropical types and gigantic dimensions, stately Palms, lofty Calamites, and arborescent Ferns, waved upon

the surface of the land. No terrestrial animal appears yet to have been created.

The Saliferous system contains few organic remains, but these are deeply interesting. Some of the Coal plants, the Lepidodendra and Calamites still occur, but these die out during its formation; and Cycadeæ, like those of the Oolite next above, for the first time appear. Here also we have the first remains of oviparous quadrupeds, the Protosaurus and Phytosaurus. The Orthoceratites, Bellerophon, and the whole family of the Trilobites, including the various sub-genera of Asaphus, Calymene, Bumastus, &c., which were so abundant in the Carboniferous and Silurian Limestones, have all disappeared. Productæ, which were still more abundant in those formations, still occur, but they also perished during its deposition; and fishes of the genus Palæoniscus, are here found for the last time. What mighty changes have taken place! Who shall calculate the period which elapsed during their progress?

In the next group of rocks, the Oolitic, particularly its lower members, the Lias, we come in contact with other forms of existence, whose appalling size, power, and armature, startle and astonish us. Gigantic Saurians, some calculated to move in the water, some upon the land, and others in the air, burst upon the view; and notwithstanding their magnitude and numbers, most of them entirely disappear before the next formation was deposited. In the Oolitic rocks we are almost as much astonished at the profusion as at the beauty of their organic contents: between 1,300 and 1,400 distinct species of plants, shells, and animals being therein entombed. The Spirifera, which had lasted through the Silurian and Carboniferous Limestones, now disappear, while seventeen Gryphæ, and no less than seventy-five species of Belemnites had been created. Turtles of extinct species are in great abundance, and the plants, chiefly of the group Cycadeæ, bear considerable analogy to those now existing in the Cape of Good Hope and Australia.

In the next system, the Cretaceous, further changes have taken place. As an oceanic deposit, few land plants or animals are there interred; but the marine fossils differ essentially from the Oolitic, even in the same natural groups, such as Sponges, Crinoideæ, Crustacea, fishes, and reptiles. The seventy-five Oolitic species of Belemnites are diminished to eight; the seventeen Gryphææ are reduced to seven, and the 164 Ammonites to fifty-seven; while Hamites, Scaphites, and others are much increased in number and variety. Surely very many thousand years must have elapsed before such enormous changes can have taken place among the tenants of the ocean!

But if these changes surprise us, and require the admission of an immense lapse of time, the next transition is infinitely more wonderful. In passing upwards to the Tertiary series, every Cretaceous species disappears, and we meet with an entirely new assemblage of beings, generically resembling, but to a considerable extent specifically differing from the present inhabitants of the earth. Of Cephalopodous Mollusca, for instance, six whole genera (the Belemnite, Ammonite, Hamite, Scaphite, Baculite, and Nummulite), including upwards of 100 species, have entirely disappeared; and *vice versâ*, another Molluscous family, the Gasteropoda, have increased from six species to 751. The sudden and total change of species in passing from the Chalk to the Tertiary rocks in this country, might be supposed to indicate that the Cretaceous creatures were suddenly swept away, and the Tertiary seas immediately peopled by newly-created substitutes. But it is not so: for Murchison and Sedgwick have discovered in the Eastern Alps and other parts of Europe, a large series of intermediate formations: showing that in this case, as in all others, the species gradually disappear and were slowly replaced by others.

In the Tertiary formations considerable numbers of fossil Mammalia have been found, including the hippopotamus, elephant, rhinoceros, antelope, and many others of existing

genera, but for the most part of extinct species, together with the Dinotherium, Palæotherium, Anoplotherium, and various others of genera now unknown. The fishes, also, according to Agassiz, are nearly all extinct. But the most interesting relics are always the shells: these, partly from their hard enamel enabling them to resist the effects of time and other decomposing influences, and partly because the stratified rocks were formed beneath the element in which they dwelt, are both more abundant and better preserved than any other remains; and it is interesting to observe from these coins of nature, the gradual progress which took place in bringing about the existing state of things. The Tertiary rocks are divided into four separate formations, designated respectively the Eocene, Miocene, and the Older and Newer Pliocene; and in these upwards of 3,000 species of shells have been discovered and examined. Now in the Chalk not a single one of any existing species can be found. Not only the microscopic shells of which we spoke, but the splendid Scaphites, Ammonites, &c., all—all had perished. In the lower or Eocene division of the Tertiary group, however, among many that are now unknown, we find three and a-half per cent. of existing species; in advancing upwards, in the Miocene, there are eighteen per cent.; in the older Pliocene, these are increased to forty-one per cent.; and in the newer Pliocene, no less than ninety-five per cent. are of now existing species.

Sometime subsequently to the formation of the Tertiary rocks (most likely since the transportation of the beds of Diluvium which have been deposited since their elevation), it pleased Jehovah, in his divine love and wisdom, to create another being, of high intellectual capacity and of moral feelings and susceptibilities, and to place him upon the world which for so many ages had been preparing for his reception; and what greater or purer gratification can such a being enjoy, than in thus tracing the operations of his Father's hand long prior to his own creation, and inquiring in

an humble and submissive spirit into those great and glorious works, which "are sought out of all that have pleasure therein?"

We have seen, then, that during the deposition of the stratified rocks, various genera and hundreds of species have been called into existence, lived, multiplied to an immense extent, and then their whole races perished; and that this operation has not been of solitary but oft-repeated occurrence: we have seen also that both reason and analogy lead to the belief that since organic life was first created, its changes have been governed by the same laws as those that now exist: we have seen, moreover, that these extinct races have not been suddenly swept out of existence, but have slowly and gradually disappeared, each species having in all probability endured some thousands of years at least: we have seen most of the Silurian races disappearing before the Carboniferous rocks were deposited; their species in turn vanishing before the deposition of the Oolites; these, again, undergoing vast changes before the Chalk was formed; the Cretaceous perishing in every single instance before the Tertiary system was in being; and in that system, a gradual approximation to the present types of existence, in which many more species perished, and many others first appeared. How, then, shall we presume to estimate the lapse of ages that have passed since the first dawn of organic life appeared in the venerable relics which adorn the Snowdon slates, down to the yesterday when our frail race was born?

After this very hurried and imperfect examination, first of the nature, and secondly of the contents of the sedimentary rocks, there is yet another chain of evidence which it was proposed to examine:—that afforded by the various and repeated changes in the level of sea and land, which the facts already adduced necessarily indicate. Two examples are all that I shall bring forward: and first that deeply interesting one, the Portland Dirt Bed. Here we have,

first, evidence of the rise of the Portland stone, till it reached the surface of the sea in which it was formed; secondly, this surface became for a time dry land, covered by a temporary forest, during an interval, which is indicated by the thickness of a bed of black mould, called the Dirt Bed, and by the rings of annual growth in large petrified trunks of prostrate trees, whose roots had grown in this mould; thirdly, we find this forest to have been gradually submerged, first, beneath the waters of a freshwater lake; next, of an estuary; and afterwards beneath those of a deep sea, in which Cretaceous and Tertiary strata were deposited, more than 2,000 feet in thickness; fourthly, the whole of these strata have been elevated by subterranean violence, into their actual position in the hills of Dorsetshire.

The only other example to which I will call your attention is that afforded by my own neighbourhood. We have already examined the proofs that during the deposition of the Silurian rocks, a deep ocean, of tropical temperature, rolled its peaceful waters over that district. Subsequently to this, a great portion, if not the whole of the surrounding country, was raised above the waters and became dry land. This part of England was afterwards divided into several freshwater lakes or estuaries, into which the rank luxuriant vegetation which then decked the land, was drifted, deposited, and consolidated. I have already said much as to the tranquil nature of this deposition; but the most striking and conclusive proof has been only brought to light since the greater portion of the foregoing remarks were written. I allude to the discovery by Mr. Beckett, within a couple of miles of Wolverhampton, of a deeply interesting fossil forest in the coal formation, in which between seventy and eighty gigantic stumps of trees have been found, most of them standing erect as they grew, and still rooted in the clayey matter which originally formed their nutriment.

The coal there, coming nearly to the surface, has for some

distance, been stripped of the super-incumbent ironstone, shale, &c., and for a space of 2,400 square yards the whole surface of the coal bed, forming a sort of platform, is exposed to view. The bed is about a yard in thickness, and the immense trunks, accompanied by fragments of sigillariæ, &c., may be seen still for the most part perfectly erect, and rooted in a bed of fine clay, lying underneath them.

Now what do these interesting relics prove? They occur in the top beds of the Bottom coal at the Parkfield Colliery, beneath which are two or three other coal beds. These, therefore, prove that subsequently to the retirement of the Silurian ocean, several changes in the position of land and water took place during the formation of the coal measures alone. That spot was, if not a freshwater lake, at all events an estuary, when the vegetable matter forming the lower coal beds was drifted in and deposited: it *must* have been afterwards dry land when the trees of which I have spoken had their birth and grew there; and again this dry land must have been submerged, not with sudden violence (or the clay in which these trees grew must inevitably have been washed away, and they themselves would have been torn up by the roots and laid prostrate), but slowly and gradually beneath the waters of another lake or estuary.

Yet even these are not all the changes which have taken place in this immediate district. Subsequently to all that has been recounted, this part of the country again became the bed of the deep and mighty sea, in which the New Red Sandstone was deposited. For how long it formed the floor of this second ocean we cannot tell; but at length it was destined to a resurrection; by mighty subterranean agency it was heaved out of the bosom of the vast abyss, and elevated above the waters to the position which it has ever since retained.

This is the last grand event in the geological history of this neighbourhood; and though these changes are few in com-

parison with the aggregate amount of those which have taken place within the narrow limits, even of our own island, this immediate vicinity has furnished us with proofs, 1st, that a mighty ocean once rolled its briny billows over the spot on which we stand; 2ndly, that part of this ocean bed became elevated above the level of its waters, so as to form dry land; 3rdly, that this land was intersected by estuaries, or immense inland seas, in which the coal was deposited, and that during this epoch many changes, extremely slow and gradual, took place in the relative level of these lakes and lands; 4thly, that these lands were again submerged, and another ocean swept over the district; and 5thly, that our present land was ultimately re-elevated from the depths of this second ocean, whose existence has been indubitably pointed out by the fact, that while the coal fossils are all of terrestrial or freshwater origin, those of the New Red Sandstone immediately above it are exclusively marine.

Can we then believe that changes such as these have all taken place within a few thousand years? We have seen that they were the consequence of slow and long-continued action. How slow and how long continued, no terrestrial intelligence can say; and in all probability human language could not express, even if human imaginations could conceive, the mighty period that has elapsed during their accomplishment.

The historian, as he pores over the musty manuscripts, the half-effaced and barely-intelligible documents, which record the various incidents and changes that have taken place among his own species within the last few thousand years, has an enjoyment peculiarly his own. The antiquary, as he gazes on the ruined monuments and temples which mark the site of once flourishing but now desolated cities, and endeavours to decipher the hieroglyphic characters that commemorate particular events, while he cannot fail to breathe a sigh over the vanished glories of a Thebes, a

Memphis, or a Carthage, yet, in imagination, rebuilds their prostrate edifices, clothes them with their former grandeur, and having summoned from the silent tomb the mouldering bodies of the mighty dead, peoples them with the sages, conquerors, and heroes, whose glowing thoughts once found an echo in hosts of noble breasts; and re-enacts the spirit-stirring scenes, which shed a halo round those cities' names, when they themselves are crumbling in the dust; and as he does all this, his heart beats high within him, and he expe-riences emotions of pure delight, in which it may be truly said, " a stranger intermeddleth not."

But if this be true of the historian and the antiquary, who investigate only the works of man, how much more so is it of the geologist! What are *his* emotions as he reads the lithographic history of his planet, written by its own Creator, in the hills and dales, the rocks and stones around him! What the pleasure which *he* enjoys in looking backward to the youthful days of hoary-headed Time, tear-ing away the gloomy shroud in which the past had been enveloped, observing for himself the mighty changes, phy-sical and organic, which have taken place upon the globe, and tracing link by link, through every phase and aspect, the succession of animated life, from the first dawn of its existence to the present time!

Yet some there are who would deprive him of this ex-alted pleasure, and rob him of his ennobling study, by repre-senting Geology as an avenue which inevitably leads to loose theological views, if not to atheism. Surely no terms of censure are too strong to apply to representations such as these! If the deductions of Geology be erroneous, or its premises unsound, let it be proved; but if not, if Geo-logy be built on the granite rock of truth, then let those who will not investigate, in common fairness no longer impugn.

Supposing, however, that geological investigations may, to a certain extent, have led some persons to entertain loose

theological opinions, with whom does the responsibility rest? The onus lies, I humbly apprehend, not upon Geology, but upon those interpreters of Revelation who refuse to give up their previously conceived opinions, when the clearest possible evidences of their erroneousness have been adduced. The charge, however, of favouring Atheism is simply absurd, and has had its birth in either ignorance or fatuity. Atheism! Why, with as much propriety might we bring this charge against Astronomy,—because that science has revealed to us unnumbered myriads of planets, of whose existence we had previously no conception,—as against Geology, because it has disclosed to us unnumbered ages in the history of our own!

It has been already shown, that the successive races of beings, whose remains are entombed in the strata of the globe, necessarily imply so many successive efforts of creative power. Instead, therefore, of Geology leading to Atheism, whose only god is chance, it plainly shows that the Supreme Governor of the Universe, whose fiat, "Let there be!" brought the present races into existence, not only *now* exists, but *has* existed, and manifested the same creative energy for myriads of ages previously. While, therefore, Geology proves the Creator's present existence, it proves yet more, that Wisdom, Beneficence, Eternity of existence, and Uniformity of design and operation, are equally among the most striking of the Divine attributes.

What is man, the present haughty monarch of sublunary creation, that he should dare to deny that millions of innocent and happy beings have tenanted our earth before his reign commenced? Why should he, inflated with a sense of his own importance, presume to think that *his* existence was necessarily coeval with the first exercise of Creative energy? Neither reason nor revelation explain why this should have been the case, nor why the deductions of geologists are necessarily unsound.

The unwillingness of many to believe the plain indica-

tions of Geology seems to me to arise from the fact that man too often forgets the ephemeral nature of his own terrestrial being. He crawls on rapidly, though imperceptibly, from helpless infancy to imbecile old age, and then blighted and withered by a thousand infirmities, like some frail flower is suddenly cut down; and yet, notwithstanding all this, presumes to judge of time by the fleeting standard of his own chequered existence! Let him soar as far as the wings of imagination can carry him, through the dusky vista of the past, and what has he then accomplished? He has scarcely reached the margin of the unfathomable ocean of eternity that lies beyond him. Let him in like manner penetrate, to the utmost stretch of his mortal ken, the dim and shadowy future! And what then? He can scarcely comprehend a fraction of the immeasurable eternity before him. But it is an exhilirating thought that, though the past may possibly be for ever hidden from his view, yet the eternal future will all be laid before him; and it is a comfortable reflection that that great Being, whose ways Geology shows to have been uniform for a period which to us at all events looks like eternity, is *the* Being on whose promises all our hopes of a blissful future depend. Surely, then, if this science has done nothing else,—in showing us that His ways through an infinite past, have been in reference to the physical world, "without variableness or shadow of turning,"—it affords an additional reason, if that were wanting, for the belief that His Word *will* for ever stand fast, in reference to what remains in store for that *moral* world, to which he has temporarily committed the occupancy of the former.

13*th May*, 1843.

LECTURE II.

ON VOLCANOES.

It is no less true of Geology than of most of the other sciences, that there are ranged underneath its banners two classes of advocates, who are both to a greater or less extent instrumental in its advancement. The first, and infinitely the more important of these, comprehends the original thinkers among geologists, those who—concentrating, as it were, all the energies of their naturally vigorous minds into one focus—dedicate their powerful intellects to the service of the cause, and by patiently investigating and classifying facts on their own parts, or by deducing general principles from the discoveries of other and, perhaps, isolated observers, clear away difficulties where these exist, and trace out the often intricate causes of the varied and complicated phenomena presented to their view. These are the master spirits of Geology, the original interpreters of the early history of our planet, written in nature's own lithography, they whose laborious researches, well-nigh accomplishing in reality the classic fable of Deucalion and Pyrrha, have found the shapeless rocks beneath their feet, if not actually transformed into human beings, yet teeming with the wondrous forms of organised existence that dwelt upon

the surface of the globe ere man's brief day commenced. The second class, however, includes a different description of individuals; these,—though charmed not less than the former, with the varied pleasures which Geology unfolds to view, and following as equally willing votaries in her train,—yet occupy but a subordinate and inferior position, whose humbler office it is to retail (as it were) the discoveries of others, and lacking, as they do, ability or opportunity, or both, to advance the boundaries of the science by *original* facts or ideas, rejoice in being privileged to shed even a borrowed and reflected light, or in being the humble means of exciting others to tread in those flowery paths, in which they themselves have wandered with so much delight.

To the latter of these classes, the writer of this paper is proud if he may be considered to belong; and he deems it due, no less to himself than to those whom he has the honour of addressing, to premise thus much, lest from the position which he occupies this evening it might be expected that he had something novel or original to communicate. This is not the case. All that will be attempted in the following remarks will be—first, a brief summary of the principal phenomena exhibited by volcanoes in a state of activity, and secondly, a cursory examination of the principal hypotheses (for at present all is hypothesis at best) which have been offered in explanation of these phenomena. And in bringing before you so imperfect a production as the present (a paper which will appear to many, as the ways of the world did to Hamlet, "stale, flat, and unprofitable"), the writer is consoled by the recollection that papers of this description are not expected to be perfect essays, but are merely intended to introduce the subject to be examined in the subsequent discussion. Without, then, further preface, let us proceed at once to the subject which is to engage our consideration this evening,—a subject which to any intelligent mind cannot fail to be one of the deepest interest;—for though it has pleased Providence to cast our favoured lot in

a land where the volcanic agents have been long slumbering in repose, yet it is one of the privileges which man possesses above all his cotemporaries that swarm upon this earthly globe (though, as far as body is concerned, "chained to one spot like a point in vast space") to be able, by the superior intelligence with which he is invested, to overleap the narrow confines of his own habitation, and know something of the phenomena presented to the view in every habitable region of the globe. Though, therefore, in this little ocean gem, this insulated sea-girt spot, which we denominate our home, volcanic convulsions are happily unknown, yet we can, in imagination at least, soon visit the regions where the volcano exists in all its wild sublimity, rolling its fiery billows in torrents o'er the land, overwhelming the fairest cities, yawning with hideous and fearful chasms, and shaking the foundations of the solid earth (which here we deem the very emblem of stability) until it totters, heaves and throes, as though its final dissolution were at hand. To the geologist, indeed, the volcano is a subject of peculiar interest and importance; for though some may associate with the word no other idea than that of a burning mountain in a distant land; the geologist recognises in the volcano a mighty agent, which, at various periods in the past history of our earth, has been extensively employed in modifying and altering the physical geography of the globe, at one time (as we shall soon see) forming islands in the bosom of the mighty deep, thus partly compensating for the constant loss of land caused by the abrading influence of water—at another, exerting its gigantic power in twisting and breaking up the solid strata of the earth—and, in the hands of a beneficent Creator, robbed of all its terrors, and becoming an instrument of incalculable service to His puny creature man, by raising to the surface of the ground those vast treasures of mineral and fuel which, by the wise provision of our Maker, had been gathered into subterranean storehouses long ere man had sprung into existence; and which, but for

volcanic, or some similar agency, might still have remained slumbering beneath the ocean bed, and inaccessible to all.

The first mention (I believe) which we have of the term "volcano," is by the Roman poet, Virgil, in the well-known line, descriptive of the Island of Volcano, and bearing reference to the classical notion, that this was the home of Vulcan:—

"Vulcani domus et Vulcania nomine tellus."

Since then, however, by common consent, the term "Vulcania," or adopted in the English language, "Volcano," has been applied to all those igneous mountains (as Phillips elegantly calls them), in various quarters of the globe, from which are poured at irregular intervals, volumes of smoke, cinders, stones, and streams of fused earthy matter, called "Lava." In noticing these mountains or Volcanoes this evening, I purpose adopting the division usually made by writers on this subject into two classes; first, those whose eruptions have been recent, denominated "Active;" and, secondly, those of which only traces remain, called "Extinct." This distinction is, however, merely of a temporary character, and can only be applied to their present actual condition, since those most frequently in a state of action in modern times have in many cases formerly lain dormant for a succession of centuries; (we know, for instance, on the authority of Mr. Lyell, "that in Ischia, there intervened between two consecutive eruptions, a pause of seventeen centuries, and a much longer period, perhaps, elapsed between the eruptions of Vesuvius before the earliest Greek colonists settled in Campania, and the renewal of its activity in the reign of Titus. It will be necessary, therefore, to wait at least six times as many centuries as have elapsed since the discovery of America before any one of the dormant craters of the Andes can be presumed to be entirely spent."—Vol. ii, p. 42). On the other hand, we can form no conjecture how long those now in a state of repose may remain so.

Still, as this distinction does at present exist, it will be convenient to adopt it in this paper, as well as a further subdivision of the active volcanoes, into sub-aerial and submarine; the sub-aerial occurring on the land, the sub-marine in the depths of the sea. We commence, then, with the sub-aerial volcanoes, the eruptions of which, wherever they occur, generally present the same or similar phenomena, though their intensity may vary. Earthquakes are in most cases premonitory symptoms. "Loud rumbling sounds are heard; the air has a mournful stillness, as though conscious of the coming darkness, the electric fluid bursts in broad flashes o'er the smoking summit of the mountain, and nature herself seems dressed in mourning habiliments." "An increase of smoke is then seen from the summit, sometimes rising in a branching form to a vast height. Tremendous explosions, like successive rounds of artillery, accompany the increase of smoke, and are followed by copious jets of red coloured flames, and showers of stones. At length the lava forces its way out, either by boiling over the summit of the crater, or bursting through the sides of the mountain, and covers the neighbouring plains with melted matter, which, becoming consolidated, forms a stony mass, in some cases not less than some hundred square miles in extent, and several yards in thickness. Nor is this awful ebullition limited to the duration of a day or a week; it has been known to continue with only partial intermissions, for several months. After the stream of lava ceases to flow; intensely black clouds, consisting of dark coloured sand or powder are emitted from the crater, and occasionally involve the surrounding country at noonday, in darkness deep as midnight. The first symptom of the cessation of volcanic action consists in the change of colour in these clouds from black to white, though while presenting this new appearance, they still continue to scatter down showers of sand, which are found to be principally pumice-stone in very fine powder."

The materials ejected from volcanoes principally issue either as molten rocks (lava), or are driven up in the shape of dust and ashes (scoriæ), or burst forth as gas and steam. "The lava lifted by great mechanical pressure from some depth in the earth, rises in the tubular passage of the mountains towards its summit; and if the sides of the cone are strong enough to resist the accumulating pressure, it may even overflow the top, as has happened in the peak of Teneriffe, to the very summit of which Humboldt traced a stream of vitreous lava. But generally the slowness with which an eruption proceeds is such as to allow of the lava making for itself lateral passages to the surface, on the flanks of the mountain, through fissures which yield to the pressure of the column above, or are opened by earthquakes. Such lateral eruptions have raised many minor cones on the slopes of Etna, and round the base of Vesuvius."—(Phillips, Vol. ii, p. 176).

"Lava," according to Dr. Daubeny, "when observed as near as possible to the point where it issues, is for the most part, a semi-fluid mass, of the consistence of honey, but sometimes so liquid as to penetrate the fibre of wood. It soon cools externally, and therefore exhibits a rough, unequal surface; but, as it is a bad conductor of heat, the internal mass remains liquid long after the portion exposed to the air has become solidified. That of 1822, some days after it had been emitted, raised the thermometer from 59° to 95°, at a distance of twelve feet, three feet off, the heat greatly exceeded that of boiling water. The temperature at which it continues fluid is considerable enough to melt glass and silver, and has been found to render a mass of lead fluid in four minutes, when the same mass placed on red-hot iron, required double that time to enter into fusion. Even stones are said to have melted when thrown into the lava of Etna or Vesuvius. On the other hand, the temperature in some cases does not appear to have been sufficient to fuse copper; for when bell metal was sub-

mitted to the action of the lava of 1794, the zinc was separated but the copper remained unaffected."—(Daubeny, p. 381).

"The volume of melted rocks poured forth in a single short eruption of Vesuvius is considerable ; far greater during some of the long continued periods of activity of the Icelandic volcanoes ; enormous if we contemplate the united effect of a whole chain of volcanoes like those of South America. Etna, which rises above 10,000 feet in height, and embraces a circumference of 180 miles, Dr. Daubeny assures us, is composed entirely of lavas, which appear to have been emitted above the surface of the water, and not under pressure. In the structure of this mountain everything bears alike the character of vastness. The products of Vesuvius may be said to sink into insignificance, when compared with these "*coulées*," some of which are four or five miles in thickness ; and the change made on the coast by them is so considerable, that the natural boundaries between the sea and land seem almost to depend upon the movements of the volcano."—Phillips, p. 176.

The quantity of lava emitted on some occasions would appear almost incredible, were the accounts given incapable of being supported by actual measurement. In 1660, Kercher after accurately examining Mount Etna and the ground adjoining its base, calculated that the whole matter then thrown out by it at its various active periods would form a mass twenty times as large as the mountain itself, a calculation which was strongly corroborated a few years afterwards, when a fresh eruption covered with a new layer of lava an extent of eighty-four square miles. In 1775, according to an eye-witness, a current of lava issued from the same mountain 200 feet in height, one mile and a half in breadth, and twelve miles in length. The proof of these statements, moreover, does not rest on the conjectures of agitated and distant speculators, as the lava itself becomes on hardening, a voucher for the truth.

But besides the currents of lava which are found in a liquid state from volcanic mountains, owing, as Dr. Daubeny imagines, chiefly "to the extrication of vast volumes of aqueous vapour," a considerable portion of the liquid column within the fiery funnel of the crater, becomes exploded and dissipated into scoriæ and ashes. These are shot upwards from the mouth of the volcano, and fall in showers around; and it is worthy of remark, that they are of the same mineral composition as the solidified parts of the lava, they mostly rest in the slopes, and augment by external layers of growth the diameter of the volcanic mound. "It is probable that in this way very much larger accumulations, happen on and around Vesuvius, Etna, and some other volcanoes, than those which are produced by flowing lava. The ashes, however, instead of falling around the cone, are sometimes carried for great distances by the winds, and owing to the commotions of the atmosphere during the paroxysms of the earth, rains often descend and sweep away the falling ashes in rivers of mud, which flow according to the slopes of the ground, covering up cities and filling up lakes and valleys. To this cause a part of the accumulation covering Herculaneum has been ascribed, while Pompeii was overwhelmed in dry ashes."—Phillips, p. 178. Nor is the distance to which these scoriæ and stones are carried less astonishing than their quantity. "During the eruption of Vesuvius, in 472–3, the ashes thrown out were transported by the winds even to Africa, Syria, and Egypt, and fell in Constantinople. In 1631 ships were covered with ashes sixty miles from Vesuvius; in 1812, the eruption of the Souffrier mountain, in St. Vincent's, gave forth ashes, which were carried by the winds to Barbadoes. And during the terrific eruption of Tomboro, in Sumbawa, in 1815, clouds of ashes obscured the sun, and fell inches deep on the streets and houses of Java, at a distance of 300 miles."—Phillips, p. 200.

The intensity of the volcanic forces cannot, I think, be

better appreciated than by the consideration of such facts as these.

The third and last class of volcanic products which usually come to the surface, "are the gaseous and vaporous substances, to which much of the grandeur of the exhibition, as well as much of its general power and energy is owing.

The most abundant of these is steam, which rises in white clouds over the craters of active, and from rents in extinct volcanoes.

The most abundant of the gases are muriatic acid, sulphuretted hydrogen, sulphurous acid, carbonic acid, and nitrogen. Sublimations of particular solids occur, as boracic acid in the crater of volcano, muriate of ammonia, muriate of soda, and specular iron ore.

The boracic acid cannot be sublimed by the heat of our furnaces, but Dr. Daubeny has shown by experiment, that when heated and traversed by steam, a portion is taken up and carried with the steam."—Phillips, p. 181.

But besides these three forms which volcanic ejections universally assume, there is a fourth which is sometimes met with, and which is well worthy of notice, because it bears intimately upon one of the hypotheses, which will shortly be given in explanation of volcanic phenomena. I allude to hot water, often boiling, and so charged with earthy matter as to form a stream of mud. This pouring forth of boiling water from the sides of the mountain, is one of the singularities in the eruptions of Vesuvius; in some cases, however, this is the principal feature exhibited, and these mountains have, by way of distinction, been termed "Mud Volcanoes." One of the most remarkable of this class of Volcanoes hitherto described is that of Macalouba, in Sicily. It consists of a hillock of hardened mud, 150 feet high, and more than half a mile in circumference. Rising from it are numerous small cones, about three feet in height, each of which has a crater filled with

liquid mud, constantly agitated by air bubbles passing through it. Portions of the mud are continually thrown out, and thus add layer after layer to the bulk and height of the cones. In South America, however, mud volcanoes are far more frequently met with than in any other region. In the year 1698 the mountain of Carguarazo fell down, and covered twenty-four square miles with liquid mud. In this case the hill seems to have been actually dissolved by its own internal waters, and immense quantities of small fish, known by the name of "prenadillas," (which must have swarmed in its subterranean lakes,) were enveloped in its muddy ejections. In Peru and Quito also (countries of such unhappy celebrity in this respect,) the mischief occasioned by volcanoes is not caused by lava, but by enormous streams of mud, in which the prenadillas are so abundant, that their putrefaction has caused disease in the country.

From this cursory view of volcanic eruptions generally, we have seen that they usually emit rivers of lava, clouds of scoriæ, considerable quantities of steam and other gases, and often heated streams of mud. Perhaps then it may be well, before advancing further, to illustrate these general observations by reference to one or two particular and carefully recorded instances; and as active sub-aërial volcanoes may be conveniently arranged in two classes, 1stly, those in permanent eruption, and, 2ndly, those which have only exhibited (what may be called) paroxysmal violence, we may take one or two examples of each of these.

"It is said that there are not more than three volcanoes which are in a state of permanent activity; that of Stromboli, one of the Lipari Isles; the Devil's Mouth, in the Lake of Nicaragua; and that in the Isle of Bourbon. Stromboli has been in a state of constant activity for more than 2000 years, and is a good type of this class. Lava seldom overflows its crater, but large masses of burning rocks and scoriæ are incessantly ejected perpendicularly. This phenomenon, accompanied by a loud explosion, occurs

every seven or eight minutes, of which fact we are informed by Pliny, as well as modern travellers. Dolomien examined this interesting mountain, and has given the following description of its eruptions.

"The inflamed crater is on the western side of the mountain. I saw it dart, during the night at regular intervals of seven or eight minutes, ignited stones which rose to the height of more than 100 feet, forming rays a little divergent, but of which the greater quantity fell back into the crater, while others rolled even to the sea. The approach of an eruption is not announced by any noise or dull murmur in the mountain, and it is always with surprise that one sees the stones dashed into the air."

"In the island of Volcano there is a crater which at some former period must have been active, and still emits gaseous vapours, which prove the continued existence of the volcanic cause. The operations of this volcano, says Dr. Daubeny, exhibit perhaps the nearest approximation to a state of activity, during which a descent into the crater would have been practicable. Nor can I imagine a spectacle of more solemn grandeur than that presented in its interior, or conceive a spot better calculated to excite in a superstitious age that religious awe which caused the island to be considered sacred to Vulcan, and the various caverns below as the peculiar residence of the gods."—Higgins, p. 366.

But to proceed; the other class of active sub-aerial volcanoes—those in a state of partial repose and paroxysmal activity, is so extensive, that the difficulty is not in finding a characteristic type, but in selecting from the many well authenticated and interesting examples which might have been adduced. Perhaps, however, Vesuvius is one of the most interesting of these, as well as that with which in this country, we are best acquainted. In the records of history we can find no allusions to Vesuvius as a volcanic mountain prior to the Christian era. "From the first colonization of Southern Italy by the Greeks, it afforded no other indica-

tions of its volcanic character than such as the naturalist might infer from the analogy of its structure to that of other volcanoes. These were recognized by Strabo, but Pliny did not include the mountain in his list of active vents."

"On the exterior, its flanks were clothed with fertile fields richly cultivated, and at its base were the populous cities of Herculaneum and Pompeii. But the scene of repose was at length doomed to cease, and the volcanic fire was recalled to the main channel, which at some former unknown period had given passage to repeated streams of lava, sand, and scoriæ. The first symptom of revival of its energies, was the occurrence of an earthquake in the year 69 after Christ, which did considerable injury to the cities in its vicinity. From that time to the year 79, slight shocks were frequent, and in August of that year they became more numerous and violent, till they ended at length in an eruption. The elder Pliny, who commanded the Roman fleet, was then stationed at Misenum; and in his anxiety to obtain a near view of the phenomena, lost his life, being suffocated by sulphurous vapours. His nephew, the younger Pliny, remained at Misenum, and has given us in his letters a lively description of the awful scene. A dense column of vapour was first seen rising vertically from Vesuvius, and then spreading out laterally, so that its upper portion resembled the head, and its lower the trunk of the pine which characterizes the Italian landscape. This black cloud was pierced occasionally by flashes of fire as vivid as lightning, succeeded by darkness more profound than night. Ashes fell even upon the ships at Misenum, and caused a shoal in one part of the sea,—the ground rocked and the sea receded from the shore, so that many marine animals were found on the dry sand."—Lyell, p. 67.

This, as most are aware, was the famous eruption which overwhelmed the cities of Herculaneum and Pompeii, *not with lava* (for there is no evidence of any lava having flowed during the eruption), but with showers of dust and ashes,

which, mingling with the heavy rains caused by the condensation in the cold atmosphere of the immense volumes of aqueous vapour emitted from the mountain, and perhaps with those torrents of boiling water which have been observed to flow from the wounded side of Vesuvius, as it groans and trembles during an eruption, formed a muddy deluge of sufficient magnitude to destroy those once flourishing and populous cities. From Mr. Lyell's interesting account given after a personal examination of the spot, the following description of the discovery of these cities may be quoted. "The tuff which envelops the buildings consists of comminuted volcanic ashes mixed with pumice. It is porous, and when first excavated, soft and easily worked, but hardens on exposure to the air. Above this lowest stratum is placed the matter of six eruptions, each separated from the other by veins of good soil, thus showing that a considerable period must have intervened between the several eruptions. Herculaneum, though, from its being nearer to the mountain than Pompeii, was much more deeply buried, and was discovered before Pompeii, from the accidental circumstance of a well being sunk in 1713, which came down upon the theatre, where the statues of Hercules and Cleopatra were found. The walls of Pompeii were three miles in circumference, but we have no certain knowledge of the dimensions of Herculaneum. In the latter place the theatre alone is open for inspection, the Forum, the Temple of Jupiter, and other buildings, having been filled with rubbish as the excavation proceeded. Both at Herculaneum and Pompeii temples have been found, with inscriptions commemorating the rebuilding of the edifices, after they had been thrown down by an earthquake in the reign of Nero, sixteen years before the cities were overwhelmed. In Pompeii, one-fourth of which is now laid open to the day, both the public and private buildings bear testimony to the catastrophe. The walls are rent, and traversed by fissures, in many places still open; columns are lying on the ground

only half hewn from vast blocks of travertine, and the temple for which they were designed is seen half repaired. In some places the pavement had sunk in, though in general it was undisturbed, and in it were ruts worn by carriage-wheels, an inch and a half in depth. Very few skeletons were discovered in either city, so that it is clear that most of the inhabitants had time to escape. In the barracks at Pompeii were skeletons of two soldiers chained to the stocks, and in the vaults of a country house, were the skeletons of seventeen persons who appear to have fled there, to escape the dreadful shower of ashes. They were found inclosed in indurated tuff, and in this matrix was preserved a perfect cast of a woman, perhaps the mistress of the house, with an infant in her arms; and though her form was imprinted on the rock, nothing but the bones remained. To these a chain of gold was suspended, and on the fingers of the skeleton were rings with jewels. The writings scribbled by the soldiers on the walls of their barracks, and the owners of each house written over the doors are still perfectly legible. In the room of a painter, who was perhaps a naturalist, a large collection of Mediterranean shells was found, in as good a state of preservation as if they had remained in a museum. Fishing-nets are very abundant in both cities (which were sea-ports), and often quite entire. Linen also has been found at Herculaneum, with the texture well defined; and in a fruiterer's shop in that city, were discovered, vessels full of almonds, chestnuts and walnuts, all distinctly recognizable. A loaf, also, still retaining its form, was found in a baker's shop, with his name stamped upon it, and on the counter of an apothecary was a box of pills, (I wish we knew their composition) converted into a fine earthy substance, and by the side of it a small cylindrical roll, evidently prepared to be cut into pills. In 1827 moist olives were found in a square glass case, and "caviare," or roe of a fish, in wonderful preservation. These curious condiments are still preserved hermetically sealed in the Museum of Naples. Many bun-

dles of papyri were also found, with tickets attached to each, on which the title of the work was inscribed. Most of them are written in Greek, but there are a few in Latin; and of four hundred of those least injured, the subjects are chiefly music, rhetoric, and cookery.

Besides the cities already mentioned, Stabiæ, a small town about six miles from Vesuvius, was also overwhelmed during the eruption of 79. Here a few skeletons have been found, and some rolls of papyri, which were illegible.

The great eruption of 79 was followed by six others at long intervals, averaging 164 years each, till 1036, when, for the first time, the flowing of lava is mentioned; the previous eruptions being only of ashes and lapilli. The next eruption of importance was in 1306, between which era and 1631 there was only one other, and that a slight one. "It has been remarked that throughout this period Etna was in a state of such unusual activity, as to countenance the idea that the great Sicilian volcano may sometimes serve as a channel of discharge for elastic fluids and lava, which would otherwise rise to the vents in Campania."

During this pause, however, an interesting phenomenon was exhibited by the birth in the Phlegrean fields of a new volcanic mountain, called Monte Nuovo, in 1538, 440 feet in height, with a base one and a half miles nearly in circumference. This clearly shows that the volcanic forces were not extinct, but merely for a season operating in another direction.

"For nearly a century after the birth of Monte Nuovo, Vesuvius continued in a state of tranquillity; there had been no violent eruption for 492 years, and when visited by Bracini in 1631, the crater was found to be five miles in circumference, and about a thousand paces deep; its sides were covered with brushwood, and at the bottom there was a plain on which cattle grazed. In the woody parts wild boars frequently harboured. In one part of the plain, covered with ashes, were three small pools, one filled with

hot and bitter water, one more salt than the sea, and the third hot, but tasteless. But, at length, these forests and grassy plains were consumed, being suddenly blown into the air, and their ashes scattered to the winds. In December, 1631, seven streams of lava poured at once from the crater, and overflowed several villages on the flanks, and at the foot of the mountain. Resina, partly built over the ancient site of Herculaneum, was consumed by the fiery torrent, and great floods of mud were as destructive as the lava itself. A brief period of repose ensued, which lasted until the year 1666, from which time to the present there has been a constant series of eruptions, with rarely an interval of rest exceeding ten years."—Lyell, p. 78, vol. ii.

One of the most interesting of these modern eruptions was that of 1794. The first proof of its approach was a severe earthquake shock during the night of the 12th of June. On the evening of the 15th the earth was again violently agitated. Shortly after this, an opening was formed in the western base of the mountain cone, and a stream of lava was ejected. The mountain during the whole time was violently convulsed, and deep hollow sounds were heard, which, together with the impetuous ejection of the lava, shook it to its very base. When the oscillatory motion of the mountain ceased, the sounds became less frequent, but more distinct; the lava flowed more abundantly, and the action seemed as though it were suffering under the last paroxysm of its dying energies. This was about four o'clock on the morning of the 16th, and at that time the intumescent mass had flowed through all the streets of Torre del Greco, and thence into the sea, covering its bed 362 feet, beyond the margin of the water,—the current having a breadth of 1127 feet.

During the progress of the eruption the summit of Vesuvius was perfectly quiescent; but towards the dawn of day the heights of the mountain were hidden by a dense cloud of comminuted sand, which, spreading itself, in a short time

covered the whole country, and the sun was darkened by an impenetrable mantle of clouds.

"It is impossible," says Mullinger Higgins, "to describe the horrors of that night when Vesuvius poured out its terrible fury on the beautiful valley beneath it. The fiery ejections and inexpressible groanings of the mountain, the death-like stillness of the atmosphere, and the cries of the thousands who had been driven from their homes, together, presented a combination of terrors which no imagination can realize. When the lava ceased to flow, the crater was covered by a dense cloud of comminuted pumice, which enveloped it the four following days, during which time the summit of the mountain fell into the internal cavity. The surrounding country, to a distance of ten or twelve miles, was wrapt in midnight darkness, and thunder-storms were awfully frequent."—Higgins, p. 373.

And now, after these somewhat lengthy remarks on Vesuvius, (which is so good a type of the volcano in the condition of partial repose and paroxysmal energy)—I need not occupy your time by referring to Etna, Hecla, Tomboro, or any others of the same class, but would pass on from this examination of active sub-aerial volcanoes, to those occurring in the depths of the sea, and called, by way of distinction, "sub-aqueous," or "sub-marine."

We have not many authentic records of submarine eruptions; indeed, when we recollect that these, if, of considerable violence, elevate the volcanic cones above the water, then become of the former class, the sub-aerial volcanoes, we shall not be surprised, though we have every reason to believe that the eruptions from sub-aqueous craters, are quite as numerous as from those upon the land. "There is, however, less probability of their being observed. It is a singular fact, that we are acquainted with scarcely an instance of sub-aqueous eruption that has not produced an island; and yet it may be reasonably supposed that many do occur which have not sufficient energy

to elevate the mineral masses above the level of the sea. This may be accounted for in two ways; either so great a depth of water may be super-imposed on the volcanic vent, as to prevent the eruption producing any effect upon the surface, or the energy exerted may be sufficient to occasion many phenomena on the surface of the water, while no observer is present; so that in this instance, as well as the former, we are prevented from gaining any information concerning the appearances exhibited."—Higgins, 381.

We know, however, that many islands owe their elevation from the depths of the ocean to the action of subaqueous fires. The whole of Iceland is an island of this description. It appears to be situated over an immense volcano, which ejects through numerous apertures, ashes, lava, and other substances; and the fact of the eruptions having found vent in various places would lead us to imagine that the distance cannot be great between the surface of the land and the internal fire itself; the hot-springs also, for which Iceland is so famous, are supposed to owe their temperature to the same source. The most remarkable of these springs, called the Geyser, is in the middle of a plain surrounded by about forty smaller ones. Steam, accompanied by a noise somewhat like that of distant thunder, is constantly rushing forth furiously from its orifice, and an immense volume of hot water is continually spouting forth into the air, to the height of 70, 80, and even 90 feet. The Icelanders use the more temperate of these springs as warm baths, while those, whose heat is sufficiently great, constitute an economical cooking apparatus, in which they prepare their food, only taking the precaution to close their vessels, to prevent the food from becoming spiced by the sulphurous flavour of the waters. In addition to these hot-springs there are in Iceland, at least three volcanoes, which have been repeatedly in action. One of these, Mount Hecla, has had twenty-two eruptions since the year 1004; the second seven, since 900; and the third four, within the last 125 years.

"In January, 1783, on the shores of Iceland, columns of flame and smoke shot through the waters; several islands were temporarily raised from beneath, and reefs of rock still exist, where these appearances occurred. The flames," says Sir G. Mc Kenzie, "lasted several months, during which period vast quantities of pumice and light slags, were washed ashore. In the beginning of June, earthquakes shook the whole of Iceland; the flames in the sea disappeared, and a dreadful eruption took place, from Skoptar Jokul (one of the three volcanoes), which is nearly two hundred miles from the spot where the marine eruption was perceived. Several instances of similar submarine volcanoes have been recorded within the last ten years, occurring for the most part either near islands of a volcanic character or continental coasts, liable to the same influence. In 1811 a volcano forced its way through the sea, off the coast of the Azores. The appearances were exceedingly beautiful; columns of the blackest cinders shooting up to the height of between 700 and 800 feet, above the surface of the water. The basis of the columns were enveloped in clouds of smoke, revolving almost horizontally on the sea; and, during nearly a month that these phenomena were visible, loud explosions were heard resembling the rattle of cannon and musketry. The formation of an island, about a mile in circumference, and 300 feet in height, was the result; and in the centre of the island, on which several gentlemen landed, was a large crater full of hot water. The island has since disappeared."

But perhaps the most interesting example of sub-aqueous eruption yet recorded, and the only other which I shall here notice is that which in the year 1831, gave birth to an island in the Mediterranean, between the south-west shores of Sicily and that part of the African coast where ancient Carthage stood. This island, though only visible for about three months, rejoiced in no less than seven names, viz., Nerita, Ferdinanda, Hotham, Corrao, Sciacea, Julia, and Graham, an instance of as wanton a multiplication of

synonymes as can be met with even in the annals of palæontology or botany. "On the 28th June, about a fortnight before the eruption was visible, Sir Pultney Malcolm, in passing over the spot in his ship, felt the shocks of an earthquake, as if he had struck on a sand bank, and the same shocks were felt on the west coast of Sicily. About the 10th of July, John Corrao, the captain of a Sicilian vessel, saw as he passed near the place a column of water like a water-spout, 60 feet high and 800 yards in circumference, rising from the sea, and soon afterwards a dense steam in its place, which ascended to the height of 1800 feet. The same Corrao, on his return from Girgenti on the 18th of July, found a small island 12 feet high, with a crater in its centre, ejecting volcanic matter and immense columns of vapour; the sea around, being covered with floating cinders and dead fish.

"The scoriæ were of a chocolate colour, and the water which boiled in the circular basin was of a dingy red. The eruption continued with great violence to the end of the same month, when the island (which is generally termed 'Graham Island'), was from 50 to 90 feet in height, and three-quarters of a mile in circumference. By the 4th of August, it is said to have increased to the height of 200 feet, and was three miles in circumference. But from this time the island decreased in size, for, being composed of loose scoriæ and pumice, it was rapidly acted upon by the water; it at length gradually disappeared, and in the beginning of the following year 1832, an extensive shoal was found to occupy the place where the island had been, and in 1833 there was a dangerous reef of an oval form three-fifths of a mile in circumference." — Lyell and Higgins.

From the comparatively small number of submarine igneous eruptions which have been observed by human eyes (for none but a mermaid could recall them all), we might, perhaps, be led to underrate the magnitude of the effects

which they have produced; to form, therefore, something like an adequate idea of the very important changes that have taken place upon the surface of our planet, by the action of subaqueous volcanoes, it is only necessary to observe, that the Island of Owhyhee, presenting a surface of 4000 square miles, consists almost entirely of lava and other volcanic matter; and our best geologists ascribe most of the islands of the Pacific, the Canaries, Azores, St. Helena, and Ascension, to volcanic agency.

But before passing from the consideration of active volcanoes, it will be necessary briefly to direct attention to two other phenomena, (already mentioned incidentally,) which are so generally concurrent with volcanic eruptions, and peculiarly prevalent in volcanic districts, as to have been referred justly by most, if not all writers, to volcanic agency. I allude to earthquakes and thermal springs; these, of course, can be only cursorily glanced at here, but perhaps, on some future occasion, I may bring the latter class of phenomena, thermal springs, more fully before your attention. It will be quite unnecessary here to notice at full length the reasons which have induced geologists to attribute these two classes of phenomena to volcanic agency; the general analogy existing between them and volcanic effects, the fact of their being peculiarly prevalent in volcanic countries, and the further fact of earthquakes usually accompanying volcanic eruptions, as well as the frequent flowing during these eruptions of immense torrents of hot water, charged with various earths and gases, being sufficient, without any further considerations, to justify such an opinion. Nor does the fact of thermal springs and earthquakes sometimes occurring in countries where igneous mountains now no longer exist, at all militate against this doctrine. It may be, and most likely really is the fact, that when the volcanic agents are either in but a slight degree of activity, or at a very great depth beneath the surface, they then only produce *upon the surface* the milder pheno-

mena of hot springs. When these agents are still more active, or still nearer to the surface, they may give rise to a grander and more terrific display of their power by shaking the dust of the solid earth, cracking and rending its various strata, but not being sufficiently powerful to force the melted lava to the surface, give rise to the earthquake only, and become, as it were, relieved by giving off their steam and gas through various rents and fissures; while, on the other hand, when sufficiently powerful, the still more grand and awful display of a volcanic eruption takes place. The three are, indeed, modifications of the same effects, and are all referable to the same cause, whatever that cause may be. Indeed we should be prepared to expect that earthquakes, though perhaps most abundant, might not always be most violent where active cones exist, if we only recollect that in such cases, "every crater may act as a safety valve, and thus prevent the destructive effects produced in other countries by the vast expansive force of the confined vapours struggling to escape from their prison."

These phenomena, however, will not be further noticed here; they have merely been mentioned to show that in theorizing on the causes of volcanic action, earthquakes and thermal springs must be explained by one hypothesis, as well as the grander features which characterize eruptions generally. But before proceeding to examine the different theories that have been offered in explanation of volcanic action, we must pause for a few moments briefly to consider the other grand division of volcanoes, those denominated "extinct." Traces of these are found in every quarter of the globe. In Europe, which of all countries has happily been least subject to the devastating effect of modern volcanoes, numerous vestiges of ancient ones are visible, some of these seem only partially extinguished, and still emit, both smoke and vapour (a noted instance of this class exists near Naples, and, in fact, these are seldom found except in volcanic countries); but volcanic vents, entirely

extinct, abound where no traces of active volcanoes (excepting, perhaps, hot or mineral springs), have been observed since the earliest historical times.

An interesting series of these extinct craters occur at Auvergne in France.

"The most recent of these had certainly no relic of activity at the time that Julius Cæsar invaded Gaul; for although he encamped upon them, he has not in his Commentaries alluded to their volcanic origin. How long before this they ceased to present those phenomena which attend eruption, must be a matter of speculation:" but we know that they have now been dormant at least between two and three thousand years.

Another region of extinct volcanoes, deeply interesting from its associations, is the country round the Dead Sea.

"We learn from the Sacred Writings, that the spot now called the Dead Sea, was once the fertile and well watered plain of Jordan, in which Lot resided when the cites were overthrown. From the character and distribution of the ancient lava, pumice, and other volcanic productions found in this district, we may deduce that the overthrow of the cities and the formation of the sea or lake, were produced by a now extinct volcano, situated to the south-east of the lake. The wells of naphtha and the hills of sulphur, are spoken of by all travellers who have visited this desolate country, and in some places the soil is said to be so impregnated with these imflammable materials that it may easily be set on fire; pumice, obsidian, and ashes are scattered over the face of the country, and craters have been discovered in various parts among rocks of sirsute and porphyry."—Higgins, p. 352.

Dr. Daubeny has given a very interesting account of this district, in his work on Volcanoes, as well as some particulars respecting the origin of the Dead Sea. "I should suppose," he says, "that the same volcano which destroyed the cities of the plain, threw out at the same time a cur-

rent of lava, sufficiently considerable to stop the course of the Jordan, the waters of which, unable to overcome this barrier, accumulated in the plain Siddim until they converted it into the present lake." Let it, however, be fairly understood, that we would not for a moment argue from these volcanic remains, that the destruction of Sodom and Gomorrah was like that of Herculaneum and Pompeii, a mere accidental circumstance; but as it pleased Deity, in the accomplishment of His purposes, to make use of means which, judging from appearances, He employed for that special occasion.

According to Sir H. Davy, even Rome also, "the eternal city, rests upon the craters of extinct volcanoes;" and he imagines that the traditional and fabulous record of the destruction made by the conflagration of Phaëton in the chariot of the sun, and his falling into the river Po, had reference to a tremendous igneous eruption which extended over Italy, and ceased only near the Po, at the foot of the Alps. In my own humble opinion too, the fabulous story of Scylla and Charybdis had its origin in a similar cause. This dangerous rock and whirlpool were situated in the Straits of Sicily, the one off the Italian, the other near to the Sicilian Coast, a part of the world well known to be liable to volcanic eruptions. Scylla was a female, who for some crime had been changed into a monster, and dwelt concealed in an insulated rock, round which the barking of the infernal dogs was constantly heard, alluring mariners to their ruin; Charybdis, on the other hand, was a harlot, who, for having stolen the oxen of Hercules, was transfixed by one of Jupiter's thunderbolts, and driven flaming into the Sicilian Straits, where she became a dangerous whirlpool. The barking of the dogs doubtless alludes to the subaqueous volcanic detonations, and the flaming descent of the lightning struck Charybdis into the Straits to an igneous submarine eruption.

We need not, however, go so far as the Holy Land, or

France, or Italy, for traces of extinct volcanoes; these may be plentifully found in our own country, and even in the environs of our own town. According to geologists generally, all the rocks known as Greenstone, Porphyry, Basalt, and Trap, are of volcanic origin. The hill at Lilleshall, in Shropshire, is a beautiful specimen of the last-mentioned class, and the Wrekin, which, by stupendous subterranean agency, has forced its whale-shaped back through ponderous beds of mountain limestone, now obliquely flanking its side, forming the south-western boundary of the Ketley coal field, is another still more interesting example. We are all acquainted too with the effects of that grand volcanic eruption, which, having raised the splendid escarpment of the Wren's Nest Hill, at Dudley, poured fourth its fiery flood upon the surface; rearing, as a monument of its fury, the beautiful basaltic columns which adorn the hills of Rowley Regis. *When* this took place of course we cannot tell; we know that the volcano was the agent, though its fires were never witnessed by the eyes of man.

In our own Wolverhampton coal field also, we have numerous instances of volcanic ejections having burst through the beds of coal, charring the latter where they came in contact, indurating the shales through which they pass, and as the miner too well knows from experience, causing numerous faults and fissures, which are anything but favourable to the pursuit of his avocation.

And now, having noticed the phenomena presented by active volcanoes, whether sub-aërial or sub-marine, as well as briefly glanced at those traces of extinct volcanic action which exist on all sides round about us, let us next make a cursory examination of the principal hypotheses which have been offered in explanation of these phenomena.

The Roman poets give us abundant information respecting the traditional stories current in their days, in reference to the principal volcanoes with which they were acquainted.

The Lipari, or Æolian Islands, were supposed to contain gigantic caverns, in which Æolus, the king of the winds restrained his struggling and unruly subjects, giving to the sturdy blasts that amount of liberty which alone was consistent with his will; and the earthquakes and subterranean noises heard, were attributed to their frenzied expressions of rage, and mighty efforts to burst the barriers of their gloomy and cavernous prisons. The tradition respecting Etna was, that a giant, of the name of Enceladus, having incurred the displeasure of Jove, was scorched by one of his thunderbolts, and the ponderous mountain hurled upon him by way of punishment. Virgil, in his Third Æneid, tells us further, that, as he writhes in agony, and occasionally changes his position, the whole mountain trembles, and his never-dying flames issue through its various cracks and crevices. The Island of Volcano again (the only other named by Virgil,) was said to be the home of Vulcan, the king of the Cyclops, who, on account of the deformities of his person, was kicked out of heaven, and afterwards in the caverns of this island, superintended the manufacture of the great god's thunderbolts; the deep and sonorous noises that constantly shook its sides, being referred to his hammer and anvil, and the flames which issued from its crater to the fires of his smelting furnaces. Virgil says of it in his Eighth Æneid,

> "'Tis Vulcan's home, Vulcania by name,
> Here fell the ignipotent when down from heaven he came."

Though, however, these laughably-absurd notions have now long been consigned to the "tomb of all the Capulets," the real cause of volcanic action is still a matter of uncertainty and doubt. Werner was about the first of the geologists who ventured to propose a philosophical theory of volcanoes, and he attributed their eruptions to the ignition of beds of coal. But, in the first place, this hypothesis takes it for granted that beds of coal invariably exist in volcanic

districts (an assumption which we know to be contrary to fact); and, secondly, though it offers an explanation of the *immediate*, it throws no light whatever upon the *primary* cause of eruption, since it does not inform us how these coal-beds were likely to become ignited, but pre-supposes the existence of some kind of matter in a state of combustion; and if we take it for granted that igneous matter naturally exists in volcanic regions, there appears to be no necessity for introducing the beds of coal.

This theory, however, as well as several others of the same kind, can now boast of few if any advocates; but there are two others designated respectively, "the central fire," and "the chemical," hypotheses; which, as they are both plausible, if not probable, and are both supported by able and intelligent geologists at the present day, we will in conclusion examine carefully and attentively.

The first of these, the central fire theory, is thus stated by Dr. Buckland in his "Bridgewater Treatise:"—"There is much evidence to render it probable that the entire materials of the globe were in a fluid state, and that the cause of this fluidity was heat. The form of the earth being that of an oblate spheroid, compressed at the poles and enlarged at the equator, is that which a fluid mass would assume from revolution round its axis." "Assuming that the whole materials of the globe may once have been in a fluid, or even a nebular state, from the presence of intense heat, the passage of the first consolidated portions of this fluid, or nebulous matter, to a solid state, may have been produced by the radiation of heat from its surface into space; the gradual abstraction of such heat would allow the particles of matter to approximate and crystallize; and the first result of this crystallization might have been the formation of a shell or crust, composed of oxidated metals and metalloids, constituting various rocks of the granitic series, around an incandescent mass of melted matter, heavier than granite, such

as forms the more weighty substance of basalt and compact lava."—Buckland, p. 46.

Leibnitz, I believe, first promulgated this startling idea very many years ago. He was at that time singular in his opinions, but they have since then made considerable progress, and are now held by many geologists of no mean repute. This theory, as applied to volcanoes, supposes that these were provided by a good and wise Creator to act as safety-valves to the enormous mass of incandescent matter, which, it is assumed, exists at the distance of seventy or eighty miles below the surface of the earth. It is imagined that this immense body of liquid fire is continually boiling and swelling until it reaches a certain point, when a portion of it escapes through these volcanic vents; instead of tearing asunder the solid crust on which we dwell, and with a terrific explosion shattering our globe, and hurling its disjointed fragments into the regions of infinite space. According to this theory, then, the streams of fiery matter that are vomited from the smoking craters of volcanoes are immediately derived from the "fuelled entrails" of the earth.

This doctrine, as might have been expected, has given rise to some strange speculations on other matters than volcanoes. Mr. Loudon, the celebrated horticulturist (for example), has gone so far as to publish some suggestions on the probability of economically heating greenhouses without going to the expense of fuel, by boring sufficiently low to reach the hot water; of the existence of which, at a certain depth, he has little, if any, doubt. Some persons, again, have imagined, that the interior of this fiery cavern may eventually become the place of torment for the lost; and assuredly were its existence proved, such an idea might possess some plausibility. Again, we are informed that our earth is ultimately to become a prey to the ravages of fire; accordingly, some speculative divines (Dr. Duncan, for instance, in his "Sacred Philosophy of the Seasons,") have

thought it possible that the earth carries within her own bosom the elements of dissolution, and that the fiery sea which heaves and swells within her breast, will, at the fiat of Jehovah, burst its prison-house, and roll its flaming billows o'er the world. But leaving all such speculations which, if not presumptuous, are profitless at best, let us return. And the humble individual, who is now addressing you, would scarcely have ventured to doubt the probability of a theory, in whose cause have been enlisted such illustrious names as Humboldt, Davy, and Buckland, had he not the consolation of knowing that there are arrayed on his side of the question the no-less eminent names of Lyell, Gay-Lussac, and Daubeny: the last-mentioned being undoubtedly the best authority on the subject of volcanoes that could by possibility be adduced. With due deference, therefore, to those great names which have been enlisted in support of this hypothesis, as well as to those of my brethren in this society, to whose views I am on this subject opposed; I would proceed respectfully to state these considerations, which (though they may not carry a similar conviction to other minds) have led me to reject a theory that I should otherwise like to see established; for it must be confessed that by this hypothesis the phenomena of thermal springs, volcanic eruptions, earthquakes, and the elevation of submarine lands might all be intelligibly explained.

Let us briefly examine the principal arguments adduced in favour of this theory; and, first, the one hinted at by Dr. Buckland, in the extract just read—viz., that the shape of the earth, that of an oblate spheroid flattened at the poles, is just such as would naturally be assumed by a fluid revolving in space upon its axis. This argument, however, I think destitute of all weight, for it may well be asked, "why the globe should be supposed to have had a pristine shape, different from the present one? why the terrestrial materials, when first called into existence, or assembled together in one space, should have had a form distinct from

that which alone could have retained their several parts in a state of equilibrium?" Instead, indeed, of requiring any stretch of credulity to believe that the Father of the universe, when He called this globe into being, gave it its present shape, and poised it in its present position—the only shape and only position which are suited to its conservation, and the purposes in His economy which it was destined to fulfil—this seems to me to be the only rational belief. Finding our earth now to be an oblate spheroid, and having no *evidence* (however we may choose to speculate) that it ever possessed a different shape, why not believe that it was such when it sprung newly-made from the hands of its Creator, instead of suffering our imaginations to run rampant, and to drag us into the profitless regions of nebulosity and infinite space?

A second argument, in favour of the doctrine of the igneous liquidity of the earth's centre, is derived from the specific gravity of the entire globe. The mean density of the earth has been computed at about five and a-half (*i. e.*, five and a-half times heavier than water), and it is argued by Professor Phillips (on the principle that pressure increases density, and therefore gravity), that, if our earth were solid, its specific gravity should be considerably more than this; but, on the principle, that heat causes refraction, and therefore diminishes gravity, if we admit the interior of the globe to be in a state of fluidity arising from heat we get over the difficulty in reference to specific gravity. "Here, however, a curious question arises in regard to the form which materials, whether fluid or solid, might assume if subjected to the enormous pressure which it must obtain at the earth's centre. Water, if it continued to decrease in volume according to the rate of compressibility deduced from experiment, would have its density doubled at the depth of 93 miles, and be as heavy as mercury, at the depth of 362 miles. Dr. Young computed that, at the earth's centre, steel would be compressed into one-fourth, and stone into

one-eighth, of its bulk. It is more than probable, however, that after a certain degree of condensation, the compressibility of bodies may be governed by laws altogether different from those which we comport to the test of experiment."—Lyell.

But, indeed, what proof have we that the interior of the earth is either solid or fluid? It may, for aught we know, be cavernous, "and some have even endeavoured to confirm this opinion, by appealing to observed irregularities in the vibrations of the pendulum in different countries." This argument, therefore, I respectfully submit, tells neither way.

But a third, and at first sight, a very striking argument, made use of by these fiery theorists is, that as granites have been proved to be of igneous origin, and the primary stratified rocks, the gneiss and mica schist, are of the same materials as granite, crystalline, and, together with the primary clay, slates, &c., non-fossiliferous, so this favours their theory that, when the molten materials of the nascent earth began to cool down, a floor or shell of granite was formed around it; that from the consequent condensation of the igneous vapour which surrounded this errant fluid mass, seas were formed in the hollows; and that from the detritus of the granite mountains (for all the mountains were then supposed to be granitic) the materials of the primary stratified rocks, the gneiss, mica schist, &c., were derived; and all this is supposed to have taken place prior to the introduction upon the globe of any forms of organic existence. This, I believe, is the theory: and certainly the fact of the floor of igneous rocks universally spread underneath the stratified formations, lends countenance to the idea. Mr. Lyell, however, no mean authority, objects to this doctrine in toto; for though he admits the igneous origin of granite, he thinks its formation may be referred to chemical changes, electrical currents, &c., in the crust of the globe, and holds the idea that the granitic floor of the stratified crust of the earth, is nothing else than the fused

and re-consolidated materials of older strata than any which are now visible ; that at this time granite is forming in the same manner by the fusion of the lower parts of the strata; and that as new stratified rocks, the fruit of water, are slowly deposited above, the older ones which they cover are slowly re-absorbed by the antagonist element of inferior heat, and converted to crystallised granite. According to him, therefore, "gneiss and mica schist may be nothing more than micaceous and argillaceous sandstones altered by heat; and certainly in their mode of stratification and lamination they correspond most exactly. Granular quartz may have been derived from siliceous sandstone, compact quartz from the same. Clay slate may be altered shale, and shale appears to be clay which has been subjected to great pressure." Nor is this idea remarkable, as it may seem to some unbacked by evidence. Mr. Lyell adduces numerous instances of stratified fossiliferous rocks having become so altered by volcanic injections as to lose all traces of their former organic remains, to become perfectly crystalline in structure, to contain garnets, analcime, and other products of the same kind, and to resemble in every respect those rocks which had previously been called primary, but for which he suggests the more proper name of "hypogene," or nether-formed. Mr. Fox's experiments, too, in reference to the action of volcanic electricity upon clay, which has proved to become laminated, like the primary clay slates, in the short space of two or three months, appear strongly to favour Mr. Lyell's views. It is impossible, however, to do justice to that gentleman's opinions at the close of a paper like the present; any who are sceptical on the subject will do well to examine the fourth volume of his "Principles of Geology." I must, however, in conclusion, express my opinion, that the advocate of the chemical hypothesis (the next which we have to examine) has as great a right to assume that the earth is a mass of the deoxidized bases of the earths and alkalies, and argue in favour of this idea from

the fact that the whole crust of the globe is a mass of metallic oxides, and that this would necessarily result from the exposure of such a metallic nucleus in a medium like our atmosphere; that, in other words, he has as great a right to assume the truth of the chemical hypothesis from the *composition* of the primary rocks, as the advocate of central fire has to assume the truth of *his* theory on account of their crystalline structure.

The fourth and only remaining argument worth considering, is that derived from the fact that heat in mines is found to increase in proportion as we descend. This fact certainly cannot be denied; but if this increased temperature be the product of so regular a source as an internal heated nucleus, it appears strange that this increase should not follow "the same law over the whole earth, but should be twice or thrice as great in one country as in another, and these differences are not in constant revolution either with the latitudes or longitudes of places." Does not this variation seem to infer that the source of this increase of temperature is itself of a variable character?

"The mean rate of increase in six of the deepest coal mines in Durham and Northumberland, was found to be 1° Fahrenheit for a descent of 44 English feet.

"Observations made in the lead and silver mines of Saxony give 1° Fahrenheit for every 65 feet; and in other mines of the *same country*, it was necessary to descend *three times* as far for each degree of temperature."

According to Cordier (the principal authority on this subject), the heat of the earth's centre would be about 450,000° Fahrenheit, that is, about twenty times the heat of melted iron; but from what we know of the laws which govern the distribution of heat, it appears difficult to conceive how a solid crust could exist at all on such a fluid nucleus. We all know that so long as a fragment of ice remains in contact with water, we cannot raise the temperature of the water above 32°; how, then, on the same principle, could a thin crust with the temperature of the

surface of our earth, exist at all around so heated an incandescent body? Let us suppose a case. "If the whole planet, for example, were composed of water, covered with a spheroidal crust of ice fifty miles thick, and with an interior ocean having a central heat of 6,400° Fahrenheit, or about 200 times that of the melting point of ice, and if between the surface and the centre there was every intermediate degree of temperature, such a state of things surely could not exist a moment. The whole spheroid would be instantly in a state of ebullition, and the ice, instead of being strengthened by new internal layers, would soon melt and form part of an atmosphere of steam."—Lyell, vol. ii, p. 283.

These considerations, therefore, taken chiefly from Mr. Lyell, having led me to reject this theory, are respectfully brought forward for your consideration; and we now proceed in the last place to examine the only remaining theory, generally called "the chemical hypothesis." This was first propounded by Sir H. Davy, and its history is this. In trying to analyze by electricity the alkalies, potash and soda (which had always previously been considered simple substances), that great chemist discovered that they are compound bodies, consisting of oxygen in a state of combination with very curious and hitherto unknown metals; which as they constitute the bases of potash and soda, rceeived the very appropriate names of potassium and sodium. The most remarkable property of these singular metals is that of decomposing water when they come in contact with it, and instantly bursting into flame. On after examination into the composition of volcanic lava, Sir H. found that it contained considerable quantities of alkaline matter; *i.e.*, the very matter in which he had discovered these singularly combustible metals; and it must also be borne in mind that few, if any, active volcanoes have been discovered very far from the sea, and in all cases water exists at no great distance from the sphere of action, as is proved by the fact of some volcanoes emitting water, as well as fiery lava, and thermal springs being generally in their

immediate neighbourhood. Sir H. was therefore led to imagine that "the earth itself might perhaps have been originally a globe of metallic alloy. Now if this had been the primitive condition of our world, the combination of the oxygen of the atmosphere with the metals would have formed a crust of earthy matter, the interior still remaining a deoxidised metallic mass. If water should by penetrating through the crust reach this metallic mass, chemical action would be immediately produced: the oxygen of the water having a great affinity for the metal, would be disengaged from the hydrogen, and a metallic oxide would be formed. This chemical action would cause the disengagement of caloric sufficient to melt the surrounding rocks, while the disengaged hydrogen gas would rend the rocks, and burst into flame upon exposure to the air."

This is certainly the most ingenious theory ever yet offered in explanation of volcanic phenomena: and to show its feasibility I need do no more than give the following account of an artificial volcano constructed by Sir H., for which I am indebted to one of his biographers.

"A mountain had been modelled in clay, and a quantity of the metallic bases introduced into its interior. On water being poured upon it, the metals were soon thrown into violent action, successive explosions followed, and hot lava was seen flowing down its sides from a crater in minature,—mimic lightning played around, and, in the instant of dramatic illusion, the tumultuous applause and continued cheering of the audience might almost have been regarded as the shouts of the alarmed fugitives of Herculaneum and Pompeii."

Still, beautiful and unique as this hypothesis certainly is, Sir H., for some reasons which he has not communicated to the public, in the last elegantly written work that emanated from his pen (Consolations in Travel), expressed his own disbelief in it, and his preference for the "Central Fire" theory. The fatherless hypothesis, however, did not long

remain an orphan; it has been strenuously supported by Gay-Lussac, and has met with an admirable step-father in Dr. Daubeny, who, in his elaborate work on volcanoes, has given "to this speculation a character of greater completeness, by an examination of the actual products of volcanoes."

He remarks that at a depth of three or four miles the nucleus of the earth consists of the metalloid bases of the earths and alkalies, with iron and other metals partially combined with sulphur, the new oxygenation to which under ordinary circumstances they would be subject, may produce no other phenomena than a moderate rise of temperature in the neighbouring rocks or in thermal springs.

But with access of water, and especially sea-water, the effects of the heat generated will become formidable:—oxygenation will take place on an extensive scale; evolution of a large volume of hydrogen, again to combine with oxygen, (supposing atmospheric air to be present,) or with sulphur at a high temperature. In the former case, nitrogen gas will be liberated, which may rise uncombined, or may unite with hydrogen to form ammonia, and this will be neutralized by free muriatic acid and produce sal-ammoniac. The hydrogen not thus disposed of, may combine with sulphur to form sulphuretted hydrogen gas; but this may be again decomposed by rising and uniting with oxygen; as long therefore as oxygen abounds, there will be evolution of sulphurous acid and water; afterwards sulphuretted hydrogen will prevail towards the end of the eruption.—Phillips, vol. ii., p. 213.

Thus, then, we see that this hypothesis readily explains all the chemical phenomena of volcanoes, which (on the authority of Mr. Phillips himself,) the central fire theory, even supposing it to be established, could not do; for, as he very justly observes, it is difficult to explain the chemical phenomena of volcanoes, "except upon the admission of that powerful absorption of oxygen from water, which the chemical hypothesis provides."

To this theory, therefore, I can see no valid objection; at least, as far as the contact of water with the earthy metalloids may be the cause of volcanic eruptions. I do not pledge myself to believe that the earth when created, was a vast ball of these deoxidised substances; for, in the words of Mr. Mullinger Higgins, "with such hypotheses we have nothing to do; they are monuments of folly to the record of great minds, and cannot long exist, as they are without foundation, even to serve as warnings to future adventurous theorists."

Still—that these metals, with silicium, aluminum, and calcium exist in considerable quantities in volcanic districts, either in their simple metallic state, or combined with oxygen in the character of alkalies, is proved by their great abundance in volcanic products; and if their natural condition be compound, it is also evident that electricity is capable of reducing them to their simple state, as was shown by Sir H. in obtaining them artificially by these means; and as electricity is an universal though mysterious agent, producing the most wonderful changes on our globe, it is certainly highly probable that it may be concerned in producing volcanic eruptions. It is indeed proved that electricity is *connected* with volcanoes, by the fact that vivid lightnings are invariably seen, glaring luridly amid the pitchy clouds of smoke that are emitted during an eruption; and since the connexion, if not identity, of electricity with magnetism has been proved, we know that this mysterious agent is diffused through the crust of the globe; and should subterranean currents possess the decomposing power of the voltaic pile, (and there is no reason why they should not,) we have here a never ceasing source of chemical action from which volcanic heat may be derived.

But we have every reason to believe that, besides electricity, there are other sources of chemical action, constantly at work beneath the surface of our globe. We are all aware that "the spontaneous combustion of beds of bitu

minous shale, and of refuse coal thrown out of mines, is generally due to the decomposition of pyrites, and it is the contact of water, not air, which brings about the change. A smouldering heat results from the various new combinations which immediately take place when the sulphur and other substances are set free; and similar effects are often produced in mines where no coaly matter is present, but where substances capable of being decomposed by water are heaped together."—Lyell, vol. ii., p. 287.

"Indeed, (in the words of Lyell,) when we consider the combustible nature of the elements of the earth, so far as they are known to us, the facility with which their compounds may be decomposed, and made to enter into new combinations, the quantity of heat which they evolve during these processes; when we recollect the expansive power of steam, and that water itself is composed of two gases, which, by their union, produce intense heat; and when we call to mind the number of explosive and detonating compounds which have been already discovered, we may almost join in the exclamation of Pliny, "Excedit profecto omnia miracula, ullum diem fuisse quo non cuncta conflagrarent."

And now having stated some of the reasons which have induced many geologists to reject the theory of central fire, and adopt the chemical hypothesis as explanatory of volcanic phenomena; I leave the subject in your own hands, to form your own conclusions, as to which of these rival theories best explains the subject. I will not, therefore, task your patience further, except to add one word in conclusion.

It must be confessed that on this subject we can only speculate. Human intellect has been compelled to acknowledge its inadequacy to give a satisfactory answer to the question, "Why are these things so?" If, however, with our finite understandings we do find, in the works of the Infinite, heights to which we cannot soar, depths which

we cannot fathom; we can at least recognize in the vastness of the majestic works around us some traces of the greatness of Him, at whose "Let them be!" they sprung into existence. And if we cannot explain, at all events, we can humbly gaze: and as we gaze; can wonder and adore.

LECTURE III.

ON IGNORANCE.

IGNORANCE may be thought a singular subject to be chosen for a popular lecture; its reign, indeed, constitutes a theme gloomy and repulsive in no ordinary degree. But when we recollect that of all the popular despots that have ever tyrannized over the human race, popular ignorance has had the longest and the most extensive sway; enslaving men's minds with a fouler and blacker tyranny than that which ever manacled their bodies, and rendering its spell-bound victims so infatuated as to be unconscious, or regardless, of their slavery; and when we recollect still further, that its power has not been circumscribed within any limits either of time or space, but that, as though gifted with ubiquity, it has reared its hydra-head in every land, and every age;—then, surely, if prevalence and importance constitute any claim to examination, Ignorance must be a subject abundantly deserving of attention. Nor will its importance sustain the slightest diminution in our estimation, whether we contemplate it in the light of Philosophy, Philanthropy, or Christianity. For if we look at it with the eye of a philosopher, we find that ignorance is not (as might have been

anticipated) a mere absence of knowledge, a kind of negation only, a sort of passive condition; but that as the human mind is a prolific soil, which, if it be not carefully tilled, and sown with good seed, possesses within itself the germ of evil, and will spontaneously produce the most noxious weeds:—so knowledge, being but another name for an acquaintance with truth, *ignorance* means *error*, and error is synonymous with *falsehood*. Let the philosopher continue his examination, and he soon discovers that man in a state of ignorance (whether contemplated individually or collectively) forms a kind of moral chaos, in which the elements of good and evil are strangely confused together, and presents an incongruous paradox, in which is seen a being gifted with intellectual powers capable of indefinite progression in intelligence, and affording the highest earthly happiness in their exercise, yet seeking all his pleasures in the mire of animalism and sensuality,—a being possessing faculties of a higher order than those intrusted to any other creatures that teem on this our planet,—yet scarcely raised above the sod he treads upon, and often degraded far below what are called (as though in mockery of the abstract fact) the lower orders of creation.

Nor can the Philanthropist look upon ignorance in a more favourable light. He sees, and mourns when he beholds it, that whether ignorance be a cause or an effect, in company with its inseparable companion vice, and misery, the common offspring of the two, it has long brooded over the face of this fair earth, sitting like a mighty incubus upon the breast of mankind, palsying every nerve, and clogging every effort at improvement; and if he tries to trace its ramifications in barbarous laws and usages, and degrading superstitions, he finds that, verily, "their name is Legion, for they are many."

The Christian, also, who will trouble himself to investigate the matter, perceives in ignorance the grand antagonist to Christianity; for while infidelity may be reasoned

with, and carelessness arrested, the mind that is clad in the panoply of ignorance, is proof alike against persuasion, argument, and truth.

Religion and intelligence, indeed, are kindred spirits, shedding a reciprocal light upon each other, and never truly flourishing except in each other's company; not that a certain degree of intelligence implies the possession of religion in the same ratio, for the cases of the philosophical Romans, and the polished Greeks of antiquity, show that learning and depravity may co-exist; but Christianity is a system appealing to the head, as well as to the heart, to the intellect as well as to the affections; and therefore never can attain beyond a stunted growth in a mind pre-occupied by ignorance. In proof of this assertion (if proof were requisite), I need only refer you to the fact, that missionaries invariably find it requisite to civilize when they attempt to christianize, and that before the Church can become extensively useful, the school must prepare the way. Nor indeed could we reasonably expect otherwise, if we bear in mind what I have already stated, viz., that all knowledge, whether secular or religious, is in reality "an acquaintance with truth:" secular knowledge, however, relating to nature, religious to revelation;—secular to the world of mind and matter, religious to the life, the conduct, and the affections. Nor are these two main branches of knowledge so widely separated as might have been anticipated. Nature and Revelation are two volumes from the same Almighty Author, both replete with instruction to all; and both deserving, nay, demanding the careful and reverent attention of all God's creatures, that have powers sufficient to examine them.

It is too often forgotten that all knowledge (whether secular or religious, or both,) forms a chain in which every portion bears a certain relation to every other; in which all the links are connected more or less closely together. This may be illustrated by a reference to the sciences, all of

which are, as it were, apartments in one house, all branches from one stem, all members of one body, the boundaries or confines of which can, but with difficulty be marked out. It is impossible, for instance, to study Geology without trenching on the boundaries of Chemistry on the one hand, and Botany, Conchology, and Anatomy on the other; it is also impossible to study Phrenology without finding ourselves, on the one hand, within the pale of Anatomy and Physiology, and on the other, in the mazes of Metaphysics; and it is equally impossible to learn Mechanics or Astronomy without getting into Mathematics. And in proof of the connexion between scientific and religious knowledge, I may observe that Natural Theology, while it constitutes the most sublime of all the natural sciences, forms no inconsiderable feature in religion also. To any one, however, who is acquainted with the writings of Paley, or that splendid series of discourses called the "Bridgewater Treatises," these remarks must appear superfluous, and they have only been made with a view of showing that as science and Christianity are so closely connected, so in our review of Ignorance, *it will be impossible to trace the effects of secular ignorance apart from that which is religious.*

But at present I have indulged in mere general observations, I would therefore solicit your attention to a further examination of the views already expressed, while we, first, take a brief sketch of ignorance; secondly, notice man's mental constitution and his position in the field of creation; and lastly, examine one or two objections that may be urged, as well as glance at the remedy proposed.

And, first, in reviewing the history of Ignorance, a difficulty meets us at the very outset, viz., with what people to commence our examination, and what period to fix upon as our starting point. We know, for instance, that the Antediluvian nations were sunk in the lowest state of ignorance and depravity; indeed, did we seek the rise of ignorance,—would we trace this mighty river to its source, we

must go to the very confines of Eden, and date our history from the time, when Adam paid so dearly for his knowledge of good and evil, by the loss of the one, and the acquisition of the other,—when the exercise of forbidden curiosity blasted Eden like a pestilence, entailing no less blindness of mind, than depravity of heart. But for this hasty glance at ignorance, (for it must needs be brief when confined to a single lecture) we will not extend our retrospective view beyond the period of the Deluge; and among all the post-diluvian nations of antiquity we find its power prevailing. The Persians, Phenicians, and Chaldeans, had doubtless made some advances in knowledge, the precise amount of which, perhaps, we cannot tell; but we know that it was not sufficient to keep them from the most debasing superstitions. The Egyptians also, (for of them we possess more accurate information,) had made considerable progress in Natural History, Geometry, Medicine, and Astronomy; in the last-mentioned science, indeed, they had advanced so far as to have calculated the time required for the earth's annual revolution, and fixed the length of the year at 368 days and 6 hours; in architecture and building also, they had attained considerable proficiency, as may be attested by the stupendous works which their perseverance has handed down even to our own times; and they are generally supposed to have been the first, that invented means of communicating information by writing, and were, consequently, the first that formed books and libraries. Indeed, that they considerably outvied the surrounding nations in the acquisition of knowledge may be inferred from the fact that Homer, Pythagoras, Plato, Solon, and Lycurgus,—with most of the illustrious of Greece,—completed their studies in Egypt; and Deity Himself has added His testimony, when He says of Moses, that "he was skilled in all the wisdom of the Egyptians."

But unfortunately this flattering portrait has a gloomy side. Egypt with all her power and all her wealth—with all her wisdom and her science,—was at best a heathen

nation sunk in the vilest idolatries, and practising the most wretched superstitions: the objects of her worship were birds, beasts, and reptiles; her land was a theatre of tyranny on the one hand, and slavery on the other; and whatever knowledge was possessed the priests were the sole depositaries of, guarding with the most jealous eye, writing in hieroglyphics lest their inferiors might avail themselves of it. Her laws, indeed, preventing as they did the working classes from engaging in any other employment, than that practised by their fathers, gave no room for emulation, no scope for ambition, no opportunity of rising in society; and hence afforded no stimulus to improvement, but clogged and trammelled every master-mind that might have risen from the lower walks of life.

Though, therefore, the priests possessed a certain amount of knowledge of which it was the selfish interest of their craft to prevent the diffusion,—though they themselves possessed "offices for the diseases of the soul" (as they denominated their libraries) which they kept closed against those who most needed to be cured; the great mass of the enslaved and priest-ridden people were in the lowest state of ignorance and mental darkness, as thick as that physical darkness, which an angry God subsequently brought upon them for their cruelties,—hung like a monstrous pall over the cities of their land.

But leaving Egypt, let us next glance at that highly favoured people the Jews; in them, indeed, we have perhaps the most striking elucidation of the effects of ignorance to be met with in the records of history, whether sacred or profane. During their slavery in Egypt, it is not at all surprising that they should have made but little progress in intelligence, for knowledge is a tender plant that cannot breathe the air of slavery; but after their emancipation from the thraldom of Pharaoh, and their delivery from the "iron furnace," as their own inspired historian calls it, their history presents an unbroken chain of evidences to their con-

tinued preference of darkness to the light—their wilful blinding of the eyes to truth. During their forty years' journeying in the Wilderness, notwithstanding the fact that the Almighty was peculiarly in the midst of them, that the wonders of His power were constantly before their eyes, that the voice of God was audibly presented to their ears, and that their very life amid the howling desert was a lasting attestation of His great might and His tender care; so wedded did they seem to the ignorant idolatries of Egypt, that the immediate presence of their Maker was insulted and profaned by the vainest and the vilest superstitions. Nor after their succession to the Promised Land do they appear to have been less infatuated in their love of ignorance. We have no information respecting the precise amount of knowledge which they there attained; we know that some illustrious individuals, such as David, Solomon, and Daniel, were no less remarkable for intelligence than piety; but from the continued remonstrances of their kings and prophets (for the regal and prophetic offices were often then combined,) respecting their intellectual blindness, we cannot help inferring that the majority of the people, still preferred groping in the darkness of their own superstitions to walking in the light of truth.

Favoured above all other nations, by possessing in their own tongue the oracles of God, they hugged them with a miser's care,—counting every other people vile and barbarous that were not similarly favoured; but, like a miser's gold, their rich possession was of no avail, for want of use and circulation. Preferring the legends and traditions of the Talmud, to the sublime truths of Revelation, (truths which would have raised them intellectually as well as morally had they been permitted to have their full effect,) in vain did their prophets mourn their besotted ignorance, constantly exclaiming, "My people will not hear, neither will they understand;" in vain did Solomon, who (from copious draughts at the fount of knowledge,) knew how to estimate

its worth, impress upon them the necessity that "with all their getting they should get understanding;" in vain did one of the last of the prophetic phalanx, forseeing the impending storm which, kindled by their hatred of instruction, was about to descend with awful fury and obliterate them from the catalogue of nations, declare "My people are destroyed for lack of knowledge." What the prophet clearly foresaw by the keen eye of inspiration, through the vista of succeeding generations, literally came to pass:—though knowing that they needed and expected a Messiah, they were ignorant of the features by which he should be distinguished, and therefore knew not the royal stranger when he appeared among them. "Light came to them, but the darkness comprehended it not." Their fatal error swept them as a nation out of existence, and we find Christ Himself; while contemplating the downfall of their city, referring their national suicide chiefly to their ignorance, when He wept over it as He exclaimed, "If thou hadst known, at least in this thy day." On that incident Foster forcibly remarks "This terrible memorial is a perpetual admonition, what a curse it is *not to know*."

And if ignorance thus pervaded Egypt, which is well called the "cradle of science," forming as it did the centre from which philosophy radiated throughout the world,—and Judea, the favoured treasury of revelation; we might naturally imagine that it was, if possible, more deeply rooted still, among the other nations of the world. The Greeks and Romans, it is true, towards the close of that epoch in the Jewish history, which we have now been considering, had made considerable advances in learning and refinement; but the Greeks and Romans of antiquity were at best barbarians, and perished in their barbarism. "What?" I can fancy many a one exclaiming, "could peoples that have bequeathed to posterity such specimens of architectural grace and symmetry, of magnificent design and elaborate execution, as the crumbling ruins of their theatres and

temples, their aqueducts, and monuments, still unfold to view; to say nothing of those imperishable records of human greatness—those 'monumenta ære perennia,' which their moralists and orators, their poets and tragedians, their historians and senators, have left behind them; could peoples that can boast of a Socrates and Plato, a Homer and Herodotus, a Demosthenes and Cicero, a Horace and a Juvenal, be other than wise, intelligent, and good?" In reply to this, I can but urge the assertion previously made, that "they were at best both ignorant and barbarous."

Far be it from me to wish for a single moment to dim the brilliancy with which the galaxy of master-minds in Greece and Rome still shines. It would betoken a rashness which nothing but ignorance could justify, to deny the fact, that those countries have given birth to a host of illustrious names, which would do honour to any land or to any age. The speculations of Socrates and Plato, on the nature of Deity and the human soul, cannot fail to strike with astonishment all who, living themselves under the meridian splendour of the sun of Christianity, reflect that then it had not risen. The lofty eloquence of their orators has seldom been equalled, never been surpassed; the sublimity of their poetry the most gifted bards of modern times have mostly failed to reach; the writings of their satirists and moralists abound with just views of human nature, betokening excellent powers of observation, and contain numerous precepts and reflections, which even Christians would do well to recollect (I envy not the mind, for instance, that could rise from the perusal of Juvenal's Tenth Satire, without moral as well as intellectual advantage); but all these instances show, not the intelligence of the masses of the population, but merely the gigantic grandeur of the human intellect, which, under circumstances so unfavourable, could be so signally developed. Instead, indeed, of these mighty names affording any criterion by which to judge of the

general enlightenment of the day, standing forth as they do in bold relief from the wretched level of their countrymen, they only, by contrast, make the popular ignorance of the age more apparent. Indeed, the writings of the principal Greek and Roman authors were known only to a few of the *élite* of society, for as neither paper nor printing was invented, their works could only be copied at immense expense on papyrus or parchment, and deposited in the public libraries, to which none but the aristocracy had access. For the condition of the majority of the people, you may refer to the writings of those whose names I have mentioned. See the dismal pictures which their satirists give of the darkness and depravity of the day; see the tyranny of the monsters that were tolerated as emperors, and the abject slavery of the people who willingly bowed the head beneath their yoke; see how the useful arts and sciences were neglected for the pursuit of aggressive and unjustifiable wars; see how the sword ever trampled upon justice, and physical might took the precedence of right; or, once more, see how a misguided people recompensed their intellectual illuminators,—how instead of loading them with honours, wealth, and admiration, the poisoned cup was the reward of Socrates, banishment of Ovid, murder of Seneca, and exile of Pythagoras! But I know of no better indices to the tone of a nation's feeling than their popular amusements, and popular religion. What were these in Greece and Rome? Their amusements were brutalizing, base, and blood-thirsty. The Coliseum and the Amphitheatre were the chosen resort of all, from the emperor to the meanest of his slaves; and the arena deluged with blood, the combats of ferocious animals, rendered still more fierce by hunger, and of animals in human shape, if possible, more fierce than these, provided the favourite spectacles which, by systematic training in the school of vice, even the gentler sex, laying aside that tenderness and delicacy which constitute their greatest charm, had pleasure in beholding. On

the grand feast proclaimed in honour of Trajan's victory over the Dacians, 10,000 beasts were killed in the Circus, and 10,000 gladiators fought, of whom one-half at least perished, in the presence, and amid the cheers of all the aristocracy, including the fair faces of Rome. Thus much for their amusements. And what of their religion? This, if such it could be called, was a Polytheism of the vilest kind: their deities were incarnations of their vices, and they were propitiated by human sacrifices, with the most disgusting feasts and orgies. Thus we see that, though we are accustomed to associate everything of elegance with Greece, and of majesty with Rome, their people were at best barbarians, and ignorance was the indubitable parent of their barbarism. And if it be asked, what were the characteristics of this ignorance? The answer may be summed up in very few words: they were ignorant of most of the exact sciences and of the laws of nature; they were ignorant of their Maker, ignorant of themselves, and ignorant of their future destination. They were ignorant of the laws of nature, and knew little of the causes of those effects which they saw around them: hence they were so ready to attribute them to preternatural sources, and hence their superstitious belief in omens, signs, and auguries. They were ignorant of their Maker: unlike the Jews, not having had the benefit of revelation, they were left to the murky light of reason and of conscience, their Pantheon was peopled from the noxious exhalations of the human heart; and though some among them, fancied they could see,—beyond the dark array of demon deities and sensual gods,—a Great Frist Cause, a sublime intelligence, worthy the adoration of intelligent creatures; yet such was the film of darkness that encased the minds of their countrymen, that their speculations, for such they were at best, were only looked upon as idle dreams and visionary subtleties. We all remember the sad admission of their ignorance on this important subject, in the monument which the proud Athenians (confessedly

the most enlightened people of their day), had created in their city to "*The unknown God!*"

They were ignorant of themselves; they knew not that their animal propensities, though perhaps the most powerful, were the lowest features of their mental constitution, and that their moral and intellectual natures *ought* to bear the sway. And once again, and chiefly, they were ignorant of their future destination; they had no idea of a day of reckoning for what they did while here,—and all beyond the tomb was gloom, obscurity, and doubt. To this last sad feature is owing the fact that they had no enlightened system of morality; for if the present scene were all, where was the use of self-denial; and if there were no day of retribution, who should hesitate to effect his own comfort or aggrandizement by injuring his neighbour? It is true the Pythagoreans well defined virtue to be εξις τον δεοντος, the practice of what is right, the oldest and perhaps the best definition of virtue that has ever yet been given; but in the absence of a code of moral laws acknowledged as a standard, how are we to tell what is meant by the term "right?" A glance at the opinions of the Epicureans and Stoics, the leading philosophical sects of the day, the one holding that the chief good lay in sensual ease, the other in indifference, may suffice to show the appalling darkness under which they lived. It is indeed a painful task thus to rend in twain the classic mantle in which these states are generally clothed, and point to the monster Ignorance, as having taken up his abode amid their mighty palaces and temples, but truth demands the *exposé*, and while we admire the splendid records of their greatness which have been handed down to us untarnished by the abrading influence of time, it is impossible to suppress a sigh that so much ignorance should have been blended with so much mightiness of mind.

We have now reviewed the intellectual condition of the principal nations of antiquity, and finding that the most

enlightened of these were illuminated only to a very partial extent,—and that illumination, partial though it was, was the property of a few, while among the rest, ignorance in all its hideousness held undisputed sway, it would be useless to extend our examination to the nations that were contemporaneous with those whose condition we have been examining. Most of these were savage, all uncivilized; and as is usually the case, where the mind of man is left uncultivated, the baser passions ever hold the sway,—conquest, slaughter, and plunder were the chief business of life, and thousands upon thousands of living beings, into whose nostrils had been breathed a living principle which must survive the wreck of the very globe on which they flourished, and whose powers of mind required but to be nourished, in order to be capable of illimitable flights into the realms of truth,—dwelt amid the boundless beauties of creation, heedless of all that surrounded them, and only living to eat and drink, then procreate their race and die. We have, therefore, seen the melancholy condition of the whole human family until within the last two thousand years; when a Celestial Visitant appeared upon the troubled waters of society bearing heaven's sign-manual upon her front, and with lineaments so fair and lovely, that one would have expected all would eagerly embrace her: she came to a benighted world, and only solicited a dwelling among men, in order to effect such an intellectual, as well as moral reform, as would raise them to that position on earth for which their powers had qualified them, and would have fitted them for a still more lofty employment when the phantasmagoria of time had passed away. I need not tell you her name was Christianity, nor need I speak of her reception among men. Like the dove that left the ark of Noah, she found at first on earth's tempestuous bosom no place on which to rest her feet; and when that was gained, and the olive branch was offered to mankind, the usurper Ignorance had so firm a grasp, that assailed as she was by

some, with all the weapons which malignant ingenuity could devise, and met by others with the coldest indifference, her continued existence was a continued miracle, her extension to human eyes impossible.

Happily, however (or she must soon have perished), Christianity was impelled in her onward course by something mightier than an arm of man. A system emanating directly from God Himself was not to be trampled upon and annihilated by the obstinate stupidity of His creatures; so,—with truth shining forth in every feature, the happiness of man her aim, and Omnipotence exerted in her support,—the little band of advocates who had enlisted under her banner during the personal presence of her Lord, formed a nucleus round which vast accumulations soon were made, and "the sect that was everywhere spoken against," was soon extended both to Greece and Rome. It might have been supposed that now, the monster Ignorance would fold his murky wings and shrink at the approach of the Heaven-born messenger of light. But it was not so: the powers of darkness were leagued together, and enlisted in the cause, and finding every effort insufficient to stay the progress of the Christian religion, "there was a grand change in the policy of evil;" stratagem was adopted instead of open war; an adulterous connexion took place between heathenism and Christianity, whereby, though the latter was nominally established, it was defrauded of most but its dishonoured name; and that life-giving stream, which would soon have swept away the miserable darkness that covered the people, was not stopped, (for that had been tried and found impossible,) but adulterated and turned aside, so as to be robbed of most, if not all, its efficacy. True it is that the sacred oracles existed, and had the people been permitted to peruse their pages, a different result would have ensued; but printing was not yet invented, so that to the masses the Scriptures were inaccessible. The popes and priests—finding the ignorance of the laity highly

conducive to their temporal aggrandizement, and well knowing that if the people were enlightened, they would soon receive a message like that mysteriously conveyed to Belshazzar by the writing on the wall, only not so difficult of interpretation,—with Christ on their lips, and Belial in their hearts, they invented a thousand ingenious pretexts for prohibiting the laity from perusing the sacred volume, even where it was accessible; and, impudently arrogating to themselves the attributes of Infallibility, proclaimed it sinful for the benighted people even to think for themselves, on a matter of such paramount personal importance as religion. One would have thought it almost impossible for tyranny under a religious garb to be carried further than this; but it was so. As though this were not sufficient for the purpose, they established inquisitions for the bodily torture of such heretics as dared to exercise their own opinions, and reject the iniquitous dogmas of the priests: and besides the bodily sufferings to which such persons were exposed, they were freely anathematized, and their souls consigned to future perdition. Thus, then, we perceive that Christianity, though itself a system differing from every *false* religion which either preceded or followed—inasmuch as, instead of prohibiting, it encouraged the acquisition of knowledge, and courted the light of day; by becoming, not amalgamated, but corrupted with the heathenism then prevalent in Rome, was rendered comparatively impotent. Robbed of its glorious features, it resembled Samson shorn of his locks, and though once threatening to exterminate ignorance from the land, it was now reduced to the condition of, not a lifeless, but at best a slumbering and powerless foe.

Let us, however, now leave Rome, and finish our review of the reign of ignorance, by noticing its prevalence in our own land. To do this it will be quite unnecessary to go farther back than the period which we are now considering.

Towards the middle of the fifteenth century, happily,

printing was invented, and from this date, the light of civilization began in reality to dawn. Though attributed to diabolical origin by those who were interested in its suppression, printing soon became general; and one of its first fruits, as well as one of the greatest blessings which it ever gave to society, was the Reformation, early in the following century. So singularly prophetic were the words of the Romish vicar of Croydon, uttered by him in a sermon at Paul's Cross, at the period of the first spread of printing:—"We must root out printing, or printing will root out us."

It was, however, long before the joint effects of printing and the Reformation, could materially improve the condition of the masses of the English people. Ignorance had too long held the undisputed possession of our country, to surrender it without a struggle; and it could not be expected that the national mind, so long famishing for lack of food, should be prepared to appreciate and enjoy it, as soon as it was presented. In the reign of Elizabeth, however (a reign rendered famous in history, from having given birth to Shakspeare and Spenser, Raleigh and Walsingham); literature and art appear to have been encouraged, and the tenebrious domains of ignorance to have sustained some diminution. But even here we are apt (as I remarked on the cases of ancient Greece and Rome), to form a considerably exaggerated idea of the condition of the people viewed collectively, by taking these illustrious names which have been handed down to us by the historian, or by the efforts of their own genius, as a standard whereby to judge of the intellectual illumination of the nation generally. Foster in his elaborate Essay on this subject, says of the state of England in Elizabeth's reign, "What it was, is shown by the fact that it was found impossible, even under the inspiring auspices of the learned Elizabeth, with her constellation of geniuses, orators, and scholars, to supply the churches generally with officiating persons capable of going with decency through the task of the public service, made ready,

as every part of it was, to their hands; and that to be able to read was the very marked distinction of here and there an individual. It requires little effort, but that of going low enough, to complete the general estimate in conformity to these and similar facts." Nor for a considerable period after the Elizabethan reign, do the majority of our population appear to have much improved. The constant execution of poor old women for witchcraft, and the ingenious mode of proving their innocency or guilt (viz., throwing them into water, and if they were drowned they were considered innocent, but if they floated on the water, they were deemed guilty, and consigned to the faggot and the stake), having been in constant requisition through several succeeding reigns, until as late as the year 1700, affords a tolerable index to the mental enlightenment of the people. During the dark period in English history, in which witchcraft was made a capital offence, it is computed that not less than thirty thousand suffered execution for this imaginary crime; and it appears truly wonderful that a man like Sir Matthew Hale, one of the best and wisest of his time, should have been so blinded by popular prejudice, as in his judicial capacity to have sentenced those innocent creatures to death.

We see then that for a considerable period after the reign of Elizabeth, ignorance retreated but slowly before the beams of knowledge and intelligence. True it is, that ever and anon, a brilliant star made his appearance above the dusky horizon, and dazzling by his coruscations for a while, dropped into the tomb; but these formed the exception and not the rule.

Let us come down to the commencement of the last century,—the golden age, as it is often styled—in which Addison, Pope, Swift, and a host of statesmen, philosophers, and poets flourished:—even then, notwithstanding the halo which these bright names have shed around this period of our history, we still find the great masses of the people

groping in profound darkness, so that Foster well observed: "When we look at the shining wits poets and philosophers of the day, they appear like gaudy flowers growing in a putrid marsh." Society at that period consisted of two chief divisions, between whom no mutual intercourse existed: the one, though small in numbers, qualified it is true, to a certain extent, to enjoy the rich literary repast which the age afforded, and utterly despising those whom they were pleased to denominate "the mob," "the canaille," "the vulgar herd," &c.: the other constituting the substratum of society, and comprehending the millions of the population at as great a distance beneath the former, as the poor slaves of Rome were beneath their finest moralists and poets.

Let us apply the test previously applied to Greece and Rome, and glance at their popular religion and popular amusements;—we shall soon see the true state of the case. What was their religion? Notwithstanding the comparatively recent flood of light, which the Reformation had shed on Christianity, this could now only be said to exist in name; the apathy of the clergy on the one hand, and the indifference of the people on the other, having permitted the inestimable benefit of a pure religion to slumber among them, as though it were a matter of no practical importance. At all events, if we possessed no positive information on the subject; if we had no cases on record of the religious services of the Sunday being abridged, to enjoy the sport of foot-ball, or bull-baiting as soon as they were over; if we were not aware of the fact that the iniquitous traffic in human bodies, which only sprung into existence in the reign of Elizabeth, was now carried on extensively with no remorse by a people denominated Christian; if, I say, we had not these, and a host of other positive evidences of the low state of religious knowledge at that time, we might very reasonably infer the ignorance of the people on this subject from the fact, that when an

evangelical ministry arose, preaching in their original grandeur and simplicity the truths of revelation as enunciated by the Reformers themselves, and set forth in the Liturgy, Articles, and Homilies, which most professed to follow, these very doctrines fell upon their ears as new and strange, and hostility and bitter persecution were the result.

And what were their amusements? These, like those of Rome, were base and brutalizing; bull-baiting, cock-fighting, pugilism, and drunkenness, may be taken as examples. It may be observed further, that though the art of printing had been invented more than two centuries, yet at the period under our review (the first half of the eighteenth century), scarcely one in a hundred had been taught to read, or had the least inclination to learn; so that England, with all her wealth and power,—her arms and influence,—was even yet, as far as the millions of her population were concerned,—one living breathing mass of ignorance.

Since then, however, particularly from the commencement of the present century, knowledge has certainly "been running to and fro in the earth." From the rise of a talented and zealous evangelical party within the Church, as well as numerous dissenting bodies;—the prevalence of Sunday-school instruction,—and the immense circulation of Bibles and of tracts,—religious knowledge has made considerable progress among the people;—and from the comparative cheapness of general education,—the enormous flight of periodical miscellanies and newspapers,—the low rate at which most literary productions may now be obtained,—and from the establishment of numberless institutions for the promotion of intelligence, secular knowledge has advanced in as great,—if not a greater ratio.

But still the reflective mind cannot fail to be impressed with the recollection, that considering all our advantages, we have not improved so rapidly as might have been expected. We know that even the nineteenth century, has witnessed such impostors as Johanna Southcote and Thom

of Canterbury; in the present day, too, we see Mormonism deluding considerable numbers of our misguided countrymen, thus showing that superstition, (the first-born of ignorance) is by no means extinct in our land; to say nothing of Socialism, Chartism, and various other "isms," by which crafty zealots and knavish quacks can still delude thousands of the people of England.

But the most palpable evidence at once of the prevalence of ignorance, and what I have previously hinted at, viz., its inseparable connexion with vice and misery, is to be found in the result of the late inquiry respecting education and crime, instituted by the "Statistical Society" in London, and embodied in a pamphlet, read at one of their recent meetings by Rawson Rawson, Esq. Among other results equally startling, we find that "about one-third of the adult male population of England cannot sign their own names, and that from one-fifth to one-fourth can neither read nor write." We find also, "that only ten in a hundred of the criminal offenders committed for trial in England and Wales are able to read and write well; and of those only four in a thousand have received such an amount of instruction as may be entitled to the name of education."

I must here be allowed to remark in passing, that it is really too bad, for society to first leave her members in ignorance, and then to punish them for the natural result of that ignorance. But it is not merely in the lower classes of the present day that we may still discover the lingering remains of a barbarous age; we can unhappily trace them in many instances, even among those whose wealth and station ought to set a different example. Some of the aristocratic amusements and cruel sports afford evidence of this assertion:—such as "Waterfordising" (as it has been termed), as well as the ridiculous notion that the defence of honour requires the exercise of tiger-passions, and that there is merit in taking away the life of another in

duelling, while the plebeian mode of murder on the highway is branded with infamy. We should hardly have expected to find these at a period when Christianity had been shedding her bright beams among us nearly two thousand years. Well may we sigh with Cicero of old, and exclaim, "Oh tempora, oh mores!"

But to sum up all: when we reflect on these, and a host of other facts that might have been adduced if necessary, we cannot help being driven to the conclusion, (humiliating as it is,) that though we have now arrived at anno 1842 of the Christian era, and 402 of the art of printing, yet England, Christian England, pre-eminently as she shines and honoured as is her name for the freedom of her press and goodness of her laws, for her civil as well as military glory, for her intelligence and wealth, is only just beginning to be civilized, is only just emerging from the shades of ignorance.

We have now taken a brief and imperfect review of the long and gloomy reign of ignorance; brief, inasmuch as volumes might be written without doing justice to the theme; and imperfect, inasmuch as the multitude of its ramifications, and importance of its effects, are such as cannot be enumerated, much less satisfactorily unfolded to view, within the narrow limits of a lecture like this. And one of the first reflections which must have occurred to the mind of every one present will be, that wherever ignorance has paralyzed the popular mind, it has inevitably been the progenitor of vice and misery; indeed that such should be the case we could not for a moment doubt, if we glance at man's mental constitution, and his position with regard to the other classes of organized beings, and the external world in general.

If we ask the question, "What is man?" we shall find that he is first, an animal, a perfect animal, possessing, if not in so high a degree of development, yet to a greater or lesser extent, every animal appetite and pro-

pensity, given to any of the lower orders of organized existence. But man, though an animal, is not (as some pseudo-philosophers would make him), merely an animal:

> "To every man are feelings given
> Partaking less of earth than Heaven."

He is a being gifted with a series of moral sentiments or emotions, such as conscience, hope, and veneration, which it has pleased the Author of our being to withhold from every other class of sublunary creatures, and these constitute man a moral being. But besides our animal and moral natures, man has been further gifted with an intellect, such as none of his cotemporaries on earth possess; an intellect not only, like that of the beast, perceiving what exists around, but enabling him to classify his perceptions when formed, and to deduce general principles when classified, comparing fact with fact, and idea with idea, and tracing the varied effects around him to their varied and often complicated causes. But there is this difference between our animal, and our moral and intellectual natures, that while the former acts spontaneously, the latter require the most careful and persevering culture. This should never be forgotten. Our appetites and passions, forming the links by which we are allied to the lower classes of creation, though left to themselves, flourish like hardy plants growing in their native soil; but the higher features of our nature,—those which are universally admitted to be the greatest natural gifts to man, must be sedulously watched and cultivated, or like tender exotics in a bed of weeds, they soon droop and wither. What then must be the consequences to the mind if left uncultivated?

In the generality of such cases the animal propensities, affording, as they do, the most powerful impulses, like angry steeds, break loose from all restraint, refuse allegiance to the dictates of morality, as well as to the convictions of the intellect, and hurry their infatuated victim, he knows not

how, into the miry depths of vice and dissipation. In other instances, the moral feelings are not entirely blunted, yet from want of intellectual illumination, they become blinded and perverted. Instead of shedding a certain light whereby to regulate the conduct, their ignis-fatuus glimmering serves only to deceive,—religion degenerates into servile superstition, and the very conscience itself gropes blindly in the dark.

But further than this, let us look at man's position, in reference to that of the brutes. He has powers of reason or reflection, whereby to regulate his conduct. The brutes possess them not; they, however, are governed by fixed instinctive laws, which reduce them to the state of mere sensitive machines, always doing right, because they cannot do wrong. The very capability of doing wrong is one of man's privileges, inasmuch as if he could not do wrong, he would no longer be a free agent; but this fact speaks volumes on the danger of suffering man to be ignorant; because, if ignorant, he is in a worse position than the brutes, not being governed like them by fixed instinctive laws, and, therefore, the less likely in a state of ignorance to do anything right. Let us take a single illustration of this. The mother, among the lower animals, requires not to be taught how to manage her young: if we go among the birds, we find the female upon the first occasion, making her nest with as much precision as the most experienced matron among her acquaintance, and treating her first born, not only with as much affection, but as much propriety as the oldest living specimen. She does all properly, because she is governed by an instinct, which prevents the possibility of her making a mistake. It is not so with the human mother; though she possesses all the affection of the other, instead of never doing wrong in managing her offspring, she seldom does right, unless she has taken the pains to become informed upon the subject. What is the consequence? "It appears by the London bills of mortality,

that between a fourth and a fifth of all the children baptized die, within the first two years; and there is no example among the more perfect of the lower animals, of such a vast mortality of their young, where external violence is withheld."

Mr. Combe in his Lectures on Education, mentions a case which very well illustrates the effect of ignorance on this important subject. He names "a young lady who in childhood lost both her parents; but sufficient property was left her to enable her to attain what is *generally* called a *good* education. She was reared in a fashionable boarding-school, and in due time was respectably married. When her first child was born, she was extremely perplexed. Never having lived where there were infants in the family, she had no opportunity of learning *by experience* how such tender beings were to be nursed; and never having been taught anything of the structure, or functions, or wants of the infant, she possessed no principles by which she could judge of the treatment proper for her child. In her anxiety to do it justice, she asked advice of every female friend, and was speedily bewildered amidst the incongruous recommendations which she received. Unable to decide for herself, she followed now one method, and then another, until in a few weeks the unhappy infant died." This is an extreme case, but there is no doubt that the infant perished "through lack of knowledge." Many other instances might be adduced to show the superiority of the brutes governed by instinct, to man left in a state of ignorance; but I preferred selecting this, because the consequences of ignorance on this subject are so clearly and strikingly seen. But if the brutes cannot do wrong, they are inferior to man in another respect, viz., they cannot improve. The first bee that buzzed on earth, and the first bird that fluttered among the fragrant bowers of Eden—constructed their habitations on the same principles as those now living, and as those which will be adopted so long as their species shall continue.

But man is a progressive being each generation adding a round to the ladder which has been scaled by his predecessors;—his powers are capable of indefinite expansion, of illimitable flights in the regions of pure enjoyment, of unfathomable divings into the mighty ocean of truth;—but how shall he do this? In one word, how shall he answer the purpose of his creation, if he be left to grope in ignorance?

We have now sketched the past history of ignorance, considering man's mental constitution, and his position in the scale of being,—and seen not only his capacity, but his necessity for knowledge;—it may be as well before coming to the last portion of our subject, briefly to notice two arguments which even now may occasionally be heard advanced against the spread of intelligence among the working classes more particularly. And first, let us notice the question sometimes put with a vast amount of consciousness of its importance by certain well meaning old fashioned persons, who, shaking their heads at all innovations, ask what is the use of all our modern knowledge? These individuals tell us that when there was less intelligence, things rolled on just as smoothly as at present,—that people seemed as happy, and that England was as great and glorious, winding up all by a repetition of the question, "What have we gained by all our knowledge?" But, difficult though it sometimes is, to meet a *cui bono* argument, particularly when urged in a knock-down manner; in this case I think the question is wrongly put, and that it should have been just reversed: "What would this country have been were it not for its superior intelligence?" If we ask what it is that has given England the pre-eminence which she holds in the catalogue of nations, making this little ocean gem, this insulated sea-girt spot, the mistress of the world? some perhaps would answer her superior army and navy!

But a slight examination will show the insufficiency of this answer; for what were the use of our soldiers' bravery, if we had not by our skill in mechanics been able to make

their fire-arms? or by our acquaintance with practical chemistry, understood the manufacture of gunpowder? And again, what the use of our undaunted sailors, if we had been ignorant of ship-building, geography, and navigation? or what would have been the advantage of both these classes, if by our internal resources we had not been able to support them? And what would have been the use of these internal resources, if by our knowledge we could not have made them available? A single instance will show this. Where were the use of those vast treasures of minerals and fuel, which have been hoarded in the storehouse of the earth for an inconceivable lapse of ages,—placed there by the Almighty Father of the universe long before the present race of beings had sprung into life at their great Creator's fiat,—if we were unable to dis-inter them, raise them to the surface, and apply them to those varied purposes for which they were intended? This single instance may suffice to show us that it is not to our wealth, nor yet to our bravery, that our nation owes its greatness; but to the intelligence of a large portion of the community which has furnished the one, and given effect to the other. Thus true knowledge is the source of national, as well as individual greatness; and as other countries besides ourselves are engaged in the onward movement,—to stand still is to recede,—to recede is to become the victims of impotence and contempt.

I know not, however, of a more important testimony to the value of knowledge than that afforded by the ignorant themselves, who so often lament their want of learning, while I never yet met with a case in which the man of knowledge was heard to sigh for ignorance.

Though it may seem almost unnecessary at the present day to become the apologists of knowledge, there is one other argument, occasionally brought forward, which, as it sometimes deceives by its speciousness, may be worthy of examination. It is, that by increasing the knowledge of the working classes, we are likely to encourage insubordi-

nation and discontent; that we shall raise them, in their own estimation at least, above the station in which they are placed; that they will be likely to become seduced by political quacks and impostors; and to fall into the artful snares of the infidel. The individuals urging this objection hold, that knowledge itself is good, if we drink deeply, but that, in the hackneyed words of a popular poet,

"A little learning is a dangerous thing."

Now, I confess that to myself, it would appear that if knowledge be valuable at all, even a small quantity would be better than none whatever, on the same principle that a solitary sixpence is more valuable than an empty purse. But let us see how this favourite objection would look if put in a different form of words: "Though understanding is to be man's guide to right conduct;—the less of it he possesses, the less likely is he to go wrong." Again, "It is a noble thing to have a FULL understanding of all that belongs to human interest and duty;—and therefore the next best thing is to remain in total ignorance."

"Or again, it would be a vast advantage to proceed a hundred degrees in the scale of knowledge; but the advantage is not in the *progress*, and therefore, if a man cannot attain all, he had better not attempt to attain any."

This is a question, however, that ought not to be argued on the narrow grounds of a petty, time-serving policy.

The question really is, whether reason was given to those individuals, to be the guide of *their* conduct as well as our own; to be so developed here, as to fit them for indefinite expansion hereafter? Whether *their* condition on earth is like our own; a kind of chrysalis state, preparatory to putting on a brighter plumage in a better land, when the troubled scenes of time have passed away? This is the proper mode of putting the question: and justice, reason, and benevolence should sit in conclave on the subject, ere an answer be returned.

Let us, however, bring the point to the test of experi-

ence, and I think we shall soon discover that instead of knowledge causing insubordination, it has had the contrary effect. For though, in the words of Lord Brougham, "Education makes men easy to lead, but difficult to drive; easy to be persuaded, but impossible to be enslaved;" every one must admit that it is more pleasant to have workmen who are prepared to appreciate a master's reasons in requiring anything at their hands, men who may be persuaded rather than commanded, and who will discharge their duties from a sense of rectitude rather than a servile motive. But let us take the opinion of those who have given the experiment a fair trial; and we find from a report of the Poor Law Commissioners, in London, 1841, on the Training of Pauper Children, the following evidence taken by Edwin Chadwick, Esq. "I examined many gentlemen who are at the head of very extensive establishments, and who are well qualified to give evidence on the subject. They unanimously and strongly declare the inferiority of uneducated to educated workmen, not only in operative ability, but in steadiness, peaceableness, reasonableness, sobriety, economy, and general respectability of character. Convinced of this by experience, they have to their utmost, promoted education among the working classes. Mr. Smith of Deanston, for instance, provides schooling at his own expense for 200 children. Another employer has educated a larger number, and his first desire to do so, was the wish to make his work-people happy; 'but,' said he, 'we have found that, had it all been done simply as an investment of capital, it would have been a highly profitable one.' He says, 'I would not, as a pecuniary speculation, consent to take less than 7000*l.* for my set of workmen, (upwards of 800,) in exchange for the uneducated and uncultivated workmen of a manufacturer opposite. We find the steadiness of the men induces steadiness of work, and comparative certainty in the quantity and quality of the produce.' Speaking of the recrea-

tions which he had provided for them, he said, 'Thou mayest think it strange for one of my persuasion (the Quakers), but it is true; I have paid for a big drum and some horns. to give them mirth after their labours.' Mr. Smith, previously quoted, says 'his best workmen were the soberest; he has 350 tee-totallers among them; he has all the workmen living in habitations built with a view to comfort, cleanliness, warmth, economy, and respectability of appearance;—drainage being particularly attended to. He encourages (as a duty) their rational amusements; at the end of each division of houses there is a white blank for playing tennis; he sanctions quoits and foot-ball. Music is also encouraged. They have a library too. There has not been a strike for the last thirty years; nor has he now a man that has lost a day's work from insobriety.' Such are the gratifying statements of Mr. Smith, who is obviously one of those who act on the glorious maxim that 'property has its duties as well as its rights.'" O si sic omnes!

Again, how far does fact justify the opinion that increased knowledge renders men discontented with a humble station? In my own opinion, instead of raising a man above his station, it would have the effect of raising his station to the higher level occupied by himself; nor is this merely theoretical; it is the result of personal observation. I will here mention one case; it is that of a young man (now numbered with the dead) whom I was privileged to call a friend; though occupying what the world might think a station inferior to my own. This young man was of respectable parentage, though poor, and was apprenticed to a gentleman's gardener in Scotland. He pursued his business with zeal, but the leisure moments wasted by many, were by him employed in enriching his naturally vigorous mind. He was decidedly religious, and had long desired to go abroad as a missionary; not because he was discontented with his station, but because he was sincerely desirous of being made useful to his fellow men. He had

saved some little money as a humble gardener; and, with a view of carrying out his plans, entered the Glasgow University. He pursued his studies with zeal and success: to an intimate acquaintance with Greek and Latin, he added a fair knowledge of Hebrew; in History, Logic, and Metaphysics he was very well versed; while in Divinity he was profoundly skilled. All went on well, until he was seized with typhus and reduced to the brink of the grave; from this he was just recovering, when the rupture of a blood-vessel again very nearly consigned him to the tomb, giving a shock to the system, from which he never entirely rallied. His projected mission to the coast of Africa was now set aside, as it was deemed madness for him to encounter the hardships of a missionary life. What then did he do? He did not, inflated with a sense of his own importance, scorn the humble occupation to which he had been brought up. But with pious resignation to the will of God, he resumed his lowly toil, and applied himself to the cultivation of fruits and vegetables for the market; day after day might he be seen, like our first parents, tilling the ground whence he was taken; and every Saturday night was this gifted individual (with learning and attainments deserving of the highest admiration, and almost enviable), to be found standing in Wolverhampton Market-place, selling cabbages and potatoes to any who would visit his humble stall. Nor did he deem this derogatory to his character, for (as he often expressed to myself) "he felt that no occupation could make a respectable character a *low one*, while a respectable character could make the lowest occupation really respectable."

Another instance, showing there is no inconsistency between great mental attainments and a humble occupation, may also be briefly mentioned. I allude to the case of Elihu Burritt, the learned blacksmith of Massachusetts in America. This humble individual, though only twenty-seven years of age, has an intimate knowledge of upwards

of fifty languages, acquired solely by the persevering application of what he calls his "odd moments:" and though, as a linguist, he is second only to Mezzofanti, the Italian, Professor of Oriental Languages in the University at Bologna, he scorns not his lowly occupation, but works daily eight hours at his anvil and hammer, devotes eight hours "with blistered hands and brightened hopes," (as he himself says,) to his books, and the remaining eight hours to animal enjoyments and repose.

Then again, to assert that the more educated the working classes become, the more likely they are to fall victims to political quacks and knavish impostors, is certainly to reverse the case. If we come to facts, we shall find that it has always been to catch the ignorant and unwary, that the demagogue has spread his net, finding, from experience, they form the class that eagerly listens to cajoling professors, and are fond of extravagant theories and doctrines. But I have spoken of facts. Who then, let me ask, gathered round the madman Thom of Canterbury, believing that crazy zealot a divine person and invulnerable, until a stray shot from a musket took away his life, and then confidently believed he would re-appear alive? Who again were they that rallied round the smutty banners of Socialism, that monstrous compound of infidelity and ignorance? Or who enlisted in the ranks of the castle-building Mormonites? Were they the intelligent, the reflecting, or the enlightened? or were they not rather the ignorant and uninformed? On the authority of close personal observation, I can answer that both these sects are composed mostly of unlettered and ignorant men. John Foster, the Essayist, well observes, "experience entirely falsifies the notion that knowledge, imparted to the lower orders, beyond what is necessary to the handling of their tools, tends to factious turbulence; or, from the instigation of certain wild theories, to an impatience under law and regular government in society." The maintainers of this notion should affirm that the people of

Scotland have been to this day about the most disaffected, tumultuous, revolutionary rabble in Europe; and that the Cornish miners, now so worthily distinguished for intellect and religion, are incessantly on the verge of insurrection against their employers and the state. Once more, we are told that the cultivation of the reasoning powers among the working classes, would be favourable to Infidelity. But I am inclined to suspect extreme shallowness on the subject of religion in any man, who, by urging this objection, would seem to confess that *his* system of Christianity is based on so slight a foundation, that the exercise of reason upon the subject would raze the fabric to the ground. It is a monstrous defamation of the character of Deity, to say that He who has given us our reasoning powers, presents for our belief a system of religion which would vanish into nothingness, before their scrutinizing gaze. But let us bring this portion of the objection also to the test of experience; and whom do we generally find the railers against Christianity? There may be, and doubtless are, *some* educated men who are infidels; but these, though well informed on other topics, if interrogated on the subject of religion, show that they have examined its doctrines but slightly, and in a captious spirit, if indeed, at all. The writer of these remarks has generally found that infidelity is of a negative character; that is, instead of being the result of an examination of Christianity, and a conviction that its doctrines are erroneous, it is mostly the result of ignorance on the subject, coupled with what is worse than even ignorance, a disinclination to give a fair hearing to its claims; thus adding one other proof of the truth of the adage, "there are none so blind as those who *will* not see."

On the other hand, they who have been induced to give Christianity a fair and impartial examination, have seldom failed to be struck with the ennobling piety which it breathes, the pure morality which it inculcates, the exalted hopes

which it exhibits, and the unclouded and serene peace of mind, which, amid the chequered scenes of this passing world, it alone is capable of imparting. So far, then, for the objection—that the education of the working classes would be more favourable than ignorance, to insubordination towards their employers, discontent with their station, political quackery, and infidelity.

Let us in conclusion very briefly notice some of the means by which ignorance may be dispelled, and the invaluable blessings of knowledge more generally diffused. These means are doubtless "Education;" but at the close of a lecture like this, we can only allude to it incidentally. It becomes, however, a question with myself, how far a state is justifiable not only in not providing for every member of the community, but also in not compelling every member to avail himself (when provided) of the means of instruction? It is, I know, sometimes urged, that this would be interfering with the liberty of the subject; and that as some parents would object to this, the state has no right to obtrude itself between parents and children in the matter. But if some parents have an objection to education, there are others who have an equally singular objection to *cleanliness;* but we do not consider this objection valid; and we legislate in the matter in spite of it. So there are others who have an equally strong objection to *honesty;* here also we neglect their private opinions and feelings, and act on the compulsory system. And it would, I think, be difficult to show that either personal filth, or personal dishonesty, are more dangerous or disgraceful to a state, than the personal ignorance of the community; therefore, if the state interfere in the one case, it may also in the other.

Prussia has set a noble example to Europe on the subject of Education. In that country, as in Germany generally, it is obligatory on all parents to send their children to school, from the age of *seven* to *fourteen*, beginning earlier

if they choose, and the duty is enforced by penalties. "Each parish is compelled to support an elementary school, each considerable town a burgher school for the more advanced studies, and each great district a gymnasium for classical studies, and each province has its university. The parish school is supported by the parish, and for its management all the landholders and heads of families are formed into an union, which appoints a committee to inspect and watch over the school. The system of instruction is prescribed by authority, and is nearly uniform for the whole monarchy." —Combe, p. 47.

In Holland also a similar system is pursued, all persons there receiving at least a good education in reading, writing, and arithmetic; and this is followed by the very best results; all the travellers thither concur in the remark, that the people are most of them intelligent, virtuous, and peaceful. The best mode of examining the effects of the system there pursued, will be to glance at the criminal statistics of the country. On the authority of Chambers, in his tour in Holland, a year or two ago, it appears that out of a population of *two millions*, there were only *ninety-five* criminals in the penitentiary at Rotterdam, where all the thieves are sent to be educated and taken care of. We may well blush for enlightened England on hearing this statement, and in comparing Holland with our own country.

It has been observed, that our nation owes the honourable position which she holds chiefly to her intelligence; let her then look well to her laurels, for the whole civilized world is now marching onwards, roused to action by the importance of this subject. Education is advancing with prodigious strides across the mighty prairies of the western world. Russia is rising from her slumbers,—like a giant refreshed, awakened at the sound thereof,—Germany now unfurls the banners of knowledge, as willingly as once she obstinately resisted all its genial influences,—and the mantle

of intelligence has long since descended over the hills and dales of Switzerland, which are tenanted by a race of men, as remarkable for their simplicity of life, as for their virtue, intelligence, and peace. Let England then keep pace with this mighty movement, or her sun must set, and her glory be inevitably tarnished. The education to which I have thus incidentally alluded, bears reference solely to the rising generation. But it is an erroneous opinion, (too often held,) that education ceases when we leave our schools, whereas, in point of fact, it is only the beginning. Education is the grand business of life; and all that we do at school is to obtain the keys of knowledge, the instruments wherewith to dig in our search after the treasures of truth. What, then, are the means most available for carrying out those rudiments of education, which men receive at school, or for instructing those, whose means have hitherto been neglected? for, in the words of our old Latin exercise, "Nunquam est sera, ad bonas mores via." I think we may recognize one important help in properly conducted Mechanic's Institutions. These institutions, with their triple machinery of lectures, libraries, and classes, are important moral engines, capable of accomplishing much, if properly conducted, in improving the habits, and elevating the character of the people of this country. The lectures there delivered, not only afford an agreeable means of amusement for the working man, when the hours of his daily toil are over; but by agitating the public mind, have the effect of diffusing a taste for intellectual pursuits, and rational recreations; for the further gratification of which, abundant food is provided, in the libraries connected with such institutions, and in the classes to be found in many, and which should be found in all of them. There is, however, one objection sometimes urged against them, which it may be well briefly to notice, viz., that religious instruction is entirely excluded from them. Now it should be remem-

bered, that if religion were here taught, they must necessarily become sectarian; and in small towns (at all events,) sectarian institutions of this kind cannot flourish, in consequence of the smallness of the number of each particular denomination. Besides this, let knowledge never be monopolized; let us have *free trade* in intelligence, which, like the air we breathe, should be common to us all. Moreover, I for one, cannot approve of that monkish seclusion from persons holding other tenets than our own, which seldom fails to engender acrimonious feelings, as well as misconception of the views entertained by those with whom we are surrounded; and who, however, we may differ in opinion, are descended with ourselves from the same common parents.

Throughout this lecture I have considered ignorance as being both secular and religious. I have shewn that they have generally gone together, and that the converse of the proposition has also held good:—Intelligence and Christianity never appearing to flourish so well, as when in each other's company. But we must recollect that, in this country, numerous temples are erected in every town, for the propagation of Christianity alone, and a large class of educated and talented men are appointed; whose high, and holy, and *enviable* office it is to preach its doctrines, but in their discourses secular knowledge is not conveyed; and I, never hope to see the pulpit desecrated by the introduction of anything irrelevant to the sacred purpose for which it was established.

What then must be done? Philosophical societies and Mechanic's Institutions are to secular knowledge, what churches and chapels are to religious. It is clear, therefore, that without such institutions, secular knowledge, which is so valuable a handmaid to religion, would not be diffused as it should be; but with these for the advancement of general knowledge, and our sacred edifices for the propagation of religious doctrines, we may hope that Christianity and Intelligence will go hand-in-hand together, conquering

and to conquer, until the last lingering traces of ignorance shall vanish from the view; and our much-loved country, which has long been pre-eminent for her wealth and glory, shall be equally distinguished by her possession of a more sterling wealth, and a more enduring glory, in the peace, virtue, and intelligence of every class of her community.

June, 1842.

LECTURE IV.

ON EDUCATION.

THERE are probably few words in our language with which we are more familiarly acquainted, than that which forms the topic of the present paper—Education. Yet, notwithstanding our familiarity with the name, the sentiments of most persons on the subject, are exceedingly vague and indefinite; indeed few, if called upon to define what is meant by the term, would be prepared with a reply, and a still smaller number would agree in the definitions that would be given. One, for instance, might tell us that Education consists in acquiring a knowledge of reading, writing, and arithmetic, which, with the doctrines and duties of Christianity, are enough to know; while another would argue that an acquaintance with the general range of useful and polite literature, together, with at least the rudiments of the various arts and sciences, are essential to education; and a genuine Oxford scholar, utterly discarding the useful information spoken of by the last, would deem education imperfect without a knowledge of Æneas's adventures when hunting Dido's ghost among the departed spirits, with the various exploits, the wars and revelries of the fabulous

monsters deified in the heathen mythology, and with the intricacies of the Greek verbs in ω and μ. Dr. Johnson is exceedingly luminous on this subject, but does not exactly accord with any of the definitions given. According to him Education is "Instruction," and Instruction "Teaching;" but what "Teaching" means, the great philologist leaves us to guess. Thus, then, it appears that in common parlance, the word Education has no definite or conventional meaning: still to treat of education without defining what is meant by the term, is to make a show, but in effect to say nothing. Let us, therefore, examine the etymology of the word to see if that will throw any light upon the question. Its derivation is from *ê* and *duco;* to lead or draw out: it would follow, therefore, that Education is the means adopted for the leading, or drawing out, or developing of our various powers; and that as man is a physical, moral, and intellectual being, so education is of three kinds—physical, moral, and intellectual.

In this sense, the word will be used throughout these remarks; and taken in this view, it will be seen that education should not be restricted to a few years in infancy, and youth, but that it should begin with the first hour of our existence, and only cease with the last pulse of life.

And now, having seen what education is, I would direct your attention for a few moments to its vast importance. Taken in the aspect just considered, as the process of developing our various powers, its value becomes so greatly enhanced, that education may safely be pronounced one of the most important subjects that can possibly engage the mind of man; for not only does it relate to the formation of habits, the training of the mind, the developing of the powers, for our respective stations in the world; its influence is not of so transient a character as to forsake us at the dark portals of the grave; but our education here, is our education for eternity, and the faculties which we are developing on earth, are intended only to reach their full

expansion in a country better fitted for their exercise than this—in Heaven itself.

The Bible is full of this doctrine; Christ is presented to our view as the Great Teacher, and His followers are called His disciples.

St. Paul also repeatedly inculcates the same idea, calling earth a school. Many other metaphors used in Scripture might likewise, if it were requisite, be adduced in support of this view—that education, both moral and intellectual, is only the drawing out of our powers, to fit them for a more exalted sphere of action in eternity. A state of probation, a kind of college, in which candidates graduate for Heaven, the entrance-hall of the Everlasting Mansions,—a state of infancy antecedent to the perfect manhood,—and a variety of other figures are employed, all of which convey the same idea. Education, therefore, as before stated, should not be confined to the young: it is the purpose for which our Creator placed us upon earth, and should therefore be made the grand business of life. It may, indeed, be fairly argued, that as the most highly cultivated mind is the most susceptible of refined pleasures, and that therefore, the education of our powers increases their capacity for enjoyment; so in Heaven itself, the extent of bliss will be, in the same ratio as the development of the moral and intellectual powers.

This view, I am aware, presents a difficulty to some people, and those in many cases sincere Christians, who think it probable that earth may be intended for the drawing out of our intellectual powers, but who cannot realize the idea that the murky atmosphere of this world is at all congenial to the growth of the Christian virtues.

They speak of the sinfulness inherent to our natures, of the proneness of our passions to become wild and rampant, of the sluggishness which characterizes the exercise of the Christian graces; and, in addition to these difficulties from within, the thousand temptations that daily meet us from without, causing them to look upon earth as a vast

howling wilderness, a sterile desert in which no good thing can grow; forgetting the object to be accomplished by their sojourn here,—to long ardently for another land, where, like weary pilgrims, they may be at rest.

Now, I for one believe fully in the doctrine of original sin, the depravity of the human heart, and the difficulty of maintaining the Christian course; but these very difficulties seem to me, to be means to an end, and the various temptations which assault our virtue, appear to be the instruments intended to aid its growth. Indeed virtue without temptation is not virtue; for if man had no ability to sin, he would be a mere moral machine, possessing nothing more elevated than the beasts of the field, who always do right because they cannot do wrong. "Non virtus est non posse peccare. Posse peccare datum est primo homini non ut deinde peccaret, sed ut gloriosior appararet, si non peccaret quum peccare posset." Where, for example, would be the virtue of overcoming sin, if there were no sin to conquer? Where would be the laurels for the Christian warrior's brow, if he had no enemies to contend with? Why should Eternal happiness be held out, as the reward of treading the narrow path, if we are victims of sheer necessity, and if there be no downward path to invite our steps? But the Creator appears to me to have had a special object in view, in ordaining that the only entrance into His kingdom should be through trials and temptations; viz., that by enduring the former, and resisting the latter, our virtues may be strengthened, and thus we may become more fit for the "assembly of the just made perfect."

This doctrine is, indeed, expressly laid down in scripture by St. Paul, who gloried in tribulation:—why? Not because it was agreeable, but because it was a means of education,—because it tended to promote the growth of the Christian graces,—"because tribulation worketh patience, and patience hope,—and hope maketh not ashamed."

But perhaps I am digressing. I will, however, request

your attention, while I briefly advert to what I conceive to be a grave error respecting the value of intellectual education; an error the more deserving of attention, because chiefly committed by those, whose piety and sincerity entitle them to the highest respect. I speak of the prevalent notion among some classes of Christians, that what is called head-knowledge, is in itself to be deprecated, on account of some fancied tendency to subvert religion.

They hold in its literal sense, that "what God reveals it is enough to know;" and all beyond this is looked upon as "the knowledge that puffeth up," and making wise above what is written. One or two considerations, briefly stated, (for this subject is in itself of sufficient scope for volumes,) will however, lead to an opposite conclusion.

In the first place, let me ask who gave us our intellect? The answer is undoubtedly, "He that breathed into our nostrils the breath of life when we became living souls." And for what purpose were they given? the answer is equally obvious,—to be exercised. It surely cannot be supposed that the Almighty would gift man alone of all the various beings that people this mundane sphere, with an intellect capable not only of perceiving, but of examining and reflecting upon the various works of creation, for no purpose whatever. Man's intellect, instead of possessing powers of comparison and causation, would not have differed from that of the lower animals, had it not been intended for a more exalted kind of exercise. And still less probable will this idea seem, when we consider the rich provision which our Creator has made for the gratification of our intellectual powers. Whether we look above, below, around, or within, we find the richest table spread to satisfy that thirst for knowledge, which has been implanted in the human mind. If we look above, we see the vast concave of heaven studded with innumerable orbs; the sun in majesty dispensing from his throne both light and heat, not with a niggard hand, but in rich profusion, ever giving, yet

never exhausted ;—the moon, the queen of night, cheering the dreary hours of darkness with silvery rays borrowed from the sun,—and ten thousand times ten thousand planets forming her train attendant,—each of these at distances almost inconceivable from each other, and from us,—held by a hidden power, retaining its own position, poised in vacuity ;—and guided by a pilot unerring though unseen, travelling in silence its appointed path. These furnish a field of exercise for the most gigantic intellect, the extent of which the eye of conception cannot traverse,—and imagination at her utmost stretch is wearied with the thought. Nor do the wonders of these lamps that burn in the starry heavens,—sublime, stupendous, infinite though they be,—form the half of that rich display which Deity has provided for the human mind to feast upon. If we look below, what wonders meet us there. Each stone we tread upon, and every rock that man has perforated, is in itself a history :—some unfold to view the chemical operations which for thousands of years have been silently going on in the vast laboratory of nature ;—others tell of fiery streams vomited with fury from the bowels of the earth ;—some, though now perhaps upraised to the highest mountains, speak of long past ages when they lay beneath the sea,—and others tell of the wondrous forms of existence, which tenanted this globe ere man was placed upon it ; of the trees that flourished in the primeval forests ;—the plants that in the earliest ages adorned the face of nature ;—and the various orders of living creatures that wandered over the surface of the ground, and swarmed in the pristine lakes and seas. Nor is this all,—for if we look around, earth, air, and sea are all replete with wonders;—the animal, vegetable, and mineral creations, with the habits and instincts of the first,—the physiology and beautiful adaptation to the various climates, circumstances and localities of the second,—and the astonishing chemical, magnetic, and galvanic phenomena of the third, are all inexhaustible mines of pleasure;—while the physical, organic, and moral laws by

which the world is governed, form subjects of investigation —alike stupendous and enchanting.

Once again, if we but change the scene and direct our glance within, another field is opened to our view. Our physical frames which, with their complicated machinery of bones, nerves, and muscles, "are so fearfully and wonderfully made;"—the pulsations of that pendulum within, which regulates the motion of the vital fluid,—forcing its crimson tide through valves and veins and arteries to every portion of the body,—the mysterious channels of communication between the thinking principle within, and the various objects without,—the astonishing nature of our mental constitution with its various faculties, sentiments, and propensities,—and the reciprocal influences exerted by the mental and corporeal parts of man, form another unfathomable well of research, into which, no matter how oft we dip, we may "still find something new, something to please, and something to instruct." And could the sensualist be persuaded here to drink, he would be astounded at his infatuation, in having ever preferred the grosser pleasures of the body, to that refined and elevating enjoyment arising from the exercise in this noble field of the noblest portion of his nature.

Nor can it for a moment be imagined that man should be placed in such a scene as this, and such a thirst for knowledge be given as is possessed by every mind not blunted and made callous by the vices of the world, if amid all these wondrous streams of knowledge, it were forbidden him to taste. Fortunately, we need be under no doubt on this point; for few will deny that intellect, whether the amount be great or small, is a talent entrusted to man: and we know our Lord's sentence on him that refuses to use it. Another consideration which may be of use in helping us to form correct views on this subject, is, that if God were a God of ignorance, ignorance, might be pleasing in His sight; but as He is the ALL WISE, then surely any approximation on the part of His creatures must be in accord-

ance with His will. Nay, it were defaming the character of Deity to say the reverse. This, indeed, was the purport of the first lie; that lie which blighted Eden like a pestilence, turning a Paradise into a wilderness, and a scene of happiness into one of woe; representing the adorable Creator as wishing to keep His creatures in ignorance,—"for God doth know that in the day ye eat thereof, then your eyes shall be open, and ye shall be as gods, knowing good and evil." This, however, we know to be a foul libel on the character of Our Maker, who is infinitely wise: and Christianity is a system worthy of Himself; a system differing from all false religions, whether Pagan, Mahometan, or whatever else,—in that, instead of closing men's eye, it courts the light, and instead of being undermined by the successive discoveries, which modern science has achieved,—these, by removing the ignorance which previously obscured its brightness, have had the effect of confirming it more and more.

And now, after glancing at the importance of education, let us pass on to consider what appears to me some of the more prominent defects in education, as at present generally imparted. Premising, however, that though in the outset education was divided into three branches, physical, moral, and intellectual; the enquiry to be pursued on this occasion will relate solely to the two last, the moral and intellectual; not that the present system of physical education is less susceptible of improvement than the other two varieties.

To commence then with moral education, in which, I think four errors are generally committed; the first of these, which lies at the root of all the others is, that it has been generally conducted empirically. People have endeavoured to educate the moral powers, without regulating their conduct by any fixed principles,—without having any philosophy of mind as a standard to which to appeal, and in ignorance of the very nature and functions of the powers which they are endeavouring to draw out.

I think it will be readily conceded, that no one can expect to rear a variety of young and tender animals, and that no florist can succeed in the cultivation of a series of delicate plants, if they be ignorant of the nature and habits of these animals or plants themselves; so also is it unreasonable to expect success in the culture or education of man's moral powers, without first knowing what those powers really are, and what peculiar mode of treatment is most adapted to each. Yet, strange to say, even in this intelligent age, few who aspire to the office of instructors of youth, provide themselves with that most essential of all qualifications,—a knowledge of the mental powers whose growth they are intending to promote. This error might, however, be easily removed, if those on whom the moral tuition of the young devolves, (whether occupying the position of parents or tutors,) would immediately apply themselves to a study of our mental constitution, with the number and nature of our various powers, as well as their spheres of actions. Without this knowledge their conduct resembles that of an individual who should attempt to remedy bodily defects without any knowledge of the physiology of our frames; but with this information, they might pursue their duty with a reasonable prospect of success. How easy, for instance, is it to conceive of the intelligent mother, who is acquainted with the various powers, propensities, and feelings of her children when surrounded by her little ones at the evening fireside; combining with that useful information which should ever characterize parental conversation, direct appeals to those higher sentiments, which she is anxious to see developed, in some such answers as the following, to their artless interrogatories:

"What is that, mother?—The lark, my child,
The morn has first looked out, and smiled,
When he starts from his humble grassy nest,
And is up and away, with the dew on his breast,
And a hymn in his heart to yon pure bright sphere,
To warble it out in his Master's ear.

Ever, my child, be thy morn's first lays
Tuned, like the lark, to thy Maker's praise.

"What is that, mother ?—The dove, my son,
And that low sweet voice, like a widow's moan,
Is flowing out from her gentle breast,
Constant and pure, by that lonely nest,
As the wave is poured from some crystal urn,
For her distant dear one's quick return.
Ever, my son, be thou like the dove,
In friendship as faithful, as constant in love.

"What is that, mother ?—The eagle, boy,
Proudly careering his course of joy,
Firm in his own mountain vigour relying,
Breasting the dark storm, the red bolt defying;
His wing on the wind, and his eye on the sun,
He swerves not a hair, but bears onward, right on.
Boy, may the eagle's flight ever be thine,
Onward, and upward, true to the line.

"What is that, mother ?—The swan, my love,
He is floating down from his native grove.
No lov'd one now, no nestling nigh,
He is floating down by himself to die:
Death darkens his eye, and unplumes his wings,
Yet the sweetest song is the last he sings.
Live so, my love, that when death shall come,
Swan-like and sweet, it may waft thee home."

And my own conviction decidedly is, that not only tutors, but children also, would derive much benefit from being early acquainted with their own mental constitutions. They would then become intelligent co-operators with their parents and teachers in their whole education, and by being able to analyze their various feelings and impulses, and to trace every inclination and desire to its source, would be far less likely to give the reins to their passions and propensities, than if they are in ignorance of the nature of the emotions which they feel. A popular author on Education draws a vivid picture of the conflicts with which he was harassed in childhood (a picture which most of us can apply to ourselves), from a lack of the knowledge to which I am alluding. He says, "I can well recolle the painful

conflicts which I experienced, and the difficulty which I felt in determining which feeling was right. For example, I was easily offended, and often burned to gratify my feelings of revenge; but benevolence and my conscience would whisper that this was wrong; I felt instinctively the opposition between these feelings, but I knew not their relative value. I sometimes thought that submission to aggression, and forgiveness of injuries were cowardice, and indicated a want of manly spirit; and if the better principles actually prevailed, I rarely enjoyed the satisfaction of the conscious triumph of virtue." Now, had he been able to trace these conflicting emotions to their source, had he known that the desire of revenge,—however much those, who ought to know better have endeavoured to identify it with honour,—is at best a tiger instinct, and that the forgiveness of injuries, instead of being incompatible with manliness of spirit, constitutes one of the brightest features in the human character, can it be believed for a moment that he would have hesitated on the subject?

A second error, very often committed, but arising from the same source as the last, is this:—actions proceed from feelings or mental impulses, and the tutor who is ignorant of the constitution of the mind, can only judge of the latter by the former. The consequence is, that in academies generally, children are punished for bad actions, while comparatively no means are taken (nor in this state of ignorance can be judiciously taken) to regulate the feelings from which these actions proceed. So long as this plan (which is about as wise as that of the quack who tries to allay the symptoms of a disease, without either knowing or attempting to remove the cause) is commonly adopted, we cannot wonder at the frequent lack of success. Bad actions may be compared to the spray of the sea, which, from the commotion in the great abyss, rises to the surface; and every attempt to prevent the accumulation of the foam, so long as the waves below are heaving and swelling in their

rage, must needs be vain and futile. So until we arrive, by the aid of some system of mental philosophy, at correct conclusions as to the sources of human action, so long moral tuition must be a mere game of chance, which may or may not be successful. But with the assistance of such a system, we should be able to reach the root of the disease, and instead of castigating for bad actions when performed, should act upon the principle that "prevention is better than a cure," and apply ourselves sedulously to the cultivation of those powers which, when more fully developed, would render such actions of rare occurrence.

A third error is, that Moral education is generally confined to the mere inculcation of moral precepts and good advice; from which, if we only considered the matter, we could not reasonably expect good moral conduct, since these precepts are delivered (to use common, though incorrect language,) to the head and *not* to the heart; or in other words, if remembered at all, this is an intellectual operation, which produces no effect on the moral sentiments themselves. This is a fatal error; for if we wish our pupils' lives to be characterized by a supremacy of the moral powers, instead of trying to educate these by delivering mere advice and musty precepts, we should appeal directly to themselves, and call them into action as frequently as possible. Mr. Simpson well remarks: "As well may he rest contented with saying to the destitute, the hungry, and the naked, 'Be ye clothed and fed,' without offering them the actual means; as to our moral pupil, 'Be kind, compassionate, generous, just, and true,' without exercising them in these graces. An apprenticeship, a long apprenticeship, to justice and mercy, piety and benevolence, is essential to the practical exercise of these, as it is to skill in handicraft trades."

Daily experience, alas! shows that many a well-intentioned parent has to mourn over blighted hopes, and in bitterness of spirit is almost inclined to impugn the righteousness

of Providence, because a dearly beloved child, on whom the tenderest affections have been lavished, and who has probably been overwhelmed with good advice,—as soon as parental restraint is removed, breaks loose like some mad colt, and gallops heedlessly, he knows not where, plunging at once into the miry depths of vice and dissipation. Why is this? It is because his moral education has not been properly attended to; because his parents from ignorance of his moral powers, not knowing which required allaying, and which should have been stimulated to activity, confined their moral tuition to the inculcation of mere dogmas, which produced only a temporary impression on the intellect (not on the moral sentiments themselves), and then disappeared like the splash of a sinking stone, which soon subsides into a ripple, and ere long vanishes for ever."

We should always recollect that our moral powers of benevolence, conscientiousness, and so forth, in however feeble a degree they may be manifested, are (notwithstanding Locke argues to the contrary) all innate. Every one possesses them to a greater or less extent. Though they may not exert so powerful an influence upon the conduct as would be desired, they are still present in an embryo state at least, and the only way to educate or increase their development is to call them into exercise. If, therefore, benevolence does not form a proper constituent in the character of a child, instead of continually talking about the beauties of love and kindness, let him be familiarized with scenes of suffering, and enabled to prove from his own experience that "it is more blessed to give than to receive." Or, if conscientiousness be deficient, commit small matters to his trust, of which you require an account; while yet the mind is pliable and scarcely moulded, let him know for himself the sterling happiness of the peace and approbation of his conscience. This plan once adopted, would prevent much of the disappointment that wrinkles the cheek and whitens the locks of many an anxious parent.

Solomon seems fully to have understood this, when he said, not TEACH, but "TRAIN up a child in the way he should go, and when he is old, he will not depart from it." I need scarcely remark that there is a palpable difference between *Teaching* and *Training*.

A fourth and last error to be noticed in moral education is, that of rewarding good moral actions in children with applause or gifts, and visiting moral delinquency with corporeal punishment. If, for instance, a child meets our applause and a gift for an act of kindness or conscientiousness, instead of these feelings themselves being stimulated thereby, the gratification is afforded to his vanity, his praise, his selfishness, and perhaps some other of the inferior feelings; but none whatever to those higher and disinterested sentiments, whose exercise would soon show the happiness of doing good for its own sake.

But if rewards for good moral conduct are generally to be reprehended, the common plan of giving sweetmeats and delicacies is peculiarly objectionable. Not the only mischief arising from this, is merely the *training* up of children to be gluttons and epicures; which it must inevitably do by making the gratification of the palate of paramount importance: a still greater evil is to be dreaded,—the weakening of the moral sense, by supplying an unworthy and temporary motive to obedience, when a higher one alone can be adequate and permanent. An example taken from an excellent little work, entitled "The Education of the Feelings," may illustrate this. A lady is very anxious that her child should be religious (as every right thinking mother will be), and no pains are spared to make him so, as will appear from what follows. The boy, not four years old, was brought down to the dessert. In due time nurse came to take him to bed, when the following conversation took place. Mamma.—"Say your prayers, my darling." Boy.—"I wont." Mamma.—"Oh yes, now, BE good; show these ladies how prettily you can say your prayers." (Silent, pouting

lips.) Mamma.—"Come now, you don't know what grandmamma has for you." Boy.—"What?" Mamma.—"An orange." Grandmamma.—"There's Shamrock (the dog); now, make haste, or we'll get Shamrock to say pretty prayers." Mamma.—"Yes, my dear, now do, because of the orange, you know." Will it be believed that this chattering had the desired effect? Worked upon by greediness and vanity, he lisped the "Lord's Prayer" in a sulky, muttering tone, was called "a *good* boy," and went to bed, but without the orange. When he asked for it; "to-morrow" was the answer. Here were lessons in abundance;—here, in five minutes, were inculcated impressively, greediness, stupid surrender of the understanding, vanity, lying, and hypocrisy.

And now, on the propriety of punishments, happily I need not say much; for though some such places as "Dotheboys Hall," at the delightful village of Dotheboys, near Greta Bridge, in Yorkshire, may still exist, and some such tutors as "Mr. Squeers," its respected and respectable proprietor, may yet be living, these are generally supposed to be mere creatures of the imagination; or at least, even if they have existed, the march of intellect has already played the "*Dickens*" with them; and they are numbered among the things that have been. Suffice it to say that corporeal punishment almost invariably rouses into activity the worst of our passions—revenge and obstinacy; so that instead of conducing to the growth, it tends to the overcoming of our best and finest feelings. When a child has been flogged, it requires no microscope to perceive by the flushed cheek and knitted brow,—the angry look and sulky countenance,—that though by physical superiority the passions have been temporarily allayed, yet, like the sullen peace that precedes the thunderstorm, their quiescence will only be the harbinger of another, and more determined outburst.

And now, having adverted to these four prominent defects in Moral Tuition, as generally conducted, let us next take a

passing glance at Intellectual Education. But here let us bear in mind the definition given at the commencement of this paper, that education is the means adopted for the drawing out or developing of the various powers. I think we shall discover two paramount errors, first, the system generally used is by no means a judicious one; and, secondly, the information actually given, is not conveyed to the young in a palatable form.

First, respecting the system adopted. If we take a glance at any of our leading schools, especially at the endowed academies of our large towns, we find the pupils educated in the mass: that is, they are arranged in classes, —one peculiar mode of instruction is administered to all,— they are treated as though all their minds were of the same stamp, and all similarly gifted.

If this mode of treatment suit, all is well; but if the mind of one unfortunate youth be rather more obtuse than the rest, though he may be fully as gifted, yet if his talent be of a more practical and useful character than that which finds its level in exploring the antiquated absurdities of the heathen classics; like a miserable coach-horse he is trampled under foot, becoming the butt of his schoolfellows' taunts and sneers, and the victim of his master's displeasure.

I confess that this kind of treatment seems to me about as sensible as that of a medical practitioner, who, having arranged his patients in a row, whatever their complaints might be, would dose them indiscriminately with some universal medicine, and if it failed would never attempt any other remedy.

The Rev. Sidney Smith, who was compelled himself to drink deeply of classic lore, says, "At present we deal with the minds of our young men as the Dutch did with their exuberant spices. An infinite quantity of talent is annually destroyed in the Universities of England by the miserable jealousy and bitterness of ecclesiastical instructors. It is vain to say that we have produced great men under this

system. We have produced great men under all systems. Every Englishman who is sent to college, is compelled to spend half his life in learning Latin and Greek, and classical learning is supposed to have produced the talents which it was not able to extinguish. It is scarcely possible to prevent great men from rising up under any system of education, however bad. Teach men demonology or astrology, and you will still have a certain portion of original genius, in spite of these or any other branches of ignorance or folly."

But even supposing all youths to be equally gifted with talents for the dead languages, it must be borne in mind that school education is only intended to fit for future usefulness,—to aid in the development of those powers which are requisite for a successful personation of the character to be performed in the sober drama of life. The general system of education as at present conducted, viewed as a means to this end, is singularly defective; inasmuch as the languages only exercise a few of the intellectual powers, while the rest are sadly neglected: whereas, education, to be worthy of the name, should be a drawing out, a developing, an *ê-ducation* of every faculty which God has given us.

It may here, perhaps, be interesting to inquire how these studies of the dead languages, which now engross so much of the time devoted to education, were first introduced into schools. Mr. Combe, in his excellent lectures on this subject, presents us with the following history. "The Greeks and Romans were the earliest nations in Europe who attained to civilization: in other words, they were the first who so far cultivated their mental faculties, as to acquire numerous and tolerably precise ideas of government, laws, morals, intellectual philosophy, and the fine arts. In consequence of their minds possessing these ideas, their languages contained terms to express them. In the fourth and fifth centuries, the Roman empire was overrun by ignorant barbarians from the north of Europe, whose men-

tal powers, from not having been cultivated, had not reached the conceptions now alluded to, and their languages in consequence were as barren as their thoughts. A long night of darkness prevailed over Europe, until at length civilization again dawned where it had last set,—in Italy.

"The cities of that country, situated under a genial climate, and surrounded by a fertile soil, had, as early as the twelfth century, made considerable progress in arts and manufactures. Wealth flowed in upon them: this produced leisure and a desire for refined enjoyment, whence a taste for literature gradually arose. The manuscripts of Greece and Rome had long slumbered in the cells of monastic institutions, and many of them had been erased to give place to monkish legends; but now they were ardently disinterred. When recovered and understood, they were found to contain more sublime and elegant poetry,—more refined yet nervous eloquence,—more brilliant pointed and ingenious wit, with profounder and juster views in law, criticism, and philosophy, than had been known or heard of since the subversion of civilization; and all these treasures, too, embodied in languages so rich, discriminative, and refined, that Europe, in addition to this accession of knowledge, was at once furnished with exquisite vehicles of thought, without the labour of invention.

"In these circumstances, Greek and Latin naturally became objects of intense study, among all men who aspired to superior intelligence. There was great good sense in this direction of the mental energies; because at that time, and in their situation, these languages really unlocked to them the richest intellectual stores existing in the world, and put them in possession also of an instrument for communicating their thoughts, greatly surpassing in delicacy and power any that they could have obtained by their own invention, or found in the literature of their native countries. In this manner, and for these reasons, colleges, schools, and other institutions were established for teach-

ing and cultivating the Greek and Latin languages, and they obtained the appellation of "Literæ humaniores:" eminence in them became the passport to fame, and a person deeply conversant with them was dignified with the title of a learned man.

"In the course of time, however, the nations of Europe, aided by the invention of printing, and latterly by stupendous discoveries in science and the arts, as well as by the wide diffusion of Christianity among the people, far outstripped the Greeks and Romans in their most useful attainments. This change of circumstances has clearly altered the relative value and importance of Greek and Latin. There is now no *knowledge* relating to the physical and moral worlds, contained in these languages, which does not exist clearly expressed in English; and there is no mode of feeling or of thought subservient to the practical purposes of life, that may not be as forcibly and elegantly clothed in our native language as in them. Human institutions and practices, however, often long survive the causes that gave them birth; and from five to seven years of our lives in youth are still dedicated to the study of the learned languages, as if all their original importance remained."

Let us, however, briefly examine one or two of the arguments adduced at the present day in favour of the retention of the classics in schools. Some tell us that classical studies are a good means of disciplining the mind. This I candidly admit; but the question arises, may not other and more useful means be advantageously selected? For alas! as many a young man knows, (who during his school days derived much pleasure from them)—his acquaintance with the tragic verse of Sophocles,—the heroic poetry of Homer,—the intricate choruses of Euripides,—the nervous eloquence of Demosthenes,—the sound philosophy of Horace,—the piercing satire of Juvenal,—the impassioned appeals of Cicero,—and the drolleries of Ovid, and of Terence, is of little use in his transactions with this sordid and money-getting world.

Nay, when he embarks from the walls of his school or college on the stormy ocean of life, he feels, as it were, in a vast howling wilderness, and is painfully sensitive to the ungenial nature of the clime.

Many persons deem the classics deserving of study on account of the beauty of their poetry, and the elegance of their diction. But have we not a Milton of our own, whose muse was attuned to a loftier strain than was ever heard in a heathen land? Have we not a Shakspeare also, a Pope, a Byron, a Shelley, and a host of others of our own; each and all of whom are worthy a comparison with the most gifted poets of antiquity? Are they then read for their scientific information? Science, or at least inductive science (the only system worthy of the name), had its birth in Britain, and would therefore be sought in vain among the Greek and Roman classics. Do we, then, read them for their metaphysics? Shall a land that can boast of Bacon, Locke, Reid, and Stewart, go back two hundred years for its mental philosophy? Once again, are they studied for their morals? Shall we, who live under the meridian sun of Christianity, found our system of ethics on the malignity and revenge which run through every page of the Greek tragedians, or the ribaldries which stain the writings of Ovid and of Terence? We should always recollect that during youth, in our minds as well as in our bodies, a process of digestion and assimilation is constantly going on. How can the youthful mind which is occupied from day to day, and from year to year, in reading of the exploits of miscreant heroes, and sensual deities, emblazoned with all the splendours of poetry, possibly escape unhurt?

Seeing, then, that the waste of time incurred by us all in our infatuated devotion to classical learning is wholly indefensible, the question arises,—if classics are to be done away with, or made to collapse into their proper magnitude, what are we to learn in their stead? The answer is, that in the

time which is usually sacrificed at the shrine of the heathen writers, an acquaintance with many of the sciences might be gained, together with such a knowledge of men and things as would be highly useful in after-life. To the substitution of the knowledge of the ancient classics, for the higher information just spoken of, is to be attributed the sadly distorted view of things taken by many whose rank and office should entitle them to the highest respect; and may explain how a very intelligent clergyman came to imbibe the strange notion, which he recently expressed with the utmost gravity,—"that the sciences certainly are useful, but the classics much more so."

The *comparative* worthlessness of the dead languages did not escape the lynx-eye of the Bard of Scotland. Accordingly, we find him in one of his epistles to his friend Lapraik expressing his opinions on the subject with his usual bluntness, but with great severity, thus:—

"What's a' your jargon o' your schools,
Your latin names for horns and stools,
If honest nature made you fools,
What, sairs, your grammars?
Ye'd better ta'en up spades and shools,
Or knappin' hammers.

"A set o' dull, conceited hashes,
Confuse their brains in college classes;
They gang in sticks, and come out asses,
Plain truth to speak;
An' syne they think to climb Parnassus
By dint o' Greek."

The amiable Cowper, too, expresses the same opinions, though in a very different style, in his "Tiriconium, or Review of Schools." His poem is addressed to a parent, to whom he thus speaks:—

"And are you still content your son should find
No nourishment to feed his growing mind
But conjugated verbs and nouns declin'd?
For such is all the mental food purvey'd
By public hackneys in the schooling trade,

Who feed a pupil's intellect with store
Of syntax, truly, but with little more,
Dismiss their cares when they dismiss their flock,
Machines themselves, and governed by a clock.
Perhaps a father blessed with any brains,
Would deem it no abuse or waste of pains
To improve this diet at no great expense,
With sav'ry truth and wholesome common sense."

Then, after pointing the father to several branches of study which he would recommend, such as Astronomy, History, Biography, and Physiology, he concludes the matter thus:—

"Such knowledge gained betimes, and which appears,
Though solid, not too weighty for his years,
Sweet in itself, and not forbidding sport,
When health demands it, of athletic sort,
Would make him—what some lovely boys have been,
And more than one perhaps that I have seen—
An evidence and reprehension both
Of the mere schoolboy's lean and tardy growth."

Before concluding this part of the subject, I must also remark that female education is as defective in this respect as that of the male community. If we glance at the leading features of female education, we find that young ladies are generally taught, or at least are attempted to be taught, whatever their capabilities may be, music, drawing, French, and embroidery; which, with a knowledge, (in many cases a very superficial one,) of their own tongue, constitute nearly all the branches of a polite female education. The wish to acquire a knowledge of another and more fashionable language, to the comparative neglect of their own, seems to have been a feminine weakness from the earliest ages; for we find Juvenal in his Sixth Satire, that terrible *exposé* of the vices of the Roman females, censuring the ladies of his time for their preference of Greek to their own Latin language, thus:—

"Omnia Grecè,
Cum sit turpe magis nostris nescine Latinè,
Hoc sermone pavent, hoc iram, gaudia, curas,
Hoc cuncta effundunt animi secreta."

But as the quotation is long, I may be permitted to offer a free translation :—

> "In these our days by women, lo! all things are said in Greek,
> A knowledge of their native tongue, they'll scarcely deign to speak:
> In Greek their fear, in Greek their anger, joys, and cares impart,
> In Greek they even tell the very secrets of the heart."

But to return. In modern female education, surface knowledge, instead of solid information, is what is principally aimed at; and instead of the efforts of the governess being directed to the regulation,—the drawing out—the education of the faculties, empty accomplishments; which, like the glittering of the fire-flies, shine and dazzle to no useful purpose, are the sole objects of their ambition. Another objection too may be stated, which we have previously urged in regard to male education, viz., that it calls into exercise but *few* of the faculties, while the rest are left in a state of ignorance. If, which is the fact, women possess every faculty in common with ourselves, why should they not all be educated? Would they make worse members of society? Would they be less qualified to perform those duties which peculiarly devolve upon themselves? Would they make worse wives and mothers, were every faculty exercised? I trow not: for did not the Creator intend them to be used? Else why were they given? It is scarcely necessary to state, that the perverted taste and morbid appetite, evinced by the greater portion of our young ladies for the ephemeral productions with which our land is deluged, in the shape of romance and light literature, is not to be attributed to any constitutional defect or idiosyncracy; but is entirely owing to the improper system of education adopted in those coquette-manufactories, the fashionable boarding-schools, which leaves the reflective powers unexercised, until (sleep being the invariable consequence of starvation,) they sink into positive torpitude. But were a rational and proper system of education adopted, the higher and nobler faculties would be cultivated,—romances and tales would cease to

be thus greedily devoured,—the lustre of the female character would no longer be dimmed by that aversion to abstract study which it now evinces; and woman would be elevated to her proper standing of a help-meet for man. How much greater too would be her own happiness! The sciences, with their varied charms, would lie, like lovely valleys, outspread before her, and a number of other delightful avenues, to which she is now refused admission, would invite her steps; listlessness and ennui would be for ever banished, and, like the philosopher "who was never less alone than when in solitude," she would "find sermons in stones, tongues in trees, books in the streams and good in everything;" possessing within herself a mental casket of rare jewels, an overflowing fountain of amusement and true wisdom, which would profitably employ the leisure years of maidenhood, afford a pleasing source of recreation amid the household cares of maturer life, and when the infirmities of age encompass her about, would render her *well-trained mind*, like a venerable fabric—beautiful even in ruins—a temple of enjoyment to herself and to others.

The second and only remaining error to be noticed now in Intellectual Education, is that the information actually conveyed to the youthful mind, is not generally clothed in an attractive garb. On this subject, however, Dr. Dick expresses himself so well in his beautiful work on the "Philosophy of a Future State"—a book that will richly repay every one who peruses it—I cannot do better than close this subject by quoting his remarks.

"If the desire of knowledge appears, in many instances, to be less ardent in after-life, it is owing, in a great measure, to the methods of our education, and the false principles on which we attempt to convey instruction to the youthful mind.

"Our initiatory instructions, hitherto, present the young with little more than the *key* of knowledge instead of *know-*

ledge itself. We lead them to the threshold of the temple of science; without attempting to unfold its treasures. We deem it sufficient that they be taught to pronounce, like a number of puppets, a multitude of sounds and terms, to which they attach no distinct conceptions; while we decline to communicate clear and well defined ideas. We load their memories with technical phrases and propositions, which they do not understand; while the objects of substantial science are carefully concealed both from the eye of sense, and from the eye of the understanding. Instead of leading them by gentle steps in the first stage of their progress, over the grand and beautiful and variegated scenery of Nature and Revelation, where almost every object is calculated to arrest their attention, and to excite admiration; we confound them with an unintelligible jargon of grammar rules, of metaphysical subtleties, and of dead languages, associated with stripes, confinement, and painful recollections, which frequently produce a disgust at everything which has acquired the name of learning, before they are made acquainted with that in which true knowledge consists. Yet, notwithstanding the injudicious methods by which we attempt to train the youthful intellect, it is impossible to eradicate the desire of knowledge from the human mind. When substantial knowledge is presented to the mind in a judicious and alluring manner, it will not only be relished, but prosecuted with ardour, by every one whose faculties are not altogether immersed in the mire of sensuality. Let a man, however ignorant and untutored, be made acquainted with some of the interesting details of geography, with the wonders of the ocean, and the numerous rivers continually rolling into its abyss, with the lofty ranges of mountains which stretch along the continents, and project their summits beyond the clouds, with the volcanoes, the tornadoes, the water-spouts, and the sublime and beautiful landscapes which diversify the different climates of the earth, with the numerous tribes of animated

beings which people its surface, and the manners and customs of its human inhabitants ;—he will feel an eager desire to know everything else that appertains to this subject, and will prosecute his inquiries with avidity, so far as his means and opportunities permit. Acquaint him with some of the most striking facts in ancient and modern history; and he will feel a desire to know everything of importance that has occurred in the annals of the world, since the commencement of time. Unfold to him some of the discoveries, which have been made in relation to the constitution of the atmosphere, the electric, galvanic, and magnetic fluids, and the chemical changes and operations, that are constantly going on in the animal, vegetable, and mineral kingdoms; and his curiosity will be strongly excited to penetrate still further into the mysteries of nature.

Direct his gaze to the concave of the firmament, and tell him of the vast magnitude of the sun, and the planetary globes, the amazing velocity with which they run their destined rounds, and of the immense number and distances of the stars; and he will eagerly pant after more minute information respecting the great bodies of the universe, and feel delighted at hearing of new discoveries being made in the unexplored regions of creation.

"I never knew an instance," continues Dr. Dick, "in which knowledge of this description was communicated in a rational, distinct, and alluring form, where it was not received with a certain degree of pleasure, and with an ardent desire to make further investigations into the wonders of creating wisdom and power. Such appears to be the original constitution of the human mind, that it is necessarily gratified with everything that gives scope to the exercise of its faculties, and which has a tendency to extend the range of their action.

"It is true, indeed, that in some men, the desire of knowledge appears to be blunted and almost annihilated, so that they appear to be little superior in their views to the lower

orders of sensitive existence. But this happens only in those cases, where the intellectual faculties are benumbed and stupified by indolence and sensuality. Such persons do all they can to *counteract* the original propensities of their nature; and yet, even in the worst cases of this kind, that can occur, the original desire is never altogether extirpated, so long as the senses are qualified to perform their functions. For the most brutish man is never found entirely divested of the principle of curiosity, when any striking or extraordinary object is presented to his view. On such an occasion, the original principles of his constitution will be roused into action, and he will feel a certain degree of wonder and delight in common with other rational minds."

And now to conclude these remarks. Having expatiated on the system of rewards and punishments, under the head of moral education, I do not allude here to the incongruous idea of thrashing an intellectual capacity into a boy not naturally possessing it; but close by reminding you that four glaring defects have been pointed out in the present system of moral education: first, that it is generally conducted empirically, without any knowledge of the moral powers themselves; secondly, that bad actions are punished, while no pains are taken to regulate the feelings from which they proceed; thirdly, that moral tuition generally consists in the mere inculcation of precepts, instead of the exercise of the moral feelings themselves; and, fourthly, that the plan of rewards and punishments usually defeats its own end.

Two defects have also been pointed out in intellectual culture: first, that the course generally adopted, only exercises a few of the faculties to the neglect of the rest; and secondly, that the information conveyed to the mind, is too often clothed in an unattractive garb.

It must, however, be apparent to every one that all these errors, like the radii of a circle, converge to one point;—that all are branches proceeding from a common stock, the root

of which, will be found in the ignorance that is prevalent respecting the constitution of the mind.

To the partial diminution of this ignorance, by the increased diffusion of correct views of mental philosophy, is to be chiefly attributed any amelioration that may have recently taken place in the system of education; and for the still more general diffusion of these views, must we wait, before all these errors will be entirely chased away.

9*th January*, 1841.

LECTURE V.

ON THE SENSE OF THE LUDICROUS.

THE most superficial observer of human nature cannot fail to have noticed that every mind, not absolutely idiotic, has implanted within it a keen relish for the ludicrous; and the slightest consideration will be sufficient to convince us, that there is in the world a variety of objects, ideas, relations, and circumstances, which seem calculated to afford it legitimate gratification. The emotion or sentiment of "ludicrousness," as it has been not inaptly termed by the metaphysicians, belongs exclusively to man; who, notwithstanding his familiarity with grief, has been well called "a laughing animal;" as though, which indeed is the fact, the ability to laugh, constituted one of the features by which he is distinguished from the lower orders of creation. Laughter is never met with among the brutes, not even in that caricature of humanity, the monkey. The inferior animals are doubtless susceptible of delight, which may frequently be traced even in their countenances; as, for example, in the dog, who as he wags his tail, and gazes wistfully in his master's face, may almost be said to smile; but there is a wide difference between mere emotions of pleasure and the peculiar emotions excited by the ludicrous,—between a mere

smile of delight and the genuine, hearty, side-shaking laugh, the latter of which is man's sole prerogative.

Not, however, that laughter can only be caused by a perception of the ludicrous; we may laugh, as we may cry, from a variety of causes. A child will laugh at a brass button, an acquisitive boy when you give him a halfpenny, and hysterical patients laugh and cry alternately, yet none will affirm that their laughter, has its rise in the ludicrous, although this is its most general source. Ludicrousness is a feeling which every man possesses; and in our intercourse with the world, however unpropitious our journey through life may be; we constantly meet with occurrences, objects, ideas, and relations, from which this feeling derives gratification. An examination, and attempt at classification of these, will form the subject of the present paper.

But I will first observe that the fact of the Great Author of our being having implanted such a sentiment within us, and having also provided for its abundant gratification, appears clearly to indicate that man never was intended to be that funereal, lugubrious personage, which some would represent him; that while habitual levity and untimely gaiety are decidedly reprehensible, still, even in this chequered scene there are some bright spots where mirth and pleasantry may be innocently enjoyed. This world's atmosphere may be gloomy, yet many a gleam of sunshine flits across it; earth may be a stage on which the sober drama is more frequently performed, yet many a comic interlude comes before our eyes, when we are not forbidden to laugh. Dr. Thomas Brown observes, "If our serious concerns were alone to be regarded, we might often have been very fortunate and very unhappy, as in other circumstances we might often have had much happiness in the hours and days of by-gone years, which terminated at last in the disappointment of some favourite scheme. It is good to travel with pure air and cheerful sunshine,

though we should not find at the end of our journey the friend we wished to see; and the gaieties of social converse, though they are not in our journey of life what we travel to obtain, are, during the continuance of our journey, at once a freshness which we breathe, and a light that gives to every object to sparkle in our eye with a radiance not its own."

There are various opinions among philosophers as to the nature of this sentiment or emotion. Hobbes defines laughter to be "a sudden glory, arising from a sudden conception of some eminency in ourselves, by comparison with the infirmity of others, or with our own formerly." But a very slight examination of this definition will be sufficient to discover its utter erroneousness; for we laugh as readily at some brilliant conception of wit, where there are no infirmities of others displayed, as where they are displayed in any awkward blunder. If any theory which converts our feeling of the ludicrous into a proud comparison of ourselves with others were just, it would follow that a man who was very self-conceited and supercilious would be peculiarly prone to mirth: when, on the contrary, it happens that of children, and persons in advanced life, those whose temper is most social, are the most readily disposed to laughter; while the proud, to whom their own superiority most readily occurs, are usually very little disposed to merriment. The mere stupidity of any one, when there is no vanity of pretension to contrast with it, does not make us laugh, yet if laughter arose from the mere triumph of personal superiority, there would surely in this case be equal reason for selfish exultation, and a company of blockheads should be the gayest of all society.

Dr. Thomas Brown considers laughter to be "a mixed feeling of astonishment and delight;" but this explanation is in nowise satisfactory, since we may be both astonished and delighted without feeling any inclination to laugh.

Mr. Hewett Watson thinks that the "ludicrous is an emotion or mode of action, somewhat similar to perception and memory, common to all the Intellectual Faculties." And others, as Gall, Spurzheim, and George Combe, hold the opinion that we have an original principle in our nature, connected, like all the other original powers, with a separate and independent organ, whose especial function it is, to view things in the light of the ludicrous, and to which they gave the name of gaiety or mirthfulness. Gall, moreover, having found that in the masks of Lucian, Rabelais, Cervantes, Racine, Pirou, Sterne, Voltaire, and several others renowned for wit, the anterior (*i.e.* superior) lateral parts of the forehead were very prominently developed, fancied that this might be the organ in question. Dr. Spurzheim and Mr. Combe agreed with Dr. Gall; but the function of the part was never considered decided, and on extending their observations, Phrenologists discovered many facts to militate against the doctrine; the portion of brain in question having been only moderately developed in the heads of Curran, Sheridan, Foote, and others who had the character of wits. These were duly registered by Phrenologists, who always welcome facts, wheresoever they may be found, and whatsoever may be their tendency; and they have led to the conclusion that whether there be such an innate sentiment or not, this is certainly not the function of that part of the brain which has been called the organ of Wit or Gaiety. To express my own opinion, I would say that ludicrousness is a simple, not a compound, emotion; though the precise locality of its organ has not been ascertained.

But dismissing the question whether ludicrousness be, as Hobbes says, "the result of a proud comparison of ourselves and others;" or, as Dr. Brown supposes, "a mixed feeling of astonishment and delight;" or, as Mr. Watson argues, "a mode of action of all the intellectual powers;" or, as Gall and Spurzheim imagine, "an original ingredient in our

mental constitution;" it is sufficient for our purpose this evening to know that all of us possess it: and therefore we proceed at once to our immediate subject,—an examination of the various ideas, relations, and circumstances, which minister to its gratification. These, I think, may be referred to two grand classes: firstly, those in which we unexpectedly discover congruity amid incongruity; and secondly, the converse of these, where we suddenly detect incongruity amid congruity. But it may be well first to examine the varieties in detail, and then, to refer them to these two principal classes.

The first source of ludicrousness to which I will direct your attention is Wit; the meaning of which every one understands, and yet no term is more difficult to explain. One source of this difficulty is the obscurity of the derivation of the word, and consequently the necessity of using it in an arbitrary, or at best, in its conventional, signification. On referring to the classical languages, we have no further light on the subject; the Latin "sales" bearing reference to it merely as an ingredient in satire; and the Greek "*ευτραπελια*" (from "*ευ*" well, and "*τρεπομαι*" to accommodate one's self) being very expressive, but in no wise elucidatory. Another cause of the difficulty is the variety of phases, which this chameleon of the mind assumes. At one time we find it dancing and sparkling through the pages of a pleasant author, or enlivening the good-humoured sallies of an agreeable friend; at another, standing forth in bold relief in the skilful caricature; and again, spiced with ill-nature, infusing all its bitterness into a strain of ironry, barbing and feathering the arrows of ridicule, and furnishing the sting to the most piercing satire. But, however difficult, it is requisite before advancing further, to arrive at some conclusion respecting the nature of Wit. The most witty definition ever yet given, was that by Dr. Henniker, who on being asked by the late Earl of Chatham to define wit, answered, "Wit, my Lord, is like what a pension would be, given by your

Lordship to your humble servant, '*a good thing well applied.*'"

"The authority of the metaphysicians tends to support the idea that the talent for perceiving resemblances is distinct from that which discriminates differences. Malebranche observes that, 'There are geniuses of two sorts:—the one remarks easily the differences existing between objects, and these are the excellent geniuses; the others imagine and suppose resemblances between things, and these are the superficial minds.' Lord Bacon also says, that 'the chief and as it were radical distinction betwixt minds, in regard to philosophy and science, is this: that some minds have greater power, and are more fitted for the observation of differences, others for the observation of the resemblance of things.'"—Combe.

Lord Kames defines wit to be "an intellectual perception of difference, of incongruity amid congruity;" a definition which I think will appear erroneous when we examine a few witticisms. Locke takes the directly opposite view, and says, "This is one of the operations that the mind may reflect on, and observe in itself;" and that it lies "most in the assemblage of ideas, and putting them together with quickness and variety, wherein can be found any resemblance or congruity, thereby to make up pleasant pictures and agreeable visions in the fancy." He also says "it is a kind of affront to go about to examine it by the severe rules of truth and reason, whereby it appears that it consists in something not conformable to them." Locke's views are carried out by Mr. Rumball in an ingenious paper in the "Phrenological Journal," where he defines wit to be the "discovery of a resemblance in things essentially different." Dr. Thomas Brown does not offer a definition at all.

To the view taken by Locke, and carried out by Mr. Rumball, we shall be prepared, to a certain extent, to agree, inasmuch as there is no wit without the discovery of unexpected congruity; but unfortunately for the definition, if

given in the shape of a logical proposition, there may be the discovery of unexpected congruity without wit. In scientific discoveries this is frequently the case. When Mr. Faraday found that Magnetism and Electricity were identical, and when Geologists discovered the identity of trap-rocks with volcanic lava, an unexpected congruity was discovered among things which had always been considered essentially different; yet though we may have been astonished, few felt any tendency to laugh. "Why then do we not laugh in such a case at the discovery of the resemblance of objects or qualities, which were before regarded by us as not less incongruous than any of the unsuspected relations which are exhibited in the quaintest conundrum, that excites our laughter almost at the very instant in which the strange relation is pointed out?" To this question Dr. Brown judiciously replies, "The principal reason of this difference is the importance of the physical relation. The interest attached by us to the discovery of truth, occupies the mind too seriously, to allow that light play of thought, which is essential to the rise of the gay emotion."

This theory, too, if applied in an unqualified manner—even to the mental manifestations, would be productive of very great confusion; for "every metaphor, simile, and comparison implies some unexpected relation presented to the mind, and in many cases, a relation of objects which were before regarded as having no congruity whatever; and therefore it may be urged that the figures in all such cases should be felt as ludicrous." This objection Mr. Rumball appears to have anticipated; so by way of evasion, he defines comparison to be the converse of wit, viz., the detection of difference in things essentially similar: which he illustrates thus,—"If I go into a painter's studio, and he asks my opinion of a copy from an old master, which he has just finished; I say, 'let me compare them,' and if I find no essential departure from the original in form, size, or colouring, I give my commen-

dation. So, if he has painted the portrait of a friend, 'Do you think it like?' will be his question. I set about to compare it with my conception of my friend's countenance, and judge accordingly. Now it is abundantly evident that a hasty observation, or a furtive glance, would be satisfied with the resemblance in both these instances, and so pronounce; but wishing, as Locke says, to nicely distinguish one thing from another, when there is the least difference, I accurately compare them, and so form a judgment, not likely to be misled by similitude, and by affinity to take one thing for another. I think it clear," Mr. Rumball goes on to say, "that the use of comparison is to detect incongruity when congruity appears, and that it is essential to a right judgment." This, however, seems far from clear; for however plausible it may appear in the illustrations given, if we take another or two, its fallacy will immediately be obvious. When, for instance, I compare a stupid man to an ass, or a clownish fellow to a bear, few would give me credit for a display of wit: these are, in every sense of the word, comparisons; yet where is the difference so unexpectedly discovered? So in poetical comparisons, take the following from Goldsmith:—

"Hope, like the glimmering taper's light,
Adorns and cheers the way,
And still as darker grows the night,
Emits a brighter ray."

Or these illustrations from Moore:—

"The heart, like a tendril, accustomed to cling,
Let it grow where it will, cannot flourish alone;
But will lean to the nearest and loveliest thing
It can twine with itself, and make closely its own."

Again:—

"Oh! the heart that has truly loved, never forgets,
But as truly loves on to the close;
As the sun-flower turns to her god when he sets,
The same look that she turned when he rose."

Again, speaking of music's power to awaken the memory, he says :—

"Like the gale which sighs along
Beds of oriental flowers,
Is the grateful breath of song
That once was heard in happier hours.
Filled with balm, the gale sighs on,
When the flowers have sunk in death,
So when pleasure's dream is gone,
Its memory lives in music's breath."

Once again, on the pains of memory, he observes :—

"When I remember all
The friends so linked together
I've seen around me fall,
Like leaves in wintry weather;
I feel like one who treads alone
Some banquet-hall deserted,
Whose lights are fled, whose garland's dead,
And all but he departed."

Now in each of these cases, not incongruity, but unexpected congruity is discovered: none will say that hope and a taper, the affections and a creeping plant or a sunflower, music and a breeze, &c., are in themselves essentially similar, yet the poet's eye discovers a resemblance as unexpected as it is touching; which, however, cannot be denominated wit, but which may with justice be called an exquisitely beautiful comparison.

Wit may with propriety be divided into two kinds: firstly, that in which the congruity discovered, exists merely in the sound of words, as in the case of puns; and 2ndly, when the unexpected congruity is found in the thoughts, images, or objects which the language expresses, and not in the language itself. The best plan to detect the difference is to translate the sentence into another language: if the wit be in the idea it will be as apparent in another tongue; but if it be merely a pun, it will be entirely lost. As examples of

wit, I may quote one or two well known passages from Hudibras. Take the famous simile:—

> "When, as a lobster boiled, the morn
> From black to red began to turn."

Now in this case, it is not any expected difference, but the reverse, the sudden congruity discovered between things so essentially different; so extravagantly unlike, as a boiling lobster and the glorious dawn of day, that constitutes the wit.

Again, the excellent illustration of honour:—

> "Honour is like that glassy bubble
> Which cost philosophers such trouble,
> That, one part cracked, the whole doth fly."

So far is merely a comparison. Though resemblance has been discovered between honour and a bit of glass, there is no tendency to smile; now comes the wit, or rather pun:—

> "And wits are *cracked* to find out why."

In these illustrations we perceive the difference between wit, properly so called, and punning. The first passage would not at all suffer from translation; while the last, all the congruity being in the sound of the word "cracked," would be entirely lost. When a gentleman remarked to Curran, on hearing a woman call something a "curosity," "How that woman murders the king's English," and the wit replied, "No, she only knocks out one of its eyes (i);" the remark and reply both trace minute resemblance in things essentially different, and a laugh is the consequence. All conundrums embody some degree of wit in their mode of interrogation, and the amount of it seems to depend on the difficulty with which it is detectable. "Why is a man up stairs beating his wife, like a good man?"—"Because he is *above* doing a bad action." "What is a lover?"—"One, who in endeavouring to gain possession of another, loses possession of himself." Here not only are the facts

dissimilar, but the very words "above" and "possession" assimilate only in sound. The resemblance is scarce detectable; but when discovered, is readily allowed.

Few happier specimens of wit can be quoted than Sydney Smith's remark on seeing Lord Brougham's carriage pass. Observing the letter "B" underneath the coat of arms: "There goes a carriage," said the Reverend wit, "with a B outside and a wasp in." In the congruity suddenly discovered between the letter and a bee, and between Lord Brougham and a wasp, consists the wit.

Again, in a serious conversation I once heard on the nature of insanity, a gentleman very gravely remarked, that "he thought it had escaped the notice of the medical world, that insanity appeared to be very common among fleas." On being asked his grounds for coming to so strange a conclusion, he said, he had been "led to suppose so from the fact, that many of them die *cracked*." Here a point of similarity is suddenly discovered between an executed flea and a deranged intellect, and a smile is the consequence.

Once again:—as three drunken Irishmen were reeling along the banks of the Liffey, loudly extolling the virtues of whiskey; one of them remarked, that it was "meat and drink to a man," when his foot slipped and he fell into the river; on which one of his companions exclaimed, "Ah! Pat, ye're well off now, you had meat and drink, and now you've got washing and lodging." This, like all other specimens, derives what wit it possesses from the sudden congruity discovered.

In the following passage from Sheridan, all the ludicrousness arises from the same source, though it can scarcely be dignified by the name of wit. Speaking of a woman and her husband, he says:—"Her fat arms are strangled with bracelets, which belt them like corded brawn. You wish to draw her out, as you would an opera-glass. A long lean man, with all his arms rambling; no way to reduce him to compass, unless you could double him up like a

pocket-rule. With his arms spread, he'd lie on the bed of Ware, like a cross on a Good Friday bun. If he stands cross-legged, he looks like a Caduceus. Put him in a fencing attitude, you would take him for a chevaux-de-frise: to make any use of him, it must be as a spontoon or a fishing-rod. When his wife's by, he follows like a note of admiration. See them together,—one's a mast and the other all hulk; she's a dome and he's built like a glass-house: when they part, you wonder to see the steeple separate from the chancel; and were they to embrace, he must hang round her neck like a skein of thread on a lace-maker's bolster: to sing her praise you should choose a rondeau, and to celebrate him you must write all alexandrines." Now in this odd passage, consisting of incongruous comparisons, which can scarcely be called wit, the unexpected discovery of congruity is the source of the ludicrousness; so in the Wellerisms, Sam Slickisms, &c., which so often provoke a laugh, but which, like the above, have no claims to the title of wit. Also take the following witticisms on Phrenological terms. Philoprogenitiveness: "What blessings children are!" as the clerk said when he took the fees for christening them. Love of approbation: "We've come off with flying colours," as the ensign said when he ran away from the enemy. Self-esteem: "Industry must prosper," as the pickpocket said when he stole three handkerchiefs before breakfast. Conscientiousness: "I shall prevent the use of ardent spirits," as the innkeeper said when he watered the liquors. Ideality: "I'll banquet on the smiles of love," as the hungry poet said when he thought of his mistress at dinner-time. Individuality: "That's a personal remark," as the prisoner said when the judge told him to hold up his right hand. Order: "First come first served," as the snare said to the rabbit. In each of these examples, though perhaps none can be called genuine wit; the ludicrousness is derived from the congruity so suddenly and unexpectedly discovered. But it is not only in words that wit may be found and enjoyed,

it is as keenly relished when found in the clever designs of a Seymour or a Cruikshank. "Locke on the Human Understanding,"—caricatured by a wretched fellow, with his feet in the stocks, is a display of genuine wit; as well as Mr. Wallis' picture of the "Fall of Napoleon,"—where a drunken English soldier upsets the image of Buonaparte. In each of these cases, if we smile at all, we smile at the resemblance so unexpectedly discovered.

Before passing from the consideration of wit, I may just notice that what is called "alliteration" in verse, particularly the lighter kinds of verse, partakes, to a certain extent, of the nature of punning, and occasionally gives rise to the ludicrous emotion. A few examples will suffice:

"But thousands die, without or this or that;
Die and endow a college—or a cat."

"Fill but his purse, our poet's work is done
Alike to him by pathos—or by pun."

"Or her whose life the church and scandal share;
For ever in a passion—or a prayer."

In these lines of Pope it is impossible not to feel the force of the alliteration, and the additional prominence and sharpness which it seems to give to every point of thought and expression. But alliteration loses its charm immediately, if any effort or labour to secure it is betrayed. Dr. T. Brown informs us, that there is a Latin poem of some hundred lines, in regular hexameter verse, the "Pugna Porcorum, per Publium Porcium, Poetam," in which there is not a single word that does not begin with the letter P. But what pleasure does this foolish ingenuity afford, and who is there with sufficient patience to read the whole of it aloud? I will quote a few lines, as much as you will wish for, in which the Proconsul Pocorum endeavours to win over the younger pigs to peace:

"Propterea properans proconsul, poplite prono,
Præcipitem plebem, pro patrum pace poposcit
Persta paulisper, pubes preciosa! precamur.
Pensa profectum parvum pugnæ peragendæ, &c."

"This," says the Doctor, "is the very vaulting, and tumbling, and rope-dancing of poetry." A similar poem was addressed to Charles the Bald, of which every word, in compliment to the monarch, began with his own initial C. So various in all ages have been these "difficiles nugæ," this "labor ineptiarum," as Martial says that poems have been written deriving their principal, often their only recommendation, from the very opposite quality to that which has conferred so unenviable an immortality on the "Pugna Porcorum." The labour of their authors was not to repeat, but to exclude altogether a particular letter, on which account they were termed "Leipogrammatists." Thus we hear of a Greek Iliad, from the first-book of which Alpha was excluded; from the second the letter Beta, and so on through the whole. The same kind of laborious trifling, according to the traveller Chardin, appears to have prevailed in Persia. One of the so-called poets of that country had the honour of reading to his sovereign a poem, in which the letter A was not admitted. The king, tired of listening, probably with good reason, returned the poet thanks, and expressed his great approbation of the omission of the letter A; but added that the poem would, in his opinion, have been better still if, at the same time, all the letters of the alphabet had been omitted.

I will now pass from the consideration of wit to that of a second source of ludicrousness, which will be found in those relations where "objects are brought together that are noble and mean; or the forms of language commonly employed in treating subjects high and low, are transferred from one to the other." Such a transfer gives rise in the one case to the burlesque,—in which objects, noble in themselves, are made ridiculous by the meanness of phrases and figures;—in the other case to the mock heroic, in which, by a contrary process, the mean is rendered ridiculous, by the magnificent trappings of rhetoric with which it is invested.

"In these instances of artificial combination of the very

great and the very little, there can be no question as to the ludicrousness of the emotion, which such piebald dignity excites. There are circumstances which occur in nature exactly of the same kind, and therefore are productive of the same emotion; the incongruities being not in mere thought and image, but in objects directly perceived. When any well-dressed person, walking along the street, falls into the mud of some splashy gutter, the situation and the dirt, when combined with the character and appearance of the unfortunate stumbler, form a sort of natural burlesque or mock-heroic, in which there is a mixture of the noble and the mean, as much as in any of the works of art to which those names are given. He who amuses us by his fall, is in truth, for the moment, an unintentional buffoon, performing for us unwillingly what the buffoon with his stately strut, and paper crown, and other trappings of mock royalty, strives to imitate with less effect."

From the same source arises the ludicrous emotion when we behold some votary of Bacchus, in a state of happy and philosophical indifference to the frowns or smiles of those around, fondly embracing some friendly lamp-post, or with the most profound humility lying prostrate in a gutter, or, seized with a peculiarly oscillating motion, describing angles, curves, and circles, as though working mathematical problems in the street.

Under this head also mimicry should be arranged as well as humour, which differs from wit, in that humour chiefly relates to the manner, the mock gravity, the serious exterior, while the most ludicrous ideas are passing through the mind:—wit relates solely to the ideas themselves, and not at all to the manner of the speaker. The humour of Grimaldi was buried with his bones, but the wit of Horace and of Juvenal, is as fresh and pleasant now as it was two thousand years ago.

A third class of relations which are ludicrous, are "those which derive their ludicrousness, not from the objects them-

selves, but from the mind of the hearer or reader, which has been led to expect something very different from what is presented to it." In these cases we laugh chiefly because we expected a very different answer, and the incongruity which is felt has relation, therefore, to our own state of mind more than to the question itself. It is this previous anticipation of an answer, with which the answer actually received is incongruous, that forms the principal delight of many of the bon-mots of conversation, or at least aids their effect very powerfully. That these relations are a something totally distinct from wit, though fully as influential, in exciting the ludicrous emotions, a few brief examples will readily prove. Take the following:—There is a story of a Nottinghamshire publican, Littlejohn by name, who put up the figure of Robin Hood for a sign, with the following lines below it:—

> "All ye that relish all that's good,
> Come in and drink with Robin Hood;
> If Robin Hood is not at home,
> Come in, and drink with Littlejohn."

This is genuine wit; but Mr. Littlejohn having died, his successor thought it a pity to lose so capital a sign, and so much excellent poetry, and accordingly retained both: only erasing his predecessor's name, he substituted his own in its place. The lines then ran thus:—

> "All ye that relish all that's good,
> Come in and drink with Robin Hood;
> If Robin Hood is not at home,
> Come in, and drink with—Samuel Johnson."

The whole wit is now gone. In like manner, when a servant let a tongue fall from a plate, and a gentleman at the table said, "Oh! never mind, it's a mere lapsus linguæ," there was genuine wit in the remark; but when another servant let fall a shoulder of mutton, and thought to get off by calling this accident too a "lapsus linguæ," the whole wit was extinguished, but laughter most irresistibly pro-

voked. The wit in the first instances consisted in the congruity suddenly discovered between the publican and the renowned Littlejohn; and between the fall of a tongue and a lapsus linguæ:—but the laughter in the second arises, solely from our minds having been prepared for something very different from what is presented to them.

So again in the impromptu on a fat gentleman in Oxford,—

> "When T. walks the streets, the paviours cry
> 'Heaven bless you, sir!' and lay their rammers by."

And in the following definition of a doctor: "A doctor is a man whom we hire to tell idle stories in the chamber of a sick person, until nature effects a cure, or his medicine kills the patient." And in these sharp retorts:—"As a late professor was walking near Edinburgh, he met one of those beings usually called fools, and accosted him thus, Pray how long can a person live without brains? I dinna ken, replied the fellow, scratching his head; pray, how long hae ye lived yoursel, Sir?" Once more, "A physician passing by a stonemason's, bawled out to him, Good morning, Mr. W., hard at work, I see; you finish your gravestones as far as 'In memory of,' and then you wait, I suppose, to see who wants a monument next?" "Why, yes," replied the old man, resting on his mallet, "unless somebody is sick, and you are doctoring him, and then I keep straight on." The ludicrousness arising from unexpected answers may, however, be better illustrated by the replies of shrewd witnesses, when undergoing severe cross-examinations in our legal courts, than by any of the instances yet given. When, for instance, Jeffries was at the bar, he called out to a witness, "Hark you, you fellow in the leathern doublet, what have you for swearing?" to which the countryman smartly replied, "Faith, Sir, if you had no more for lying than I have for swearing, you might e'en wear a leathern doublet too." Again, at a late assize, a witness was asked by Baron Platt,

"Did you come to Maidstone this morning, on your oath?" "No, Sir," replied the man, "I came on horseback."

Most of the absence of mind tales and Jonathanisms should also be arranged under this division, their ludicrousness seeming chiefly to consist in the unexpected termination of the stories. "Nor is our feeling of ludicrousness less, when our previous anticipations have been disappointed by agreement." Who, for instance, can suppress a smile when they hear of a legal firm which once existed, the singularly appropriate names of which were "I. Catchem and U. Cheetham," or of two coach proprietors now living in Liverpool, of the names of "Pickup and Welfare;" or at, what I know to be a fact, a Captain Bacon prosecuting a private of the name of Hogg, for robbing him of a piece of pork.

In what are termed the cross-readings of newspapers, there is little agreement to sense to be expected, and we smile accordingly at the strange congruities which such readings sometimes discover. The following may serve as illustrations :—

"This morning, the right honorable the Speaker
Was convicted of keeping a disorderly house."

"A certain commoner will be created a peer,
N.B. No greater reward will be offered."

"It is said the Ministry is to be new modelled,
The repairs of which will cost the public a large sum annually."

"This has occasioned a cabinet council to be held
At Batty's fruit-shop in St. James's Street."

"This morning will be married, the Lord Viscount,
And afterwards hung in chains pursuant to his sentence."

The fourth and only other class of relations to which I will direct your attention, is that which derives its ludicrousness from our consideration of the mind of the speaker, or writer, or performer of the action. When our mirth is excited by any awkward effort, for example, we laugh because

we are aware of that which the effort was intended to perform, and are struck with the contrast of the performance of it. We laugh, in short, at the awkward failure, not at the motion or attitude itself considered simply, and without relation to some higher end; and we laugh at the failure, because we compare the awkward result with the grace which was intended, or which at least we imagine to have been intended.

Another set of examples under this division are those which "are commonly termed bulls or blunders; in which there is no ludicrousness unless we are able to distinguish what the speaker meant, and thus to discover some strange agreement of his real meaning, with that opposite or contradictory one which the words convey. A bull must be genuine, or for the moment supposed to be genuine, in order to divert with its incongruity." One or two examples may be cited:—

The first printed article of a new Burial Society in Manchester ran thus, "Whereas many persons find it difficult to bury themselves, &c." Again, when Lord Eldon brought in his bill for abridging the liberty of the press, a member (an Irish one, I should presume,) moved as an amendment, "That every anonymous work should have the author's name printed at full length on the title-page." Again, an Irishman being asked what he meant by the word coffin, said, "A coffin is the house that a dead man lives in." Again, an Irish officer, when giving out muskets to his men, said, "All you that are without arms, lift up your hands." Once again, a merchant who died suddenly, left in his bureau an epistle to one of his correspondents, which he had not sealed. His sagacious clerk, seeing it necessary to send the letter, wrote at the bottom, "Since writing the above I have died." Now in each of these, the ludicrousness consists in the incongruity of the expressions when we consider the end desired. The same observation will apply to the two following epitaphs, which have abundant internal

evidence of their Hibernian origin. The first, which is in Chichester churchyard, runs thus :—

"Here lies the body of John, the only *surviving* son of John and Mary Thomson."

The other, which is still more strange, is said to be at Wrexham :—

"Here lie two children dear,
The one at Oswestry;—the other here."

Not to detain you with more examples, having now examined the four species of circumstances, ideas, and relations, which excite the feeling of the ludicrous, I think, as was stated at the commencement, that these may be referred to two principal genera: 1st, those in which congruity is unexpectedly found amid incongruity; and 2ndly, the converse of this, where incongruity is discovered while congruity was expected. The first subdivision Wit, including puns, epigrams, alliterations, Wellerisms, parodies, and caricatures, was referred to the first genus, where a resemblance is discovered among things essentially different. The second species, where the noble and mean are mixed together, comprehending humour, mimicry, burlesque, and mock-heroic, belongs partly to both, deriving all its ludicrousness from the strange mass of incongruities which it presents to the eye. The third species may also be referred partly to both, the unexpected answers being sometimes singularly congruous, and sometimes the reverse. While the fourth belongs to the second class, the incongruity of the blunder, affording a laughable contrast with the congruity of everything else. Not, however, that this classification is as perfect as might be desired, far from it; it has only been adopted for the more convenient arrangement of the phenomena to be examined.

It may, I am aware, be urged that the subject to which your attention has been called, is rather a singular one to be discussed by a society like the present; but the appre-

ciation of the ludicrous was not considered too trifling an ingredient in our nature, to be examined by Lord Kames, Locke, and Dr. Brown: and it is well, perhaps, sometimes to pass by the deeper and graver subjects of discussion, to give play to the lighter and more mirthful emotions. All will consider the subject deserving of attention, who recollect what has been accomplished by the world's dread laugh,—that almost omnipotent agent which the stoutest philosophy has not always been able to scorn, and which, by being exercised on measures inherently excellent, has been too frequently a powerful auxiliary to bigotry and persecution. And if the numerous witticisms examined seem scarcely consonant with our gravity as philosophers, I would suggest that a discussion of the ludicrous, without examples and illustrations, would have been too dry and abstruse even for a philosophical society.

March 27, 1841.

LECTURE VI.

PHRENOLOGY IN RELATION TO RELIGION.

THOUGH opposition, and frequently persecution, are the fate of new discoveries generally, few subjects have encountered such persevering hostility as Phrenology. When, in 1796, its principles were first made known by its illustrious parent, Gall, bigotry and intolerance upreared their fronts before it; and Germany, instead of exulting in the mighty genius of her offspring, and weaving an Amaranthus chaplet for his brow,—finding her imperial edicts insufficient to quell the invincible moral courage that animated his breast, afforded another proof that "a prophet hath no honour in his own country,"—and, consigning him to the felon's doom, compelled him to seek in the bosom of a strange land, that asylum which was denied him in his own. But amid the storm raised by his discoveries, Gall himself stood unmoved, having the testimony of a "good conscience," that he was suffering for truth's sake; and with the calmness of a philosopher and the dignity of a man, quietly replied, in spite of the imperial anathemas, "This is truth, though opposed to the philosophy of ages;" and willingly resigning practice, country, kindred, home, rather than be that greatest of all slaves, a slave in mind, betook himself to the

neighbouring capital of France, where greater latitude of thought was permitted.

In France, his place of exile, he hesitated not to promulgate the new philosophy. He was there joined in 1804 by Dr. Spurzheim, his friend and former pupil, who not only enriched Phrenology with some valuable observations of his own, but formed the comparatively isolated and disjointed discoveries of Gall into an harmonious system, which he introduced into England in 1816. And how was it received here? We had no tyrant on the throne whose dictum could prevent the fullest and freest investigation of a purely scientific question: this was emphatically the land of science and of liberty, of free thought, and of what the English are in the habit of boasting as the "Palladium of their liberties," a free press; this, then, was the very spot in which one would have thought that such a subject would have met with a fair and dispassionate examination. But it was not so. Its reception, here was very similar to that with which it had been honoured in Germany. Here the popular cry was "Down with it!" Authority denounced it as trash; talent despised it; religion branded it as heretical and atheistic; and ignorance raised its insignificant head, and treated it with derision.

But the earth did not cease to move mysteriously on its silent course around the solar centre, guided by a hidden hand, unerring though unseen, on account of Galileo's cruel incarceration: nor the blood to roll its crimson tide through valves, and veins, and arteries, dispensing health and nutriment to every portion of the body, though Harvey for announcing the fact lost his practice: nor the host of sparkling orbs that glitter in the midnight sky to be held in their respective places, poised in vacuity, by the incomprehensible power of gravitation, though for more than fifty years, the University of Oxford refused to recognize the truth of Sir Isaac Newton's discovery: nor printing to be a mighty engine of moral and social improvement,

though ascribed by those interested in its suppression to diabolical agency: nor Christianity to be a Heaven-born system, suited alike to the nature and the wants of erring mankind, though Jewish learning and Greek philosophy were equally arrayed against it: so, neither did the mind cease to manifest itself through the agency of its material apparatus the brain, though Gall for making the discovery was driven into exile, and his followers were treated with ridicule and contempt. But man might as well attempt to hush the thunder as it rolls across the skies, or stay the tempest when it sweeps along the plain, as to stem the tide of truth. The consequence is, that the opponents of Phrenology, finding the arrows of ridicule and satire to fall impotent before it; have now moved their ground, and concentrating all their efforts into one focus, strive to impede its progress, by making it a channel which directly flows into the open sea of infidelity.

The religious objectors, I wish to treat with the greatest possible respect, for I honour the motives from which their opposition springs. Nevertheless, we must recollect that religion has ever afforded a banner under which the opponents of new discoveries have taken up their arms. In proof of this, the poison cup of Socrates, the exile of Pythagoras, and the dungeon gloom of Galileo afford ample testimony. Nay, was not Christianity herself similarly treated, and on similar grounds? Who were the chief opponents of our Lord when upon the earth? Were they not those who controlled the religious opinions of the day—the Chief Priests and Pharisees? Their accusation against the Lord of life Himself was, "He blasphemeth." Seeing then that this jealousy of, and opposition to, new discoveries, has been characteristic of religion in every phase,—Heathen, Judaical, and Christian, is it remarkable that Phrenology has not escaped? Would it not have been more remarkable if it had? Far be it from me to impute unworthy motives to those who, conscientiously believing our science to be opposed to the

truths of revelation, fancy they are doing God service in preventing its extension. No! "I bear them record that they have a zeal;" but I must be allowed to adopt the remainder of the verse, and express my conviction that "it is not according to knowledge." Let them beware, then, lest by representing any system built upon fact and observation as hostile to religion, their arguments become suicidal and injure the cause they have so much at heart. Every advocate of any new system or doctrine will do well to adopt the advice of Gamaliel in reference to Christianity, "If this counsel or this work be of men, it will come to nought; but if it be of God, ye cannot overthrow it." Let us then calmly examine the evidence before us with the fullest conviction that if our science be true, it cannot really be at variance with Christianity. Separate and independant truths are never naturally destructive; but, like the separate drops of water falling into a stream, they must eventually blend together, and strengthen the general current. I confess with deep regret that many of our eminent phrenologists are heterodox in their religious views;—some being too little acquainted with the Scriptures, to know their leading doctrines,—and others respecting them too little, to regard them.

I am indeed aware that the unhallowed grasp of the Infidel has seized upon our science; and by altering our first proposition that "the brain is the organ or material instrument of the mind" into another, viz. "that the brain is the mind itself," has aimed a deadly blow at the doctrine of the soul's immortality. I know, too, that the silly Socialist (as he misnames himself) has dragged it, an unwilling captive, into his service; and by asserting that man's character is formed solely by the influence upon his organization of circumstances over which he has no control, has endeavoured to prove man's irresponsibility. I am aware, also, that the Unitarian, because Phrenology discovers in man a series of moral organs, has likewise enlisted it into his service, to

support his opinion that man is not naturally depraved, and that therefore the Holy Spirit and the necessity for His regenerating influence are mere chimeras; so that the sincere believer in the truths of evangelical religion, has too frequently been afraid to examine what appeared to be so dangerous in its doctrines, and has at once pronounced it inimical to religion and to be avoided.

Now, though I cannot help admiring the motives which have induced the religious world to be thus jealous of Phrenology; I confess that their mode of procedure appears to me most impolitic. Phrenologists take their stand upon the metaphysical ground that "Whatever is, is." I therefore, conscientiously believing (because the evidence of my own senses tells me so) that Phrenology is truth, scruple not to adopt it in my creed; feeling fully assured that the volume of Nature emanates from the same Mighty Author as that of Revelation and, therefore, (as the Scriptures tell us, "God is not the author of confusion but of peace,") the two volumes cannot disagree.

Being then fully convinced that Phrenology is a science, based upon truth, and one which has been reared in strict accordance with the Baconian or inductive system; instead of rejecting revelation (as some have done), because at first sight it did not appear to harmonize with self-evident facts, or yet disbelieving what my own observation declared to be true, I endeavoured to reconcile the facts of the one, with the doctrines of the other. The result of this endeavour, will be given in the present paper; in which I purpose, first, answering those objections which have been urged against Phrenology, on the plea of Religion; and secondly, showing that Phrenology, to my own mind, is not only not inimical to, but in reality a valuable auxiliary of, Religion.

Before going farther, I must however premise that as every one's religion is a matter between himself and his God; so in the following remarks, I do not pretend to give the views of Phrenologists as a body, but simply of myself

as an individual member of that fraternity. I have already admitted that some Phrenologists think very differently on the subject from myself; but I am not to be made answerable for the religious sentiments of others, "to their own master they stand or fall." I conscientiously believe that unscriptural views are by no means a natural consequence of, nor are in any way inculcated by, Phrenology; did I think differently I should solemnly have paused ere entering the ranks of its advocates.

But Phrenology numbers among its adherents many of all religious creeds,—and some perhaps professing none at all,—therefore in compiling the following remarks, I consult none of their writings, but merely give my own opinion on the subject. Did I consider it requisite, I might here adduce a very good collateral argument in favour of the sentiment that Phrenology is not opposed to religion, by mentioning a few of the honourable names which shine in the galaxy of its present supporters. I might, for instance, point to the Rev. Dr. Welch, the deservedly respected professor of Church History in the University of Edinburgh, who was the founder of the first Phrenological Society in Great Britain,—to Dr. Wardlaw, the eminent dissenting minister at Glasgow,—to the well known Dr. Whately, the present Archbishop of Dublin,—to the Rev. C. Mc'Grath, the most talented and popular clergyman of the Established Church in Manchester, and many others, whose names would be a sufficient guarantee; but I prefer trying the question exclusively on its own merits, and bringing it before the tribunal of your candid judgment.

I will direct your attention, first, to the charge of Materialism,—a charge very pertinaciously urged against Phrenology, but so unfounded and absurd, that did it not bear a semblance of plausibility, which still deceives some intelligent minds, I would not stay to notice it at any length. It is absurd, inasmuch as, Phrenology goes no further than its opponents, in supposing that the mind is

more intimately connected with the brain than with any other part of the body, it merely associates particular functions with particular parts. If every treatise on Phrenology be examined, from the first by the illustrious Gall, to the last of Sydney Smith, it will be found invariably stated as the fundamental principle of Phrenology, that, as during man's compound state of soul and body, the mind requires a material apparatus, to bring it into contact with the material world, the brain is that apparatus; or, in other words, that the brain is—what?—the mind?—No—but the organ of mind. Another question then arises, viz. What is the mind? This Phrenology does not pretend to answer. We confine our observations to the manifestations of the mind, and do not attempt to examine the nature of the thinking principle itself, as a separate entity, well knowing that, while in the body, we cannot separate the mind, to analyze or dissect it; and that the moment we attempt to examine the brain while in motion life ceases, all such inquiries must be vain and useless. To arrive at any conclusion as to the nature of soul or mind—to see whether it be simple or compound—to ascertain experimentally whether it be material or not, we must humbly

"Wait the great teacher Death, and God adore."

Most speculations, indeed, as to the nature of mind, which are not founded upon God's word—mere philosophical demonstrations, belong to the same class as those made during the dark ages, on the nature of angels, when it was asked how many could dance upon the point of a needle; or if they could pass from one place to another, without going through the intermediate space.

There is, however, one point on which we can all agree, viz., that of whatever the mind may be composed, God has chosen no doubt the best possible substance for the action of the sentiments and emotions which we feel. The generality of Phrenologists, Gall, Spurzheim, and Combe among

the rest, agree in supposing the mind to be spiritual and indivisible. Indeed Anti-phrenologists are the most like atheistical materialists; since with a looseness of phraseology which may be sought for in vain among the writings of Phrenologists, they speak of diseased minds. Now if the mind be capable of disease, why may it not die? But phrenologists have no such phrases in their vocabulary as diseased minds, mental diseases, &c. The brain, or mental organ, may be diseased,—it also dies; but we do not believe the mind capable of either.

I have called the charge of Materialism absurd; for, in point of fact, can any one tell what matter is? Why—the very existence of matter is so difficult of proof, (strange as the assertion may appear,) that some of those northern lights, the metaphysicians, have denied it *in toto*; and so plausible are the arguments which have been adduced in favour of this doctrine, that though whole volumes have been written to controvert the subject, it has still some supporters. I decidedly agree with Lord Byron, that "when Bishop Berkley said there was no matter, it was no matter what he said." But I repeat the question, What is matter?

The chemist knows by analysis that water consists of two gases, oxygen and hydrogen; but does he know of what these gases consist?—No! One thing, however, we do know, that matter is indestructible, and, therefore, if Phrenology did lead to Materialism, which I distinctly deny:—for I think the spirituality of the mind is rendered abundantly probable, if not established, by my friend Mr. Rumball's argument, that as the products of mental action are immaterial, (we cannot, for example, touch, see, or handle a thought, an idea, an effort of the will,) so the mind itself must necessarily be immaterial, for Nature does not afford a single instance of a material cause producing an immaterial effect; as well as by Lord Brougham's argument, that

every particle of the body is changed once in seven years, while consciousness and memory tell us that the mind is not changed, *ergo*, the two are not identical:—I say even if Phrenology did lead to a belief that the mind was material, matter being indestructible, it would not affect the doctrine of immortality.

If we do not know the exact nature of mind and matter, we know that each of us possesses an understanding that thinks, and affections that love, that the two combined form the real man—the human being—the soul created in the divine image, destined for everlasting bliss or woe. And does Phrenology militate against this? Far otherwise. It only shows the means by which the Creator is pleased that these powers should be manifested while in this world: it proves more clearly than any other system, the perfect adaptation of the dwelling-place to its tenant: it explains why man's cerebral mass is larger than that of the lower animals; why its fibrous texture is so delicately fine, and its convolutions so deep and numerous. To explain the beauties and capabilities of a mansion, so far from ignoring its inhabitant, implies the existence of one, and so, in investigating the formation and reciprocal action of the compartments of the brain, is the existence of a tenant, giving life and vitality to all, necessarily involved. Materialism! Is it Materialism to show the means wherewith man has to work out his own salvation—to point out the tendencies he has most need to repress, and the sentiments he ought chiefly to cultivate—to explain the powers committed to him in trust, for the use or abuse of which, he will be accountable at the day when all hearts shall be laid open—to teach the nature of those faculties by which alone, while in this life, he is able to fulfil his Maker's will? If this be that dark and comfortless thing called Materialism, then indeed Phrenology proudly bows to the charge; for it is all this that she essays to teach. But let Phrenology be viewed

as it may, it cannot affect the doctrine of a future state. The Christian builds his hopes of immortality on the sure promises of the Gospel—he knows that his soul will live for ever, not from its substance, but as the out-breathing of the Almighty; that not its faculties, but its essence, fit it for everlasting progression—that, in a word, not Nature but Christ "brought life and immortality to light."

A second charge which I have heard brought by the religious world against Phrenology is, that it localizes to the head many of those feelings and sentiments which the Scriptures appear to plant in the heart. Solomon, for example, says that "Frowardness is in the heart of man;" "The heart deviseth wicked imaginations;" "Hope deferred maketh the heart sick," &c.; and St. Paul speaks of his "heart's desire;" and Jeremiah, "the heart is deceitful above all things, and desperately wicked."

And it is further argued that in every day language we seem to recognize this localization of affections to the heart, since we speak of persons being "hard-hearted," "warm-hearted," "tender-hearted," &c. To this, however, I reply, that if passages of Scripture can be adduced in which it is utterly impossible to take the word in any other, than a figurative sense, I conceive that we are quite at liberty to consider its use invariably metaphorical; and many of this description might have been brought forward if time permitted. We will take one: Solomon, in Ecclesiastes x. 2, says, "A wise man's heart is at his right hand; but a fool's heart at his left." I think few would take this in a literal sense. My own opinion is, that whenever the word "heart" occurs in Scripture, it is used figuratively for the affections; and when we recollect that the heart is the mainspring in the whole machinery of the body, that to its pulsations, the circulation of the blood is owing, and that it is the indirect, if not immediate source of all bodily heat, we cannot help being struck with the

beauty of the emblem. The bowels also are frequently spoken of in Scripture in the same way; for instance, when a person's benevolence has been powerfully excited, "he is said to have opened his bowels of compassion:" no one could literally do this.

A third charge is, that we do away with free agency, and therefore with moral responsibility. Here, however, we go no further than our opponents themselves. They speak of persons having naturally bad or good dispositions; of one having a kind, another an irascible, another a miserly disposition. Now, the Phrenologist finds that these various dispositions, are accompanied by certain forms of the cranium, and therefore merely substitutes the word "organization" for "disposition," without altering the spirit of the proposition one tittle. Phrenology leaves the question of responsibility just where it found it.

But let us bring the matter to a higher standard than previously received notions; let us take the Bible, and see if Phrenology stand not that test also. The Scriptures, especially our Lord's parables, represent mankind as variously endowed; some with one, others with five, and some with ten talents. Now this statement Phrenology amply confirms, since it finds all men (except actual idiots) gifted with one or more talents; *ergo*, no one can plead his inability to make some return. The Scriptures, then, for our consolation, inform us that God, "the Holy and Just One," will not expect from him, to whom he has only entrusted one, or two talents, the same return as from his more gifted brother, the possessor of five, or ten. For be it remembered, that from him that had received five talents, was expected a return of ten; while he that had only two entrusted to him, was pronounced equally faithful when he rendered four; and he that had only one, was, notwithstanding the small amount of his loan, condemned because he exercised it not.

We may, therefore, rest assured that as we are to be judged by that Righteous Being, who Himself made, and so knoweth what is in man; we shall not be sentenced unjustly: and in His hands I am willing to leave the subject, without attempting to spy out the economy of His government. On these matters,

"What God reveals, it is enough to know."

The fourth, and last religious accusation with which I am acquainted is, that by asserting man's possession of moral organs, and consequently of innate moral feelings, we deny the depravity of man; and thereby do away with the necessity of the regenerating influences of the Holy Spirit. Let us, however, give this question that careful examination which its importance requires.

When man was first created, he was, as he is now, an animal, a moral and an intellectual being: but he was then happy, because holy;—his animal propensities were duly controlled;—his intellect was not prostituted to unholy purposes;—and his affections and moral sentiments were exercised upon, and directed to, their proper objects. But from this happy state he fell. The harmony, or balance that had hitherto so beautifully existed in the three natures, was by that terrible catastrophe destroyed;—the animal, which had been merely given to propagate his race and to cultivate the domestic affections, became freed from the restraint of the moral, and exalted to her throne became "earthly and sensual;"—the moral, again, instead of ruling over, became debased and brought into subjection to the animal and intellectual; hence man became "devilish," (for "what other conception do we form of Satan himself, than that of a mighty intellect broken loose from the restraints of morality?") and the very faculties, whose legitimate exercise it was to revere their God, became prostituted and misdirected to the grovelling things of earth. In contem-

plating this sad change, we are sometimes tempted with a sigh to ask

> Then why 'mid Paradisal scenes should misery appear?
> Why should an Eden prospect be sullied with a tear?
> Why should a tinge of sadness,—a single streak of gloom,
> Deprive the air of gladness, of a perennial bloom?
> What fierce simoom hath swept o'er man with pestilential breath,
> That this fair earth should be the abode of pain and woe and death?
> Yet still th' enigma may be solved: consult the sacred word
> That tells how Peace forsook th' earth when our first parents err'd;
> Nor can that Heavenly visitant e'er tabernacle here,
> Till rebel man lays down his arms and walks in faith and fear.
> So say the Sacred Records; and a monitor within,
> In tones of thunder echoes, that THE PESTILENCE IS SIN.

It must here be specially observed that the fall did not give to man any powers or principles, which he did not previously possess, neither did it annihilate any that he had in his happy state of innocency; but it destroyed the harmony that existed in his three natures and blinded, or rather misdirected his faculties; so that the worship of his Maker, which had before been his greatest joy, became unpalatable to his now perverted taste; his affections, instead of being fixed on things above, became wedded to the trifles of earth; and to his bewildered and stupified intellect, the things of God "became foolishness and a stumbling-block."

This is the state in which the Bible represents, and Phrenology finds, the whole human race.

And what is to raise man from this sad condition? The answer is REGENERATION. But what is regeneration? Some Phrenologists, as I have already admitted, tell us that it is merely the activity of the moral organs; and that, therefore, those who are naturally gifted with a good moral organization, are naturally religious, or, as Mr. Combe says, "require no law, but are a law unto themselves." The Scriptures, however, tell us differently; they say that "all have sinned, and come short of the glory of God;"* "that

* Romans iii. 23.

there is none that doeth good, no not one;"* that "the natural man receiveth not the things of the Spirit of God; for they are foolishness unto him: neither can he know them, because they are spiritually discerned;"† that all are alike in a state of condemnation, and so to become holy requires the outpouring of the Holy Spirit.

With all due deference to Mr. Combe (for whose splendid talents and philosophical acumen I entertain the highest respect, but from whom, as a theologian, I most decidedly dissent), facts seem to me, to establish the Scriptural proposition; for we often find those individuals who have the most beautiful moral and intellectual endowments, giving no evidence of the work of grace in their souls. Let us take an example. We have one afforded in Sir Walter Scott, in whom all the moral organs were largely developed, but those which are sometimes called the religious organs, viz., Benevolence, Veneration, Hope, and Wonder, were according to Mr. Combe's own register, unusually large; yet Sir Walter never gave any evidences of sincere religion. How was this? The organs were there, I reply: the faculties were not wanting, but those faculties were not directed towards their proper objects. But the Scriptures go further than this; they not only tell us, that all are naturally depraved, but they show us plainly that no efforts of our own, no stimulus which we can ourselves apply, will ever make us holy, but that we reqnire a radical change of nature, which nothing but Omnipotence, prompted by Infinite love, can effect. This change is called in the sacred volume "change of heart," "new birth," "regeneration," "being "quickened from death in trespasses and sins;" and a variety of other figures are applied to it, each and all of which, tell us that it is something beyond the power of fallen man, to accomplish for himself. But that we might by no possibility go wrong on this question, the Scriptures often declare to us that conversion and sanctification are the

* Psalm liii. 3. † I Cor. ii. 14 v.

work of God. Christ says, "without me, ye can do nothing."* Saint Paul also tells the Romans that "the love of God is shed abroad in their hearts by the Holy Ghost which is given unto them."† So he wrote to the Ephesians, "By grace are ye saved, through faith, and that not of yourselves; it is the gift of God, not of works, lest any man should boast."‡ And again, he tells the Philippians,¶ "it is God that worketh in you both to will and to do of his good pleasure." But it is needless to multiply texts of this description.

The question now is, how is this change of heart affected by Phrenology? To this I reply that as man's fall gave him no new affections or principles, so sanctification annihilates none; and as the fall took none away, so sanctification gives him none; but sanctification restores the balance which sin destroyed, it enlightens the blinded intellect, restores the taste for the things of God, weans the misplaced affections from the dross of earth, and re-directs them to higher and nobler pursuits befitting a new-born soul, and for which they were originally intended. With this, however, Phrenology interferes not at all, since it takes man as it finds him by nature, not as he is moulded by grace;—whether in a converted or unconverted man, it merely speaks of the natural constitution of the mind, of the natural abilities, tastes, and dispositions. We know that "none by searching can find out God," and therefore would not dare to examine the *modus operandi* of His grace, or to bring it down to the standard of our reason, or attempt to explain it, by the principles of any human science. And now having combatted all the objections which, during my own experience as a Phrenologist, have been brought against the science on religious grounds, I come next to the second part of my subject, in which I proposed to show that,—instead of being inimical, Phrenology, is in reality an useful auxiliary of Chris-

* John xv. 5. † Romans v. 5. ‡ Ephesians ii. 8. ¶ Phil. ii. 13.

tianity, and affords many illustrations of its leading doctrines.

First: It appears to me to corroborate the doctrine of innate depravity. This illustration I have, however, partially anticipated in my answer to the last religious objection, in which I endeavoured to show that Phrenology finds man as the Bible describes him, with his animal and intellectual natures like two angry steeds broken loose from the reins of the moral, and urging him onward with mad and blind impetuosity whither he knoweth not:—nay, that the very intellect itself, how splendid soever it may be, has its lustre tarnished by sin; for though man may be still capable of grappling triumphantly with the difficulties of science—of even tracing out the trackless courses of the planets which roll through the infinity of space, and of curbing the lightning's flash, robbing the fiery arrow of all its power, and bringing it harmless and impotent to his feet,—yet not one instance has been afforded in the whole history of the world, in which man by the light of his own intellect alone, has ever discovered one of the most self-evident facts in nature, viz., that he is a sinful creature, and therefore needs redemption. True it is, that Aristotle, Socrates, Plato, and others, though groping in the darkness of a Heathen land, discovered by the unassisted light of nature some of the attributes of the one true God; it is also known that some of the Heathen moralists, Horace and Juvenal to wit, give advice, which even Christians would do well to listen to; but not one of them ever ascertained the fact of their own need of a Saviour—and the idea of a God clothed in mercy, redeeming them from justly deserved punishment never entered, into their conceptions. If then Phrenology shows us that men of the most stupendous intellects such as Bacon, who has well been called "the wisest, greatest, meanest of mankind," with all their discoveries, could not see what so deeply concerned them, as a sense of their own sins, and the way of salvation; and when further it finds men with the

noble moral endowment of Sir Walter Scott yielding none of the fruits of true and vital religion, but evincing nothing more than cold morality, it certainly confirms the Bible doctrine "that it is not in man that walketh to direct his steps,"—for he is by nature a leaky vessel, whose chart and compass are gone, and which, unless some superior pilot take the helm, will, even if it escape Scylla, be inevitably swallowed in the foaming vortex of Charybdis.

But Phrenology affords still more direct and tangible evidence, that though man was once a noble fabric, and still retaining some traces of his primeval grandeur, he is now but a ruined pile;—since it informs us, what are the true functions of his various faculties, and shows how lamentably they are misdirected, and to what unholy purposes they are applied. For instance, how frequently do we see Veneration, the very situation of whose organ, occupying as it does the centre of the coronal region pointing towards heaven, would seem to declare its functions to be a reverential awe of the God that gave it, and whose legitimate exercise is in his worship:—I say how frequently and deplorably do we see this faculty of Veneration misdirected, as in the case of the poor heathen, to stocks and stones, which their own hands have made. Again, how often do we find the beautiful sentiment of Hope, which by a beneficent Creator was implanted in our mental constitution, to enable us to rest with perfect satisfaction on the promises of "Him that cannot lie," to analyze a belief that "the things which are seen are temporal, but the things which are not seen are eternal," and to promote the growth of that faith which "is the substance of things hoped for," I say, how often do we see this noble sentiment debased, as in the case of Robert Owen (for very large Hope is a leading feature in his head) to the prosecution, with expectations of success, of the most visionary and absurd schemes. Again, how frequently do we see Conscientiousness (whose function is implied in its name) so blinded and perverted, as to become a cloak for

cruelty; for even our Lord was constrained to admit, that some of those, who would slay his own disciples would think they were thereby "doing God service!" Once more, how often do we find Firmness, that exclusive prerogative of man, among all the inhabitants of this lower world, instead of "holding fast that which is good," and being "steadfast and immoveable" in the best of causes, "of running with patience and perseverance the race that is set before us," and "earnestly contending in the good fight;"—giving rise to the most dogged obstinacy and resistance of the truth. When therefore, we see all the faculties, in themselves so noble, thus terribly perverted, I think we must certainly feel somewhat as the Apostle did in the Apocalyptic vision, when contemplating the fall of the great city, and exclaim with him, that man like "Babylon is fallen, is fallen!"

Secondly. The Bible recognises a difference between morality and religion; good works emanating from the former, being considered worthless; those, and those only, which are the result of a lively faith being of any value before God. To prove this position from Scripture, to a company like the present, I consider quite unnecessary. I may, however, just quote one or two passages, which bear upon the subject. It will of course be admitted by all, (indeed some of the texts already adduced in the present paper establish the point,) that "justification is of faith and not of works;" and that though good works are a necessary concomitant of faith, yet in themselves; they afford no ground for salvation. But still the Scriptures imply a marked difference between merely moral and religious works. Christ, for instance, seems to recognise this distinction when he says, "Whosoever shall give a cup of cold water to one of the least of these in my name, shall not lose his reward." Now Christ does not say that He will reward the merely moral work (for a moral work, an act of benevolence it assuredly is, to minister to the wants of others,) of giving

"the cup of cold water," but it must be given "in my name;" *i. e.* the motive must be gratitude to me, for the love I have exhibited towards you: it then becomes a religious work, and shall not lose its reward. St. Paul also appears to allude to this difference in the 13th of 1st Corinthians, when at the third verse he says, "Though I bestow all my goods to feed the poor, and though I give my body to be burned, and have not charity, it profiteth me nothing." Now certainly, parting with one's possessions, and still more one's life, implies benevolence; yet the Apostle speaks of the possibility of possessing that apart, from true charity or "love," (as the word should be rendered,) by which I understand that feeling of affection for others, which proceeds from a deep and abiding sense of God's mercy towards one's self. I trust then, that it will now at least be admitted, that the Bible draws a line of demarcation between the works of religion and those of mere morality; for while it is expressly stated, on the authority of Christ Himself, that the former shall not be unrewarded, the latter are pronounced of no more value than "sounding brass or a tinkling cymbal."

Now the justice and rationale of this, are illustrated and established by Phrenology, which recognizes the same line of distinction between morality and religion, and is, as far at least as I know, the only system of human science which has thrown any light on this important point. Phrenology discovers in man the possession of a series of innate moral sentiments, and thus shows that a man may be benevolent, or obedient, or conscientious, without having experienced aught of the sanctifying influence of the Holy Spirit, or of that love to Christ, which is especially mentioned by St. Paul, as the constraining motive in all true religion; and that for such moral actions, (as he is hereby following the blind dictates of his natural feelings of Benevolence, Veneration, or Conscientiousness,) he is no more deserving of a reward hereafter, than another man with large Acquisi-

tiveness would be for hoarding his gold, or with large Philoprogenitiveness for loving his children.

Phrenology then shows us, that the Atheist may be moral (which I doubt not he sometimes is); but that the best of actions produced by such a man are of no avail, in a religious point of view, inasmuch as he is merely gratifying his innate moral feelings, and is a stranger to that faith which is the *primum mobile* of all true religion. Phrenology, therefore, plainly illustrates, in this case, one of the most prominent doctrines of the New Testament.

Thirdly: The Bible presents for our belief many doctrines, which man not only, never could have discovered by the unaided efforts of his own reason; but which, even when revealed, he is not able to comprehend. Now the usual mode of treating these doctrines in the pulpit is to adduce analogous cases in the natural world, by way of illustration; and where such can be found, they of course prove that the former, though incomprehensible, are certainly not absurd; and if they appear stamped as it were, by what we consider sufficient authority, we then do not hesitate to adopt them as portions of our belief.

Among this class of scriptural doctrines is that of a Triune God; but the only pulpit illustration of this which I have heard advanced, is the antiquated one of the combination of soul and body in an individual, which, by the way, is in reality no illustration at all, since it is a case of Duality not of Trinity in Unity. Phrenology, however, affords an illustration worthy of the name, and shows us that, as God made man in His own likeness, so he still, notwithstanding his fall, reflects the image of Deity in this respect as well as in others, that he is a Trinity in Unity and an Unity in Trinity. For if we inquire what is man? we find that, first, he is an animal, a perfect animal, possessing, in a high degree of manifestation, every propensity and instinct inherited by the animal world. But, secondly, he is something more; he possesses perceptive

and reflective powers, which constitute him an intellectual being. Nor is this all: for, thirdly, it is man's still higher privilege to be gifted with a series of sentiments, which God has thought fit to withhold from every other terrestrial creature, and these constitute him a moral being. Man is, therefore, an animal, an intellectual, and a moral being. Now, though the old philosophers had discovered (or at least fancied they had discovered,) many individual faculties and powers; to Phrenology, belongs the honour of this threefold classification, "and all reflecting men, to whom it has been proposed, approve it as philosophical and true. It is a great and valuable service then which Phrenology has performed, if it were the only one, that it has philosophically classified the powers of human nature; analogically illustrated a truth of revelation in a manner in which it was never before illustrated. Nothing can be plainer or more true to nature, than the distinction which exists in the animal, the intellectual, and the moral natures of man;—no one confounds them with each other, and every one perceives them all to exist in himself. Every man knows himself to be an animal being—an intellectual being—and a moral being; yet no man can tell how these exist, distinctly, yet unitedly, in his single self, while yet he is conscious that they do exist." Thus then Phrenology affords a beautifully analogous, though certainly not a parallel case, in our own selves, to that mysterious threefold personal distinction in the Divine nature, so clearly revealed in the New Testament; it likewise, at the same time, exhibits more clearly than any other system the truth of the text, that "God made man in His own image." When, therefore, we encounter a cavilling sceptic who refuses to believe in a Triune God, because, forsooth, his puny intellect cannot comprehend so great a mystery,—Phrenology would sound in his ears the well-known apothegm of Chilo, the Lacedæmonian, (which, to the credit of Greece, is said to have been written in golden letters across the

Temple of Apollo at Delphos,) "γνωθὶ σεαυτον;" and say, when thou canst comprehend thyself,—then,—and not till then, presume to scan thy God.

Fourthly. Phrenology has discovered in man a sentiment of veneration, which (like all the other organs desires exercise,) and prompts him to worship, and which, together with all the other innate powers, exists in a greater or lesser degree in every child of Adam. Accordingly, into whatever country or clime we go, from the ice-bound shore of the north pole, to the burning deserts of the torrid zone, wherever we find a race of men, however highly civilized, or however rude and barbarous they may be, we invariably find a religious worship of some kind. Now if we make an examination of all the faculties, sentiments, and propensities of man, we shall find that every one stands in a definite relation to certain external objects, that the Almighty has given none in vain or to no purpose;—but that in His goodness He has provided proper objects, on which they may all be legitimately exercised, and from which exercise they derive gratification. Let us take a few examples. Has man, for instance, Amativeness? Opposite sexes exist for its gratification. Has he Philoprogenitiveness? There are children on whom to exercise it. Has he Attachment? Individuals surround him with whom he may form delightful friendships. Has he Inhabitiveness? He has a country and a home to love. Has he Benevolence? Beings exist around whose sufferings he may alleviate, or whose joys he may advance. Therefore, I think we may safely assume, that as man has a sentiment of veneration prompting him to worship a superior Being, such a Being must really exist. Phrenology then, by discovering the existence of this sentiment, furnishes us with an additional argument in favour of the existence of a God. Yes? The works of creation are fraught with harmony, and, therefore, as all the other faculties have real objects on which to be exercised, the existence of this sentiment—Veneration surely demonstrates the exist-

ence of a God. Further—no innate power nor sentiment can be eradicated. By exercise its manifestations may be rendered more powerful, and by neglect it may fall into a state of comparative quiescence; but as every faculty is a part of the human constitution, it never can be annihilated. The existence, therefore, of Veneration furnishes a consolatory reflection for all those, who are zealous for the honour of the True God, by showing that while man retains his present constitution, (which he must do so long as the race is propagated in the present manner,) while he has veneration prompting him to worship, and intellect showing him, that the God of Revelation is the only one deserving his reverence, so, amid all the changes and revolutions of this world, God's pure religion can never become extinct: it has been founded in accordance with the highest and noblest sympathies of our nature, and therefore whatever storms may rage, and however great the infidel artillery by which its overthrow may be attempted,—the very "gates of hell shall not prevail against it."

Fifthly. While it is uncertain whether the lower animals have any knowledge of the past, it is quite clear that they have none of the future; but in man alone, of all the world's inhabitants, Phrenology discovers a sentiment of Hope, which as Pope says

> "———— Springs eternal in the human breast;
> Man never IS—but always TO BE blest:
> The soul uneasy, and confined from home,
> Rests and expatiates in a life to come."

Yes! and happily this delightful sentiment—this evergreen of Paradise, which, having survived the dire catastrophe of Adam's fall, has accommodated itself to our ungenial soil,—and is to a greater or less extent the property of every member of the human family. Wealth cannot purchase it, but like the air we breathe it is gratuitously bestowed upon us; and tyranny and oppression cannot take it away, for not only with the monarch, but in the heart of the poor slave it takes

up its abode,—and, rising superior to his galling manacles, bids him look beyond the present and rejoice in anticipation of a happier future.

Man alone of all the existences that swarm on this our planet, has been gifted with a sentiment that sports its gay wings in the future; and, when perhaps the atmosphere of this world is blackening around it, enables him to look beyond the gloomy vista of time, yea, even to penetrate the dark valley of the Shadow of Death, and to discern in the distance a streak of light across the horizon of another and a brighter world.

Now, as I endeavoured to deduce the existence of God from man's possession of a faculty of veneration, so I think from his possession of a sentiment which looks forward to another and a happier land I am fairly entitled to assume the existence of a future state.

For as Montgomery asks

> "Oh! if there be no world on high,
> To yield his powers unfettered scope;
> If man be only born to die,
> Whence this inheritance of Hope?
> Wherefore to him alone were lent
> Riches that never can be spent?
> Enough, not more, to all the rest
> For life and happiness were given,
> To man, mysteriously unblest,
> Too much for any state but Heaven."

They indeed must estimate Deity differently from myself, who fancy that God has made this earth like what the ancients fancied Hell, where man occupies a position somewhat similar to that of the fabled Tantalus, being continually filled with delusive hopes, and having constantly before him the prospect of good things which he is never intended to enjoy. Phrenology, however, by shewing the innateness of hope, affords an interesting argument in favour of a future state.

But before leaving this part of my subject, I would first

call your attention to the wisdom and goodness of God, in implanting this sentiment in our minds. Did we not possess Hope, we should be unable to appreciate the cheering prospects of a happy Eternity which the Gospel scheme unfolds;—the future would have been dark and gloomy;—in every trial, we should have yielded ourselves willing victims to despair;—and the promises of Jehovah Himself, would have failed to elicit a single smile of gladness. But man has this sentiment; and the fact of the Bible so frequently appealing to it, shows us how wisely the Gospel is adapted to our nature, and may furnish us with another argument, that the same wise and benevolent Being is the author of both.

Sixthly: Phrenology is the first system of mental science which has discovered in man, a faculty with the especial function of inclining to a belief, of what we cannot comprehend. This faculty Phrenologists call marvellousness or wonder. I need not remind you how the Bible recognizes and frequently appeals to it; since a great portion of the truths of revelation,—those of the Trinity, Christ's Incarnation, Omniscience, and Omnipresence, for instance, are entirely beyond our powers of comprehension. Now, as the Bible requires us to believe these important and mysterious truths, Phrenology exhibits in glowing colours the goodness of our Lord, who has not only made us capable of believing mysterious truths, but actually inclined us to do so. Further, Phrenology at the same time, exhibits the justice of a punishment denounced against unbelievers; since it shows us that God is not a hard task-master "reaping where He has not sown, and gathering where He has not strawed:" but that in requiring us to believe the testimony of His Son, He is only making a demand, with which He has given us the ability to comply. Every one, therefore, that disbelieves the truths of the Gospel, under the futile plea that he cannot comprehend Him, belies his own self; for Phrenology discovers that he is not only able

but actually inclined to believe, what he does not comprehend.

Seventhly: The second Commandment teaches that God visits the sins of the fathers upon the children, unto the third and fourth generation of them that hate Him. Now, what the opinions of theologians generally may be on this point, I know not; but it has frequently occurred to me that Phrenology reveals at least one mode in which the Almighty is pleased to carry his denunciation into effect. Phrenology, by discovering hereditary transmission of mental, like facial features, shows that while parents possessing good moral endowments in a state of activity, transmit to their offspring healthy moral organizations; those who from a long career in debauchery and vice, have permitted their animal propensities unlimited gratification, till, like noxious weeds, they have choked the higher powers, are not only bringing on their own heads, the punishment they so richly deserve, but are inflicting on innocent and helpless infancy,—on generations yet unborn,—a misery as cruel, as it is revolting to every better feeling. A consideration of this kind, should surely afford an extra stimulus to perseverance in a virtuous course of life; and may also show us that the best means of rendering future generations happy, is not to exterminate, but to improve the vicious. For though five hundred men may be hanged this year for outraging the laws, if a single couple with depraved organizations exist, the probability is, that there is still remaining a hot-bed of vice and misery, which will eventually bring forth its bitter fruits.

Eighthly and lastly: Phrenology, like Christianity, inculcates the much spoken of, but little practised virtue of charity. It shows us, that two men with differently constituted minds, not only will not (but I may also say cannot) view a given subject in the same light; and therefore points out the glaring impropriety, nay, the injustice of debarring

those whose minds are differently moulded to our own, from the privileges which should be common to both.

Let us take an illustration. We have one afforded in the Established Church of our own land. This Church presents the highest claims to our respect and affection,—claims which I conscientiously believe to be valid. But Phrenology tells me, that another person with a differently constituted mind from my own, would, even if brought up under similar circumstances and holding the same doctrinal views, be utterly unable to admit and appreciate those claims in the same manner as myself. How, then, in a case like this, ought I to act? Should I dare to pronounce all who differ from me as void of proper feelings;—or in the height of fancied wisdom, declare that they, not myself, are viewing objects through inverted media. Oh no! Phrenology would tell me to respect their feelings, and instead of withholding the right-hand of fellowship, or avoiding their society, would lead me to admire their conscientiousness, and independency of mind in making use of the powers which God has given them, and like honest individuals, thinking for themselves instead of hanging their faith to the *ipse-dixit* of another.

The language of Phrenology is indeed "Peace on earth, and good-will towards men;" its dictates are similar to those which influenced one of our most popular poets, when he prayed,—

> "Let not this weak unknowing hand
> Presume Thy bolts to throw,
> And deal damnation round the land
> On each I judge Thy foe.
> If I am right Thy grace impart
> Still in the right to stay;
> If I am wrong, oh, teach my heart
> To find the better way."

And its spirit, like that of Christianity, "beareth all things, believeth all things, hopeth all things, endureth all things, thinketh no evil, is not puffed up."

And now, having examined and endeavoured to refute all the objections, which to my own knowledge have been brought against Phrenology on religious grounds, I have attempted to show that Phrenology confirms the doctrine of innate depravity; that it, like the Bible, draws a line between morality and religion, showing the utter worthlessness of the former; that it beautifully illustrates the doctrine of the Trinity; that it affords an internal argument for the existence of a God; that it tells us of another and a happier land; that it shows the goodness of God in making us capable of believing the truths of revelation, and consequently our guilt in disbelieving them, and the righteousness of our punishment, if that disbelief be persevered in; that it throws additional light on the mysterious fact of God visiting the sins of the fathers upon the children, thereby telling us to take heed to our ways; and that it, like Christianity, asks, "what hast thou to do, to judge another man's servant?" teaching "charity towards all men."

I now willingly leave the matter with you, and in conclusion, I would beg to ask two questions: first, Can truth and error, Christianity and infidelity, have so many points of harmony? or, secondly, Does not the fact of Phrenology thus illustrating Revelation prove that God (in all whose works are no signs of contradiction, but unity of design, may be clearly traced) is not only the Author of Nature but of Revelation also?

18*th December*, 1839.

LECTURE VII.

THE PRINCIPLES OF PHRENOLOGY.

As the subject which we are going to consider is so extensive in itself, and its ramifications are so numerous and important, as to require a long course of lectures for its adequate treatment, and as it therefore follows that any general view of its principles, must needs be cursory and hurried; I shall doubtless be following your inclination as well as my own, by refraining from any lengthened preliminary remarks, and proceeding at once to a consideration of the science.

Phrenology is, as its name implies, "a science of the mind," the word being compounded of φρην (Phren) the mind, and λογος (logos) a discourse. It may in few words be defined as "A system of mental philosophy based on the physiology of the brain." If there be any truth in the aphorism that "the proper study of mankind is man," or in the assertion that "of all knowledge, a knowledge of ourselves is the most important," the subject must be replete with interest. In whatever point of view we consider man, we shall find that mind constitutes his chief characteristic, and the most valuable of all his possessions. If we contemplate him as the money-getting, plodding, hand-to-mouth, in-

dustrious creature which in modern society we find him, even in that comparatively low condition, it is mind, and mind alone, that works the machinery. Or if we contemplate him in the more interesting aspects of God's vicegerent upon earth, as the head of sublunary creation,—as, amid all the hosts of organized existences that swarm on this our earth, the sole possessor of powers of ratiocination, and of moral sentiments and emotions, we shall find that it is to mind alone, that his superiority is to be attributed; for, in point of mysteriousness of corporeal organization, the veriest insect that crawls beneath his feet, or flutters away its short-lived existence in the sunshine of a summer's day, is as "fearfully and wonderfully made" as man himself. Or if, once again, we consider him in his most important position, as a heaven-bound pilgrim, passing through a world of trial and probation, to another and more lasting habitation, what is it but mind, bursting from the trammels by which it is clogged and fettered and bound down to earth, that amid present distresses, can realize by anticipation a happier future; and when the atmosphere of time is dark and lowering, can discern by the eyes of faith and hope a brighter horizon beyond its boundaries? Mind then being, in every sense of the term, the better part of man,—in fact the man himself; any system professing to shed a light upon its operations, instead of meriting the derision with which Phrenology has too frequently been assailed, rather deserves the most careful and truth-loving examination, which the intelligent and thoughtful can devote to it.

As, however, the science is of comparatively recent date, and we only know how to properly appreciate the advantage of order and arrangement, by placing in juxta-position the inconveniences of disorder and confusion; (we can only estimate the utility of knowledge on any subject, by viewing it in contrast with the evils of ignorance;) so your attention will now be directed, First, to the very unsatisfactory condition of mental science before Phrenology arose;

Secondly, you will be invited to accompany me in a brief historical trip, while we notice its rise, progress, and present position; and Thirdly, and chiefly, we shall examine, one by one, as fully as time will permit, the principles on which it rests.

And in the first place, mental science, strictly so called, can scarcely be said to have existed prior to the time of Gall; or at least it was in a condition precisely parallel to that of physical science before the days of Bacon. It was Bacon who, for the wildly speculative system of the alchymists, substituted a sound and rational mode of investigation;—that of a rigid induction of general laws from an extensive series of carefully observed phenomena: and Gall was the first who, in like manner, applied the same principle of strictly inductive philosophy, to the investigation of the mind and its operations. Therefore, though it is quite true that we had what Sir Humphry Davy calls "that dull and dry heap of words termed metaphysics," and that our library shelves were literally weighed down by ponderous tomes of learned ignorance and subtle speculations; and though it is equally true, that the metaphysicians claimed for their systems in the aggregate, the ostentatious title of "the science of sciences," yet few, I apprehend, at the present day will be found, who would apply to their vague and abstruse theories relating to the human mind, the dignified appellation of a science. For, in the first place, these systems were combinations of theories, often based upon the clouds, and in the great majority of cases, incapable alike of confirmation by facts, or of practical application to the purposes of life. Secondly, these theories were so abstruse as to be above the comprehension of three-fourths of mankind, and to require a mind of no ordinary calibre to comprehend them; thus rendering too near the truth, the description given by the honest Scotch blacksmith, when in reply to the question "What are metaphysics?" he shrewdly answered, "Twa folk disputen thegither, he that's listenin disna ken what he that's speakin means, and he that's speak-

in disna ken what he means himsel. That's metaphysics!" And in the third place, as we shall see in the sequel, these theories did not offer anything like satisfactory explanations of the most common-place mental phenomena, such as dreaming, monomania, and others.

Far be it from me, to detract from so respectable a class of writers as the metaphysicians. They have numbered among their ranks many men of splendid intellectual attainments, many sound reasoners, profound thinkers, admirable moralists, and beautiful writers; but their failure to elucidate the mental constitution and operations arose, not from any defect in their own powers, but from the erroneousness of the mode in which their inquiries were conducted. Their sources of error appear to have been twofold. They contemplated the mind as a distinct entity, without taking into account the influence of bodily organization; thus practically forgetting that in the present stage of existence, mind and body are so inseparably bound up together, and exert so great a reciprocal influence one upon the other, that any inquiry into the "*modus operandi*" of the one, without considering the influence of the other, must necessarily be attended with fallacies. A second and still greater source of error, was the fact that the metaphysician, shutting himself up in his study, reflected through the medium of consciousness on his own mental constitution, and from his own case proceeded to deduce general laws as to the constitution of the human mind; thus losing sight of the important fact that different minds are differently constituted, and therefore that how correct soever may have been his conclusions as to the nature of his own mind, they were no sufficient data for building up a system on the assumption that all other minds were similarly constituted. To take an illustration. Had the wretched criminal Hare been requested to write a treatise on the human mind, and through the medium of his own consciousness, to deduce laws as to its constitution;

think you that he would ever have discovered in man such a principle as benevolence? Or had a similar task, and similar means of performing it, been enjoined upon Greenacre; would he ever have discovered the existence of sentiments of honesty and moral rectitude? Assuredly not; such emotions were strangers to their own breasts, and therefore their own consciousness could never have revealed their existence. Their theories would have been, what the metaphysical systems really were, reflections of their authors' own minds; possibly true in their individual relation, but necessarily false when propounded as of universal correctness and application. For four thousand years have the metaphysical writers been trying to elucidate the phenomena of mind; during which period, theory after theory, has appeared, and then in sad succession faded from the view: each one differing from the other, and each one leaving the goal as distant, and the path as difficult, as its predecessor. And what have they taught? or what have we learned? Absolutely nothing; the acutest modern metaphysician knows not one whit more about the human mind, than did the disciples of Pythagoras.

If we confine our observation to comparatively modern times, "we find Dr. Thomas Reid overturning the philosophy of Locke and Hume; Stewart, while he illustrated Reid, differed from him in many important particulars; and recently, Dr. Thomas Brown has attacked with powerful eloquence and profundity, the whole fabric of Stewart, which already totters to its fall. The very existence of the most common and familiar faculties of the mind is debated among these philosophers. Stewart maintains attention to be a faculty; but this is denied by Brown. Perception, conception, and memory, Stewart also treats of as original powers; while Dr. Brown denies their title to that appellation. And again, Reid, Stewart, and Brown admit the existence of moral emotions; but Hobbes, Mandeville, Paley, and others

resolve the sentiment of right and wrong into a regard to our own good,—perception of utility,—obedience to human laws,—or to the Divine command."

It has been already observed that different minds, are differently constituted. A science of mind, therefore, to be worthy of the name, ought not only to unfold to us the number and the nature of our primitive powers, but also how these powers are severally combined, in order to produce every modification, every phase and aspect of character, from that of the midnight assassin, in whose breast the spark of pity never shone, to the bosom glowing with piety and benevolence; and from that pitiable specimen of humanity, the idiot, to the gigantic intellect of a Newton or a Bacon. This, I need scarcely remind you, no metaphysical system has ever even attempted to accomplish.

Thus we see the extremely unsatisfactory condition of mental philosophy before Phrenology arose. With its rise, light and life were spread abroad, and although the day is doubtless still only dawning, yet one after another difficulties are disappearing, and previously inexplicable problems are being solved.

The circumstances which gave rise to its discovery were as follow: Dr. Gall, when very young, was extremely observant, and could not help being struck with the diversity of talent among his school-fellows. Some were remarkable for the ease, with which they acquired proficiency in mathematics; while others excelled in composition, drawing, or the languages: and it frequently happened that those who were most highly gifted in one direction, scarcely attained mediocrity in any other. He observed also that a similar diversity existed in regard to the affections. Some of his companions appeared naturally kind and amiable, while others were cruel and vindictive; some were inflexible and obstinate, while others were vacillating and easily persuaded; some were proud and haughty, while others were diffident and retiring: each, indeed, appeared to have a dis-

tinct personal character of his own (though all were receiving the same education), which he found with the growth of years only modified but not radically changed by force of circumstances.

Of his school-fellows generally, those with whom he had the greatest difficulty in competing, were those who excelled in verbal memory, and in the acquisition of languages; these frequently, by their aptitude for repeating, took from him the honourable position he had obtained by the merits of his original compositions, and he observed that most of these were remarkable for a peculiar prominence about the eyes. He was struck with the coincidence, but at first viewed it merely as such. On his removal to college, however, he discovered that the same rule held good; that the "ox-eyed" students, as he called them, bore away nearly all the prizes for languages. This he pointed out to his companions, who perceived it equally with himself; and he now began to reflect that there must be some connection between the talent itself, and the sign by which it appeared to be distinguished.

About this time he was frequently accompanied in those rambles in the woods and fields in which his fondness for natural history led him to delight, by a brother collegian, who had a remarkable facility for finding any place he had once visited, even if in the recesses of a wood, or however intricate might be the road thereto,—a talent in which Gall found himself very deficient. On closely noticing his companion's forehead, he discovered two prominences immediately above the root of the nose, which were wanting in his own case. He began to reflect as to the probability of the power of remembering places being indicated by an external sign, as he had already observed in the case of verbal memory; and, extending his observations, concluded that such was really the case. The question then naturally forced itself upon his mind, why may not all the other powers of the affections, as well as the intellect, be

similarly manifested? And with the enthusiasm of his nature, he betook himself to a diligent course of reading on the subject. The writings of the metaphysicians, instead of enlightening, only served to confuse him; for in the speculations of the schoolmen, he met with no information whatever, on the subject of particular talents or particular affections; but found them only speaking of certain so-called general principles, such as perception, association, memory, &c., which by some species of mental chemistry were supposed to forge and evolve our various powers, sentiments, and emotions. This was to him extremely unsatisfactory, so he at once abandoned all books, save that glorious book, the Book of Nature and of Fact: a book always open, yet how often left unexamined; and with patience and industry carefully observed such facts as came before him.

Being a friend of Dr. Nord, a physician to a lunatic asylum in Vienna, he had ample opportunities of visiting the insane. He went also to schools and prisons, gained introductions to the seats of learning, and to the courts of princes, and wherever he could hear of an individual remarkable either morally or intellectually, there was Dr. Gall to make his observations, and, if possible, to model his head. He collected skulls and dissected brains, particularly of those whose characters he had known during life, whenever permission could be obtained; and the result of his observations, (of the extent and laboriousness of which, few can form any adequate idea,) was the conviction that every original faculty, whether of the intellect, the moral sentiments, or the animal instincts and passions, was manifested by a distinct portion of the brain, the comparative preponderance of which could be ascertained by cranial development.

And here let us pause for a moment to retrace the successive steps by which Gall was led to this great discovery. He did not, as some of his opponents insinuate, take a skull or cast in his hand, and after dividing and subdividing its surface into a series of squares, circles, and triangles, arbi-

trarily allot one function to one portion, and another function to another. On the contrary, Gall's procedure was in strict accordance with the rules of inductive philosophy. His first step was the observation of a singular fact, at first supposed to be a mere coincidence, but at length proved to be a general law of nature. He next observed a similar fact, connected with another mental power, and another portion of the brain, which likewise proved of universal application; and it was only when several of these facts had been observed and abundantly confirmed, that he ventured to deduce from them anything like general principles. Gall, therefore, was no theorist, for his observations were made without reference to any bearing, which they might exercise on existing systems of philosophy; and if any one deserves the name of a true inductive philosopher, a genuine son of Bacon,—that man was Dr. Gall.

In the year 1796 Gall first divulged his system in a course of lectures in Vienna. And how was it received? Humanity may well blush for the answer to this question. It was received, as we have seen in my last lecture, with opposition, contempt, and persecution. Germany, instead of loading her master-spirit with proud honours, first interdicted him from lecturing, and at last drove him into exile; but though he and his followers were persecuted and ridiculed, the cause for which they suffered outlived the storm. Truth is always invincible; and past experience proves that its expansive power, like that of steam, increases in the same ratio as that of the force employed for its compression. Hence Phrenology advanced. Nay, the very weapons that were used against it became, as it were, the chariot wheels on which it rode triumphantly into popular estimation; for the uproar which was caused by its introduction, and the virulent attacks from time to time made upon it, led many to examine its claims, who otherwise would have been indifferent to its pretensions,—and candid examination is all that this, or any other branch of truth, can

possibly require. This conversion of a single individual, and he so humble an one as your lecturer, can be of little interest to you, or of importance to the science which he advocates; but as my own case is doubtless a type of a numerous class, I will just observe, that I knew nothing whatever of Phrenology, until one evening the wife of a clergyman, in the course of conversation introduced the subject, presenting a most ludicrous picture of the Science of "Bumps," and describing it as very amusing, if it were not so very dangerous. This representation roused my curiosity and induced me to examine it: my chief object being, I admit, to enjoy a joke at the expense of these credulous and, as I supposed, pseudo-philosophers. I was astonished, however, to find at a glance, that whether true or false, it was at least rational and consistent; and an appeal to Nature, which alone could be the arbiter in the matter, convinced me of its general truth. After this, of course, I could not for a moment hesitate to range myself under its goodly banners.

The advance which Phrenology has now made, affords indeed matter of congratulation to its friends; for the sublime discoveries of Sir Isaac Newton had not made nearly so rapid progress in the same length of time. Not only has it now spread over the length and breadth of Britain, gradually leavening our literature, making its effects felt in improved views of education, criminal jurisprudence, management of the insane and other matters, and often shewing its well-known face in the pulpit, the senate, and at the bar; but in one instance at least a professorship has been founded and endowed by our northern neighbours (who generally take the lead of us in science) in connexion with the Glasgow University, which is the first formal recognition of its claims as a branch of academical education, and is doubtless the precursor of others. The whole continent of Europe also is rapidly submitting to its sway, not excepting that one dark spot, Germany, which, though it refused to hear its truths from the lips of its immortal founder, has never-

theless sat with admiring attention at the feet of his most eminent British disciple, Mr. George Combe (who, almost with an air of romance, acquired a knowledge of the German language, in order that he might carry back to those shores, and enunciate to Germans in their own tongue, the truths revealed by their neglected countryman); and Gall's own town, Vienna, now produces a spirited periodical devoted to the subject. The vast Atlantic, too, has formed no barrier to its progress. Its billows have wafted the new philosophy to the islands of the Indies, and the mighty continent of the western world, where numerous Phrenological professorships have long been founded, and thousands of its intelligent advocates may be met with. It has even a resting-place amid the wilds of Nova Scotia. And nearer home it is not less remarkable, that in spite of Papal opposition (for by the late Pope Mr. Combe's works have been expressly proscribed) it has pierced the darkness that broods and nestles over the cities of Greece and Rome.

Nor can the advance of Phrenology be attributed to anything but the impulsive force of its own truthfulness; for, from the first, it has had two classes of opponents to contend with, the one on philosophical, the other on religious grounds, and much talent and much piety have been uselessly arrayed against it. The philosophical opponents have entirely failed, because instead of bringing hostile facts, the weapons of their warfare have been mere abstract reasonings. Now these, however ingenious in themselves, can never determine the truthfulness of a science of observation and fact. Phrenology is emphatically such: by observation of facts was it discovered, by the careful registering of facts was it built up, and by facts and facts alone it claims to be tried. There was, however, one philosophical opponent, Dr. Vimont, who after hearing Gall lecture in Paris, thought that nothing more was necessary to overturn the whole doctrine than the collection of a number of skulls of

birds and the lower animals. But the weapons with which he was about to demolish Phrenology, became the instruments of his own conversion; and the result was, that he gave to the world the most elaborate work on Comparative Phrenology that has ever yet appeared. The second class of objections, viz., the religious, I need not refer to here, as the preceding lecture upon "Phrenology in relation to Religion," was almost exclusively devoted to that important subject.

And now, after this brief examination of the unsatisfactory state of mental science, prior to the days of Gall, and a hurried glance at the rise, progress, and present position of Phrenology, we advance to the chief purport of this lecture:—an examination one by one of the principles on which this science rests. All science, properly so called, is a knowledge of facts, so arranged and classified as to lead to the development of general laws and principles, which constitute its fundamental data. And the first general truth or principle of Phrenology is that "the brain is the organ of the mind."

Man, as he exists in this world, is a compound being, consisting of mind, or soul, and body, in a state of mysterious combination, and exerting a reciprocal influence on each other. The passions of love, fear, anger, and grief, though exclusively mental, have a serious influence on the health of the body; while bodily disease, or bodily fatigue, have a similarly depressing effect upon the mind. Now of the nature of this mind, or soul, or thinking principle, science says nothing; but whatever it may be, it is that which constitutes the real man,—the immortal being,—and while placed in a material world, it requires a material apparatus wherewith to act. The brain constitutes this apparatus, or, in other words, the brain is the organ or the instrument by means of which the mind, so long as it inhabits the body, performs its operations. And in thus speaking of mind and brain, we do not by any means confound the two. The harp is an instrument of music, but it is not music; the eye is the organ of sight, but no one would pronounce it to be

sight itself. The relative position of mind and brain may be very well illustrated by that of steam and the steam-engine. The steam is the cause,—the "*primum mobile*,"—the motive power, while the engine is the instrument by which it is made available and practically useful; and it would be as obviously unfair to accuse engineers of confounding the steam and its engine, as to accuse Phrenologists of confounding the mind and the brain.

The arguments in favour of this proposition are extremely numerous. In the first place, consciousness localizes the mind to the head. There is in every man an intuitive something, which tells him that his mind is more intimately connected with the brain, than with any other portion of the body. The ancients appear to have recognized this fact in many of their mythological fables, which contain in figurative language either shrewd guesses at truths with which they had not become fully conversant, or, as is more probable, convey truths with which they had once been acquainted, but which in the progress of their degeneracy they had lost, save in the mythological garb in which we now find them. The story of Minerva, the Goddess of Wisdom, springing self-created from the brain of Jupiter, indicates their knowledge of this truth, and teaches a deeper lesson than can be seen upon the surface. Poets also have, in almost all ages, recognized it. Shakspeare has a most striking passage in which it is stated, with philosophical accuracy and minuteness:

> "My brain I'll prove the female to my soul,
> My soul the father; and these two beget
> A generation of still breeding thoughts."

Byron calls the head

> "The dome of thought, the palace of the soul."

Even the vulgar and uneducated recognize this truth in the terms which they unwittingly employ to designate

various classes of individuals. Clever people are described as "long-headed," and "having plenty of brains;" madmen are said to be "cracked," "wrong in the head," &c.; while stupid persons are said to be "addle-headed," and obtain the honourable and expressive epithets of "thick-heads" and "numskulls."

This principle, however, does not rest solely on the evidence of consciousness; it can be proved by most conclusive facts.

First: A comparatively slight blow on the head produces insensibility, sometimes permanent insanity, which is not the case with other parts of the body. The brains of the insane also on dissection generally present evidences of disease.

Secondly: Compression of the brain invariably produces instant insensibility. Richerand mentions a case in which a portion of the skull had been lost, and the membranes covering the brain were exposed to view. In washing away some purulent matter which had there accumulated, he happened to press a little harder than usual, when, though the patient was conversing with him at the time, instant insensibility ensued; on removing the pressure consciousness returned, and the patient resumed the conversation at the precise point, at which it was interrupted. As no pain was caused, and no danger incurred, this was repeated three times, uniformly with the same result.

A remarkable case occurred at Ironbridge, in Shropshire. A man who was employed in a coal-mine in that district, was struck on the head by a piece of coal falling from the mouth of the pit, in which he was working. Insensibility ensued, and in a death-like state he was brought to the surface and carried home. After a careful examination, no fracture of the skull could be discovered. For eight days he remained in the same state; at the expiration of which, after repeated examinations, a very slight depression, or indentation upon the skull, was observed in the posterior region immediately

above the occipital spine. He was trepanned, and in an instant the man's countenance resumed its wonted expression. Turning his eyes upwards, he cried "pu' up the bonds," which being interpreted, meant "raise the chains" to the end of which was attached the skip in which he himself had been, at the time of the accident. In this case all the mental operations had been suspended for eight days, and might have continued so longer, had not the pressure of a portion of the skull upon the brain been removed.

But a still more striking case is recorded by Sir Astley Cooper. A man named Jones was hurt on the head, on board a vessel cruising in the Mediterranean. He lay in a state of insensibility for several months at Gibraltar, was then sent to Deptford, and finally to London. He was trepanned at St. Thomas's Hospital, and in three hours after the operation was able to sit up. In four days he was able to converse, and the last occurrence which he remembered was the capture of a prize at sea, thirteen months before. Here then we see every faculty of the mind, including even consciousness, thrown into a state of torpidity, and so remaining for more than a year, from what? The pressure on the brain of a small piece of bone. This case alone proves the dependance of the mental operations upon the brain.

Thirdly: The phenomena observed when the brain is exposed to view, are strikingly confirmatory of this proposition. I quote the following from many examples. "Dr. Pierquin had a patient in one of the hospitals of Montpelier, who had lost a large portion of her scalp, skull, and dura mater, so that a corresponding portion of the brain was subject to inspection. When she was in a dreamless sleep, her brain was motionless, and lay within the cranium. When her sleep was imperfect, or she was agitated by dreams, her brain moved and protruded without the cranium, forming cerebral hernia. In vivid dreams, reported as such by herself, the protrusion was considerable; and when she was

perfectly awake, especially if engaged in active thought or sprightly conversation, it was still greater." There are other cases of a similar nature, equally well authenticated, and they require no comment.

Fourthly: This proposition is much supported by the fact, that all the mental operations may be suspended by the action on the brain of opium, and intoxicating drinks. This appears most conclusively to refute such writers as Lords Brougham and Jeffreys; who maintain that the mind neither has nor requires any material apparatus, "except for the perception of material objects, or the spontaneous movement of the body." Now we all know that the mind, on the wings of a poetic imagination, can soar far, far above this sublunary sphere, and revelling amid the regions of uncreated beauty, "body forth the forms of things unknown, and give to airy nothing a local habitation and a name." The imagination, therefore, is one of those powers which, according to such writers, requires no material apparatus for its manifestation; and yet, strange to say, it can be roused to a state of the highest excitement by the action on the brain of a few grains of a simple drug, or, together with all the powers, be completely prostrated and lulled to sleep by a few grains more.

Fifthly: How does it happen, if the mind be not most intimately connected with the brain, that we never see the one except in company with the other? With a powerful and well-developed mind, we find associated a well-developed brain; while, with a defective brain, we always discover defective mental endowment; and if the brain be very small, idiocy is the inevitable result.

The average weight of the male brain is about 3 lbs. $5\frac{1}{2}$ oz. that of the female from 3 to 4 ounces less, and the average circumference of the adult cranium is $21\frac{1}{2}$ or 22 inches. The brain of the celebrated Manchester idiot, James Lowe, weighed only $13\frac{1}{2}$ oz. What a contrast does this afford with those of Byron, weighing $3\frac{1}{2}$ lbs.; of Cuvier, weighing

3 lbs. 10½ oz.; or of Dr. Abercrombie, which was of the enormous weight of 4 lbs! Lowe's head measured 16½ inches at its greatest circumference; while O'Connell's, supposed to be the largest known, not diseased, was 25 inches round.

It does not follow from these remarks, that a moderate sized, or even a large brain, may not become idiotic from disease, though some active kind of insanity more generally occurs: but there is not a single instance on record, of an individual manifesting the enormous mental energies of a Bacon, Franklin, or Cuvier, with a small head; nor can a single example be produced of an adult head, measuring less than 17 inches in circumference, which was not idiotic.

To proceed to the second principle, on which Phrenology is based. If the brain, viewed as a whole, be the organ of the mind, when we consider the number and variety of the mental operations, when we survey the various passions of love, fear, anger, and revenge, or the moral sentiments of hope, benevolence, religious adoration, and others; or the numerous intellectual powers of wit, music, calculation, and reason; the question naturally arises, "How can one viscus, like the brain, manifest them all?" To this, Phrenology gives a philosophical answer, that the brain is multiple,—that while the entire brain is the entire apparatus of the mind; yet this apparatus itself is not simple but compound, and particular faculties of the mind are manifested by different portions of this cerebral apparatus. As the various and distinct strings in the harp are employed for the production of different kinds of sounds, so the various portions of the brain are employed to produce the various classes of powers and emotions.

The arguments in favour of this principle are extremely numerous. In the first place, it is quite in accordance with analogy. There is not a single instance in the animal economy of a distinct function being performed, without a distinct and special organ being appropriated to its service.

The eye, for example, is the organ of sight, but it does not hear; the lungs have their appropriate function, but they do not digest; nor does the stomach secrete bile, nor the liver oxygenate the blood. And, in conformity with this law, wherever we find a compound function manifested, there we have also a compound apparatus for the purpose. The tongue has the threefold function of sensation or feeling, motion, and taste; and to accomplish these it is supplied with three distinct nerves, one for the purpose of feeling, another for motion, and the third for taste. The spinal column again has to subserve the triple function of motion, respiration, and sensation; and, accordingly, it is composed of three double columns: the anterior for motion, the middle one for respiration, and the posterior for sensation. If, therefore, the emotion of love be specifically different from that of fear or anger, or if the faculty of music be not identical with, nor a modification of those of reason and arithmetical calculation, it is in accordance with analogy, that these several mental operations, should have distinct organs allotted for their performance. This principle is the one, which has been most impugned by anti-phrenological writers; and in a laboured paper in the Encyclopædia Britannica, Dr. Peter Mark Roget contradicts the statement that it is in accordance with analogy, bringing forward, what was then supposed to be the fact, that the nerves perform the double function of volition and sensation. The more recent researches, however, of Sir Charles Bell, have proved that what was previously supposed to be one nerve, is in reality two, bound up together in one sheath, each possessing a separate function. Thus Dr. Roget's illustrative exception falls to the ground.

As a second argument in favour of this principle, it may be observed that the powers are successively developed. The emotions of love and fear, for instance, appear long before those of religious adoration; and children can invariably perceive, long before they can reflect upon the perceptions

they have formed. This should not be the case if the brain were a single organ; for as soon as it were sufficiently developed to manifest one class of powers, it would equally manifest all the others.

Thirdly: We know that genius exists, and that it is generally partial. This the metaphysical writers found so difficult to explain by their theories, that they were compelled to adopt a bold course, and deny its existence altogether. Now this may be an easy mode of getting over an obstinate reality, but not one that the earnest seeker after truth would willingly adopt. The discoveries would have been small in reference to Light, Heat, and Electricity,—those subtle and mysterious agents, which from their inappreciable and imponderable nature, as well as the magnitude of their effects, may be said to form the connecting links between mind and matter—had the chemist disbelieved the evidence of his senses and denied their existence.

Let us see what metaphysicians say on the subject. Dr. Johnson observes, that "he knows of no such thing as genius, for a man may with the same leg walk east as easily as he can walk west." None of us will be disposed to dispute this as a statement of fact; but, with the greatest deference to the great philologist, it is difficult to see its application as an illustration of genius. For an individual gifted with great talents or genius for two branches of the arts or sciences, might, when tired of exercising one pursuit, derive great relief from having recourse to the other; when wearied and exhausted by poring over abstruse mathematical problems, he might find the most delightful recreation in music, poetry, or painting; but he, methinks, must be a "rara avis in terris" who, when tired of walking east, can derive very much relief from reversing his steps and walking west.

If we come to the modern school of philosophy, we shall not find it more satisfactory. Dugald Stewart says, "a genius for poetry, painting, mathematics, and so forth, is

gradually formed by particular habits of study or of business;" and again, "even a poetic imagination is not the gift of nature, but the result of acquired habits, aided by favourable circumstances." Now what were, what could have been, the particular habits of study or of business, on the part of the infants Cowley, Milton, and Pope, who according to Dr. Johnson himself, "may be said to have lisped in numbers?" What habits of study or of business could have been contracted by Mozart, who at six years of age composed music and led orchestras? by Pascal, who when eight years old, could perceive the propositions of Euclid, without requiring to demonstrate and work them out? by Hadyn, who was celebrated at twelve? by Handel, who at fourteen composed an opera which had a run of thirty nights? or by Newton, who when a child constructed windmills and watches? Then again, the idea of a "poetic imagination" being cooked up by habits or any other means, is so preposterously absurd, that even the ancients rejected it with disdain; and we find Ovid exclaiming, as though in honest indignation, "Poeta nascitur, non fit." And in reference to "favourable circumstances," as a means of manufacturing genius, what were the "favourable circumstances" which surrounded Arkwright, when amid soap-suds and lather-boxes, with which he gained a precarious livelihood (his wife, moreover, having changed the character of help-mate for that of tormentor, mopping out his diagrams as often as they were drawn upon his poor barber's shop floor), he conceived and matured his invention of the cotton machine? What were the "favourable circumstances" in the case of Professor Lee, the first oriental linguist in Europe, when earning a scanty pittance as a working carpenter in Shrewsbury? What were the "favourable circumstances" of honest William Howitt, among the dirty retorts and physic bottles of his little shop in Nottingham? or of his kindred spirit Thomas Miller, when toiling for daily bread among his wicker baskets? What were they

with poor Kirk White, with his gentle and sensitive spirit crushed and wounded by his brutal father in the butcher's shop? or with Scotland's Shakspeare, Burns, following the plough and gauging ale barrels? Oh! say no more of "favourable circumstances." If poverty be one, genius has frequently had the full benefit of that—if the frowns of friends and the sneers of foes be favourable, genius has also had the advantage of these—and if the opposition of the world and the petty jealousy of those occupying the high places in science be "favourable circumstances," then has genius, particularly when in humble life, been blessed with these. But no! the history of genius in every age, and in every clime, will show that, instead of having been formed by favourable circumstances, it has invariably risen superior to unfavourable circumstances; and that though hemmed in by difficulties, huge as the mountain masses of Etna, or Vesuvius, yet, like the volcanic fire that glows within, and ever and anon surmounts their summits, it will at last burst forth in all the magnificence of self-sustaining energy, to the wonder and admiration of the world.

Genius then exists, and whatever metaphysicians may say to the contrary, is generally partial, which should not be the case if the brain were a single organ; inasmuch as, were such the fact, as soon as it could manifest one power with unusual energy, it should similarly manifest all the others.

Fourthly: The phenomena of insanity, especially those of monomania, are so palpably irreconcileable with the idea of the brain being a single organ, that even Pinel himself (no friend to Phrenology) admits they can only be explained on the principle of the brain being multiple. Insanity, like genius, is very seldom general in its character; but extends only to some of the powers, leaving the rest unimpaired.

In the majority of cases insanity partakes of a specific character, and appears to be confined to a few of the powers only. Frequently, for example, self-esteem appears to be the deranged organ, while the rest are not so. My own

little circle of acquaintance has furnished me with two or three instances of the same kind of insanity. One is that of a most intelligent person, who conceived the idea that he was a descendant of the Stuarts, calling his son and daughter "the little prince and princess," and constantly expressing the hope that they would behave according to their exalted position. Determined to "keep up his dignity," by living in a princely style, yet not having the advantage of a princely purse, his friends, to prevent the ruin of his family, placed him in confinement, although in every other respect he appeared perfectly sane.

Illustrations of other kinds of insanity might be given, such as the melancholic or hypochondriac, and that most horrible of all, the homicidal mania; but I will not weary you with details. Sufficient has been said to show, that insanity is generally more or less partial, which could not be the case were the brain a single organ; for if all the manifestations were produced by a single instrument, when that instrument became so impaired as to manifest one deranged function, all the others would be similarly affected.

Fifthly: The phenomena of dreaming, always inexplicable to the metaphysicians, and yet far from being perfectly understood, strongly confirm the principle for which we are contending. There is little doubt that dreams arise from the activity of some of the powers of the mind while the rest are asleep; for if all were awake, there could be no sleep, and if all were asleep there could be no dream. Milton, with that comprehensiveness of intellect for which he was so remarkable, comes very near to the true philosophy of dreaming. In the Fifth Book of "Paradise Lost," we find Adam consoling Eve, after her troubled dream, with the following lucid explanation of the matter:—

"Nor can I like
This uncouth dream, of evil sprung, I fear;
Yet evil whence? in thee can harbour none,

Created pure. But know that in the soul
Are many lesser faculties, that serve
Reason as chief; among these Fancy next
Her office holds; of all external things,
Which the five watchful senses represent,
She forms imaginations, airy shapes,
Which, Reason joining or disjoining, frames
All what we affirm, or what deny, and call
Our knowledge or opinion; then retires
Into her private cell when nature rests.
Oft in her absence, mimic Fancy wakes
To imitate her; but misjoining shapes
Wild work produces oft, and most in dreams,
Ill matching words and deeds long past or late."

The idea of Reason retiring into her private cell, and Fancy waking in her absence is purely Phrenological. It is thus that a naturally honest man may become transformed into a thief during sleep, a kind man be engaged in deeds of cruelty and bloodshed, and an affectionate wife be playing the roaring termagant. This could not be the case were the brain a single organ, for then all must be awake or all must be asleep. Why certain powers should be awake, while the others are asleep, Phrenology does not profess to explain; it merely states that dreaming is produced by the activity of certain organs, that such and such dreams are occasioned by the activity of such and such organs, while the rest are in a state of quiescence. The cause of that activity forms no part of the present inquiry, and would lead us far from our subject. Some there are who, like Baxter in his Treatise on the Immortality of the Soul, have supposed that spirits play with, or assault the soul during sleep, according as the dream is of an agreeable or disagreeable character; but this is touching on psychological not phrenological ground.

We will pass over many other arguments that might be adduced from the phenomena afforded by partial idiocy, partial memory, partial injuries of the brain, &c., and come to one of a still more tangible character. If in a healthy head you observe any one portion, relatively much

more developed than the others, you will find some one particular power, or sentiment, forming an equally prominent feature in the character. Take, for example, the cast of Scott—one spot in the centre of his head strikes every observer by its towering height. It is the organ of Veneration; and every page of his works, together with the whole course of his life, shows how largely that power entered into his mental constitution. Next take the bust of Joseph Hume, and there is an equal prominence, not in the same spot, but immediately behind that observed in Scott. It is the organ of Firmness; and Mr. Hume's public career may be safely referred to, to corroborate the correspondence of his character. Again, in the bust of the amiable Eustache, who, during the insurrection of the blacks in St. Domingo, saved the lives of some hundreds of the whites, at the daily risk of his own; and who, when his master became blind, learned in his old age to read, that he might be able to amuse him, and whose character was publicly attested by the prize of Virtue being awarded to him in Paris in 1832,—there is a similar elevation, not like Mr. Hume's behind, but immediately before that in Sir Walter Scott's. It is the organ of Benevolence which was so prominently manifested.

If you take two heads generally resembling each other, but differing in one particular region, you will find the natural characters to correspond therewith; the difference in character, being in the same direction as that observed in cerebral development. Place the head of Eustache in juxtaposition with that of Gottfried, the murderess, who was executed in Bremen in 1828, for having poisoned both her parents, her first and second husbands, a lover, and seven other individuals. In the latter, instead of the elevation at Benevolence observable in Eustache, the part appears to have been almost cut off. The depression in the one case is as remarkable, as the extraordinary prominence in the

other. The head of Hare also affords an equally striking contrast with that of Eustache.

To take another group, the casts of Greenacre and Haggart, both notorious thieves as well as murderers, may be examined. A great elevation at Firmness is observable; while the organs on either side, those of Conscientiousness or Justice, are so defective, that the sloping appearance of the head almost resembles the gable end of a roof. Contrast these casts with that of Mrs. H., a lady whose Conscientiousness was so active as to be quite a morbid feeling, and whose want of Firmness rendered her almost unfit for the daily duties of life; and we cannot fail to be struck, not only with the difference in the two cases, but with the correspondence of character with development in both.

In the cast of Malibran, and of all eminent musicians, there is a remarkable fulness on either side of the forehead. It is the organ of Tune. Another cast, that of a female, named Ann Ormerod, instead of presenting a remarkable fulness, has a most singular depression at that spot, and on inquiring we find, that there was an utter inability to appreciate music. After a lengthened course of tuition at the Blind Asylum in Liverpool, she was given up as a hopeless case. According to her own confession, Handel's finest Oratorios only "reminded her of distant thunder, or of the rumbling of heavy waggons over the pavement."

Now these three groups of examples are not isolated cases, but are mere types of general classes of facts, which might be multiplied *ad infinitum*, as any one may discover by first qualifying himself for the task, and then examining the living specimens by which he is surrounded; and as they tell their own tale, it would be superfluous in me to point out farther, how they demonstrate the truth of our proposition, that the various powers are manifested by different portions of the brain.

As this division of the brain into a group of organs, is the grand distinctive feature of Phrenology, so this prin-

ciple of our science is the one which has met with the most opposition—an opposition chiefly grounded upon the fact, that dissection of the brain reveals no partitions nor lines of demarcation between the several organs, so as to justify the idea of their functions being distinct. This objection, however, is more plausible than real. Nature seldom favours us with lines of demarcation. We see in a landscape a lofty mountain, rising in solitary grandeur from the plain; but in vain do we look for the precise spot where the plain leaves off and the mountain begins. If we raise our eyes heavenwards to the rainbow stretched across the sky, we can discern the colours of which it is composed; but in vain do we look for the precise point where each one terminates. The spinal marrow, which is a ramification of the brain itself, consists, as already stated, of three double columns, each with a separate function; but the most careful investigation has failed to detect any lines of demarcation. This, therefore, is no argument why the brain should not be considered as multiple, nor containing a number of separate organs. Many of our most accomplished anatomists, as Cuvier, Magendie, and Sir Charles Bell, have admitted the truth of this proposition, without acceding to Phrenology generally.

The third principle in our science is that size, whether of the entire brain or any of its parts, is (other conditions being equal) a measure of power; that is, that the power of a faculty is in the same ratio as the size of the organ by which it is manifested. Thus with a large head great power will be manifested, with a small one the reverse; but the nature of the power depends upon regional development, or in which of the regions of the brain the great size or deficiency is found. In looking at the casts of Williams, the Chirk murderer, and of Dr. Spurzheim, we find that both heads were very large, and therefore great power must have been, and actually was associated with them. And in ascertaining the nature of this power, we discover that the

large size of Spurzheim's head arose entirely from the splendid development of his moral and intellectual regions; while these were lamentably deficient in the cast of Williams, which was one huge mass of animal propensity. Though, therefore, both heads were powerful;—one was powerful morally and intellectually, the other only in animalism and passion. The casts of Hare, and Sir W. Scott present a similar contrast. Or, to take female examples, those of the murderesses Gottfried and M'Innes, may be compared with that of Malibran, with the same result. We see, therefore, that a head, large in the aggregate, may not be intellectually powerful, and, *vice versâ*, a head small, on the whole, may have the intellectual region large. Thus Goldsmith's description of his schoolmaster may have been literally correct when he says,—

> "Still the wonder grew
> How one small head could carry all he knew."

And it is an extension, not a contradiction, of the principle, showing that what is true of the brain as a whole, is also true of its parts.

That size is a measure of power, *cæteris paribus*, is a general law of nature. A large bar of iron is stronger than a small one; and though with different qualities and processes of manufacture, a small bar of iron may be stronger than a large one, this does not affect the question, since the conditions are not equal. So, a large brain if diseased, or of a phlegmatic temperament, may be inferior in power to a smaller one which is healthy and of an active temperament; but in two brains equally healthy and equally active, only of different sizes, the advantage, as in the two bars of iron or of wood, will be in favour of the larger. In the animal world, the same rule prevails. Great strength of bone is always associated with great size of bone, and great muscular power with large muscles; and so universal is this law, that we sometimes meet with the most singular arrangements to comply with it. In aquatic animals the bones are solid; but with land animals, which

move in the rarer medium of the air, solid bones would be too heavy for use. What, then, is done when great bony strength is required on land? Does nature forget her general law, or by any means evade it? No! Nature's laws admit of no exception. Size is still adopted as the means of power; but instead of being solid, the bones are cylindrical and filled with marrow, so that great size is attained, without too much gravity. In birds, again, size is still in proportion to the power required. Their bones are made hollow and extremely light, and capable of inflation from the chest, so as not to impede their rapid flight; and where very large muscles would be an incumbrance, and yet power must be attained, compact muscles with very large nerves to move them, are supplied. The nerves themselves are subject to the same law. The North American Indians and Ethiopians are said to possess wonderful acuteness of smell; and according to Blumenbach, their nasal organs are of extraordinary size. In reference to the lower animals, "Georget, an esteemed physiological writer, affirms that 'the volume of the organs bears an uniform relation, in all the different animals, to the extent and force of the sensations and movements over which they preside; thus the nerve of smell in the dog is larger than the fine nerves of the external senses in man.' The surface of the mucous membrane of the ethmoidal bone, on which the nerve of smell is ramified, is computed to extend in man to twenty square inches, in the seal to a hundred and twenty. The nerve of smell is small in man and in the monkey tribe; scarcely, if at all, perceptible in the dolphin; large in the dog and the horse; and altogether enormous in the whale and skate, in which it actually exceeds in diameter the spinal marrow itself. In the mole it is of extraordinary size, while the optic nerve is very small. In the eagle the reverse is observed, the optic nerve being very large and the olfactory small. Most animals excel man in the acuteness of their hearing, and accordingly it is a fact that the

auditory nerve in the sheep, the cow, the horse, &c., greatly exceeds the size of the same nerve in man. In some birds of prey which are known to possess great sensibility of taste, the palate is found to be very copiously supplied with nerves and filaments."—Combe.

It would be superfluous to multiply examples farther. Finding, then, the rule that size, *cæteris paribus*, is an universal measure of power, not only extending through the whole range of inanimate creation, but applying with equal force to the bones and muscles of all living creatures, and maintaining, in the case of the nerves of all the senses, a similar position, would you not consider that we were presenting a draft to no small amount on your credulity, if we said that the brain was an exception to this law? And yet for maintaining the reverse of this, for insisting that God's laws, unlike man's, have no exception, Phrenology has ever been a target for ignorance and pedantry to fire its shafts at.

We have yet more direct evidence in the case of the brain, from the fact, previously adduced, that extreme smallness of brain is an invariable cause of idiocy, and that all adult heads under seventeen inches in circumference, are irretrievably idiotic. On the other hand, all those individuals, with whom history or philosophy has made us acquainted, who have been remarkable for gigantic power of mind, have possessed large brains. We may find, it is true, with a moderate sized brain, the brightest virtues frequently associated; the individual may possess the most unexceptionable moral character, be adorned by the most profound erudition and accomplished scholarship, and constitute an ornament and blessing to society. But when, not mere cleverness nor amiability has been manifested, but a vast mental energy that could rise through insuperable difficulties to other minds, and support itself, like leviathan of old, amidst the deepest and most angry billows,—a gigantic power that could carry captive other men, and make its

influence felt upon its country and the world:—this has never been found except in connection with a great mass of brain. In the glowing language of the lamented Macknish, "Pericles, who wielded at will the fierce democracy of Athens; Mirabeau, whose thunders shook the National Assembly of France; Danton, who rode like an evil spirit on the whirlwind of the French Revolution; Franklin, who by the calm power of his wisdom and virtue guided the legislature of America; had all of them heads of tremendous size. There is not a single instance on record, of an individual wielding multitudes, like the Irish agitator, or grappling triumphantly with the dangers of a troubled age, like the iron-hearted Cromwell, or raising himself from a private station to the most splendid throne in Europe, like the Emperor Napoleon, with a small or even moderate-sized brain." To accomplish such feats as these, an enormous power and force of character are required, which are inseparable from a large brain.

This distinction extends from individuals to nations. Large-brained nations are always found to manifest a decided superiority in point of power, over their smaller-brained cotemporaries. See, for example, the facility with which the small-brained Hindoos were conquered, and the ease with which a few thousand Europeans hold millions of them in subjection. The heads of the American aborigines, again, are smaller than those of the Europeans, and we see at the present day, how rapidly they are disappearing before the encroachments of the latter. The Carib head, on the other hand, is large and active, and we all know the difficulty with which their conquest was achieved. The large size of the Scotch brain also was doubtless one reason, if not the chief, why their permanent subjugation by the English was found to be impossible.

Had time permitted, it was my intention to have explained the modifying influences of education, temperament, external circumstances, &c.; but this, my present limits

forbid. I proceed to the investigation of the only remaining branch of our inquiry, viz.: How far is the size of the various organs, discoverable during life? Is the skull really an index to the shape and size of the brain lying underneath it?

To this Phrenologists unhesitatingly answer in the affirmative,—with some few exceptions shortly to be noticed. Dr. Gall, after examining some thousands of skulls, found that if the outer and inner plates did not mathematically correspond, yet they did so sufficiently for all practical purposes. This indeed we naturally expect, if we remember that the brain, not the skull, is first formed, its weight at birth being usually about ten ounces; the skull is slowly deposited over it, and its entire ossification is not completed until about the ninth year. Let us also remember what the skull is, and what are the purposes it is intended to serve. The skull is not an adamantine barrier, but a mere protection for the soft and delicate cerebral matter within; it is furnished with a regular apparatus for absorption and deposition, enabling it to yield to the pressure from within; to increase its dimensions as the brain increases, to cease when the brain ceases to grow, and to change its form as the brain changes. Of the latter fact some are doubtless still sceptical; but Mr. Deville's observations, and the independent researches of M. Bally, have abundantly established its truth.

Here, I know, the question will arise, Nicodemus-like of old,—"'How can these things be?' How can a soft and pulpy substance like the brain, determine the form of a hard bony substance like the skull?" This question is answered by asking another. "How can a still softer substance, viz., water, produce the same effect?" Yet such is known to be the case. In the disease of Hydrocephalus the skull is frequently distended by the pressure of the fluid within, to an enormous and almost incredible extent. Were such not the case, did not the skull give way in such affections, death

must inevitably and speedily ensue. There was a case of this kind that came under my own observation, in which the head of the patient had enlarged to such an extent that the vertebræ were unable to bear its weight; when she sat she had a chair with a very high back on which to rest her head, and in walking, if she leaned only slightly forwards, her heavy head overbalanced her, and she fell to the ground. The sutures of the skull were all closed, and the enlargement was quite equable, the horizontal circumference of the head being 26½ inches, or 1½ inch more than O'Connell's. If then an intruded fluid like water have the power of forcing out the skull to such enormous dimensions, is it unreasonable to suppose that the brain, its natural inhabitant, should possess the same power?

Still, as already confessed, there are some cases in which the skull is not a sufficiently accurate index to the shape and size of the cerebrum within; these, however, form no valid objection to the rule. In diseased heads it is frequently the case; and in old age the skull may become thick, thin, or uneven, or the brain may shrink without the skull giving way to the same extent. All such cases therefore Phrenology rigidly excludes from the sphere of its practical observations, all its propounders, from Gall the first down to Sydney Smith the last, having laid it down as a fundamental rule, that the Phrenologist should confine his manipulations to healthy heads, not exceeding the middle age of life.

The only real exception is that arising from the existence of the frontal sinus, a small cavity lying between the two plates of the skull, immediately above the root of the nose; and, as facts are scarce, our opponents seem inclined to make the most of it. Let us try to ascertain the exact importance to be attached to this occurrence. In the first place, it is never found under the age of twelve or fourteen years, and therefore cannot affect any predications made in the cases of children

under that age. Next, where it does exist, it can only affect one class of cases,—those of apparently large development; for if the organ appear small, the actual development, if the sinus be there, would be still smaller, so that defective power connected therewith can be predicated with perfect certainty. Again, the experienced Phrenologist can generally detect its presence, from the fact that the prominences caused thereby are altogether different from those caused by large organic development; and, even if it were not discoverable, at its greatest extent it usually only covers three or four of the minor intellectual organs, leaving the remaining four or five and thirty, perfectly untouched. As Mr. Combe well remarks, "it would be as natural to expect a snow-storm in Norway, to obstruct the road from Edinburgh to London, as to believe that a small cavity at the root of the nose could impede the observation of the organs of Firmness and Veneration at the top of the head."

And now my task is ended. It has not been my object to make you Phrenologists, for nothing but a personal observation of facts ought to do so. I have, however, examined its leading principles; and if they appear to you, as they do to me, to be sound, at least one step is taken towards its reception. And if interest be excited in any mind on the subject, let such an one go to nature in a truth-loving spirit, and I fear not the result. It is one of the advantages of Phrenology that all have the means of testing it for themselves; and that, without trouble in the selection or expenditure in the purchase of apparatus wherewith to prosecute this study. The Phrenologist's laboratory is the wide and busy world. His apparatus consists of those natural powers, be they great or small, which he gratuitously received at the hands of his Creator. The objects of his examination are his fellow men, and are spontaneously presented to him in his daily intercourse with the world: while the results of his inquiries, unlike those of most scientific

observers, bear reference to that most important of all man's possessions, his own mind; and may be made available in a thousand ways, in ameliorating the mental and moral condition of his fellow men.

December, 1839.

LECTURE VIII.

ON MEMORY.

After having on former occasions called your attention, first, to the reasonableness,—secondly, to the scientific claims,—and thirdly, to the practical utility of Phrenology, I am aware that the charge of "ne sutor ultra crepidam" will with some degree of justice be levelled against me, for thus again trespassing on your kindness by bringing forward a subject, so intimately connected with phrenology as is Memory. Two reasons, however, have co-operated in inducing me to select Memory as the subject of the present paper: first, the phenomena of partial memory having been enlisted into the service of the Phrenologists to evince the truth of their doctrine, that the brain is multiple and not a single organ; while, on the other hand, the fact of Phrenology not having yet discovered any organ with the simple function of memory, has been adduced by its opponents as a powerful argument against that science, it may be interesting to decide between these contending parties: and secondly, though Memory is an attribute possessed by all to a certain extent and perhaps desired to a greater, comparatively little is known on the subject, not only by the mass, but even by the more intelligent portion of mankind,—further than the fact that all possess it. If,

then, I rightly understand the object of a society like this, whose aim is, not only to procure a means of innocent recreation from the wearying cares of life, but also to add to our stock of knowledge, then the fact of our knowing so little about Memory, should in itself be a sufficient apology for calling your attention to it. The subject, moreover, is not devoid either of importance, or of interest; for did the uses of Memory require to be portrayed, I need only refer you to some unlucky being in whose case nature has not been lavish of this gift, and point you to the constant blunders and mistakes, to which he will be liable; or else remind you that, were it not for Memory, all the businesses of life must cease, the past would be enshrouded in as dark a vale, as is the gloomy future, the pleasures of retrospection would for ever vanish, and experience be of no avail, for we could not remember her golden precepts; nay, to use the language of Dr. Isaac Watts, "the soul would be but a poor, destitute, naked being, with an everlasting blank spread over it, except the fleeting ideas of the present moment;" and for its interesting character, you may appeal to the ancient man, whose previously upright back now stoops under the load of cares and anxieties, which have accumulated during the tedious march through life, the lustre of whose eyes has been dimmed by age, and in whose pallid cheeks the plougshare of time has left many a lasting furrow,—ask him of the scenes of his youth, bid him recall for a moment the exaggerated hopes, and fleeting pleasures of his boyhood, and dwell on the gilded prospect that then seemed spread out before him,—and then watch the pleasure that will light up his aged eyes, the flash that will suffuse his wrinkled countenance, and the youthful buoyancy that his spirits will assume, when he tells you

"That pleasant scenes are not forgot when past,
For memory oft will conjure them again,
Endearing smiles long in the heart will last,
Time tries t' efface them, but he tries in vain."

or, ask the exile from his native land, about the country of his birth,—see the slender thread of memory burst through the manacles that may oppress his frame, annihilating, as it were, the weary waste of waters whose dark waves keep him from the shores he loves, and watch the conflict that seems to agonize his breast, and the tear that will for a moment bedew his eye, as his memory reverts to the cliffs of his native shore, and those cliffs associate his mind with the hills of his paternal village, the village with his long loved home, and the home with the hearts that were his all below: or, once more, ask the bereaved one to conjure up the presence of the departed, and observe the exquisiteness of that tender pleasure which accompanies the stifled sigh, as the mind penetrates the dreary regions of the dead, and communes with the hidden tenant of the grave.

But I must not linger here. The present paper will be an attempt to answer the question, What is Memory? And to do this, my remarks must be of two kinds:—first, negative; secondly, positive. First, a refutation of the metaphysical notions on the subject; and, secondly, an examination of them with a view to confirm the doctrine of the phrenologists.

With respect to the metaphysical views of Memory, then, I presume Reid and Stewart may be safely quoted, as recognized authorities: and, taking them as the standard, it would appear that that the metaphysicians generally agree in considering Memory to be an original power, or primitive faculty of the mind. Dr. Thomas Brown I believe (though I have not had an opportunity of consulting his work,) differs from them in this particular; but as the metaphysicians hold comparatively few points in common, the coincidence of sentiment on this subject among Locke, Reid, Stewart, Dr. Watts, and several other deservedly eminent members of that school, may be taken as pretty convincing evidence, that this is the prevailing opinion among them.

But let these learned authorities speak for themselves.

Dr. Reid says, in the first volume of his Essays, p. 276,— "It appears that Memory is an original faculty, given us by the Author of our being, of which we can give no account but that we are so made." "Our original faculties are all unaccountable: of these Memory is one. He only who made them, comprehends fully how they are made, and how they produce in us, not only a conception, but a firm belief and assurance of things which it concerns us to know."

Dr. Watts expresses himself similarly in the 17th chapter of his work on the Improvement of the Mind. "Memory," he says, "is a distinct faculty of the mind of man, very different from perception, judgment, reasoning, and its other powers. We are said to remember anything when the idea of it arises in the mind, with a consciousness at the same time that we have had this idea before. Our memory is our natural power of retaining what we learn, and of recalling it on every occasion." I do not quote Locke, because the foregoing passage from Dr. Watts is nearly verbatim Locke's definition likewise.

Dugald Stewart too, treats of it among the intellectual powers, by which, as they are not defined, I presume he means original or primitive faculties, although he subsequently proceeds, (somewhat inconsistently,) to speak of its "constituent qualities," and to tell us that "the perfection of memory unites susceptibility, retentiveness, and readiness." Does the Professor wish us to understand these properties as simple faculties, and memory as a compound of the three; if so, why does he not afterwards treat of them as primary powers? Or, on the other hand, does he mean that memory is a simple faculty, but that these are three qualities, on which its action depends?

But agreeing, as I do most cordially, with Dr. Thomas Reid, that "there is no greater impediment to the advancement of knowledge than the ambiguity of words, and that to this it is chiefly owing, that we find sects and parties in

most branches of science, and disputes which are carried on from age to age without being brought to an issue;" it would be folly to discuss the question, whether Memory is, or is not a primary faculty, without first defining what is meant by the term.

On this subject Dugald Stewart, in his Outlines does not enlighten us, but Dr. Reid makes the following remarks, vol. i. p. 13 :—

"The words 'power' and 'faculty,' which are often used in speaking of the mind, need little explication. Every operation supposes a power in the being that operates; for to suppose anything to operate which has no power to operate, is manifestly absurd. But, on the other hand, there is no absurdity, in supposing a being to have power to operate, when it does not operate. Thus I may have power to walk when I sit, or to speak when I am silent. Every operation, therefore, implies power; but the power does not imply the operation.

"The faculties of the mind and its powers, are often used as synonymous expressions. But as most synonymes have some minute distinction which deserve notice, I apprehend that the word 'faculty' is most properly applied to those powers of the mind, which are original and natural, and which make a part of the constitution of the mind. There are other powers which are acquired by use, exercise, or study; which are not called faculties, but habits. There must be something in the constitution of the mind, necessary, to our being able to acquire habits, and that is commonly called capacity."

To this definition, *pro tanto*, I cannot do other than assent: nevertheless, I must be permitted, most respectfully, to submit, that to define a faculty as Dr. Reid does, to be "an original and natural power of the mind," without stating what is meant by those terms, is about as explicit as to tell us that a nightingale is a bird, and a cow a quadruped. At all events such a definition, however well it might suit

the metaphysical school, was not satisfactory to the phrenologists; and accordingly we find Dr. Spurzheim explaining what is meant by a primitive faculty, in somewhat more tangible terms. According to the phrenologists, then, "a faculty is held to be primitive, which, first, exists in one kind of animal and not in another; which, secondly, varies in the two sexes of the same species; which, thirdly, is not proportionate to the other faculties in the same individual; which, fourthly, does not manifest itself simultaneously with the other faculties, that is, which appears or disappears earlier or later in life than the other faculties; which, fifthly, may act or rest singly; which, sixthly, is propagated in a distinct manner from parents to children; and which, seventhly, may singly preserve its proper state of health or disease."

Now if we apply these tests in rotation, we shall find that most of them must be abandoned, if Memory (in the common acceptation of the term) be admitted among the primitive faculties. For, first, it should "exist in one kind of animal and not in another." On this head I have no observations to make, for while it is obvious that some animals possess memory, the dog, for instance, can remember a beating,—the horse a road,—the parrot a series of words,—and the bull-finch a tune; I am not prepared to say whether it be or be not possessed by the lower animals generally. Having then neither negative nor confirmatory evidence on this point, I pass to the Second test, viz.; it should "vary in the two sexes of the same species." Now a good memory is by no means the exclusive prerogative of either sex, nor would it be easy to say in which, it is most generally to be found. Thirdly. A primitive faculty should "not be generally found proportionate to the other faculties in the same individual," whereas Memory is invariably proportionate to some of the other faculties. Every one's experience must tell him, that a man with deficient musical powers, never

possesses a good memory for tunes,—a man with inferior mathematical talents, never evinces a good memory for geometrical problems,—a man with feeble powers of comparison, cannot excel in remembering similes and metaphors,—and a man with bad reasoning powers cannot remember logical deductions, or the various links in a complicated chain of argument. Fourthly. A primitive power "should not be manifested simultaneously with the other faculties;" while memory invariably is manifested simultaneously with the perceptive and reflective intellect. When a child begins to perceive what exists around him, he also begins to remember (though at first, both perception and memory appear, only in a small degree,) and when the perceptive intellect is most vigorous, the memory also is most acute. Fifthly. A primitive power should be capaple of "acting or resting singly," which Memory cannot do, inasmuch as it uniformly operates in conjunction with the perceptive faculties. This is admitted by the metaphysicians themselves. Locke, for instance, speaks of Memory as "a power to revive perceptions which the mind once had;" and Dr. Reid, when examining Locke's view, cautiously abstains from defining Memory himself, but prefers paraphrasing the sentence from Locke, and calling Memory the "ability to create new ideas or perceptions similar to those we had before." Both, however, admit by inference, (however they may fail to make a formal admission to that effect)—that Memory, which they treat as a simple faculty, and which, therefore, ought to have a separate and independent sphere of action, can only operate in conjunction with perception, which they speak of as another primary power. How far are they thus countenancing the phrenological view, that perception and memory are both modifications of the same thing, or, in other words, neither of them faculties at all, but merely modes of action, remains to be seen hereafter. Sixthly. An original faculty should be capable of "direct transmission from parents to

children." I am not aware to what extent Memory is hereditary, hence, cannot apply this test either way. Seventhly. If a primary power, Memory should be capable of "preserving singly its proper state of health or disease," which it certainly cannot do. Among the host of cases of lunacy of various stages and complexions, I have not been able to meet with one which can be referred to a morbid affection of Memory alone. Indeed if Memory have not an independent sphere of action, it follows, as an inevitable corollary, that it cannot be diseased alone.

Thus, then, we perceive, that of the seven tests proposed by Spurzheim as a kind of tribunal before which the claims of every candidate for admission into the assembly of the primitive powers should be tried (and which would not have been adopted in the present paper, had either Reid or Stewart furnished us with one), no less than five must be abandoned, if Memory be admitted; and on the other two, we (or at least, I,—for I here speak of my own experience) have no evidence either way; so they, as well as the others, may, for aught we know, be equally decisive against the claims of Memory.

But Memory need not be subjected to so rigid an examination as the foregoing; since the most cursory glance at its phenomena will be sufficient to show that it cannot be a primitive power of the mind. If, for instance, it were proved to be an original faculty, the phrase "partial memory" should no longer be retained in our vocabulary; for as soon as the mind is capable of recalling one class of ideas, or (to use the words of Locke), as soon as it is able to "revive one class of perceptions," it should also be able to revive another. What, however, is the fact? Is it not that Memory is almost universally partial? Do we not find schoolboys, whose memory for other things is sufficiently acute, yet frequently unable (notwithstanding the application of the strikingly persuasive eloquence of the cane) to

remember the musty writings of the Greek and Latin authors? while other lads, perhaps far their inferiors in general powers of mind, will readily read and recollect them? Do we not often meet with men who can remember a line of argument, a logical deduction, or a mathematical or algebraical problem, but who cannot recall to mind a tune, a poetical idea, or a few lines of verse? Do we not frequently find individuals who, like the horse, can remember the intricacies of any path along which they have once travelled, but who are sorely puzzled to recollect occurrences and events. And *vice versâ*, do we not often meet with persons possessing extraordinary memories for the dates of events, whose recollection of localities is scarcely mediocre? Once again, are we not constantly coming in contact with parties who can remember faces they have seen before, but can neither recollect the names of the individuals, nor the circumstances under which they have previously met?

If then Memory be a primitive faculty, differing, as it does, in almost every individual from almost every other,—presenting Proteus-like such an affinity of shapes, and phases, and aspects, assuredly it is one of the most unaccountable and extraordinary, that ever came under the observation of man; and Dr. Thomas Reid is quite correct, when he says that its *modus operandi* is, "he fears, beyond his skill," (aye, or any other person's skill either) "to explain."

But I respectfully, yet firmly, maintain that the partiality of memory affords conclusive evidence of its not being a primitive faculty; since, were such the case, as soon as it is capable of recalling one class of perceptions, it should also be able to remember another.

But "habit" is a favourite word with the metaphysicians, so much so that Dugald Stewart invests it with a kind of talismanic property, and ascribes to it, the power even of forming genius for poetry, painting, music, and mathematics; hence I am aware it may be urged that the phenomena of

partial memory are to be attributed to the "habit" of exercising this so-called faculty in one direction to the neglect of others. That habit or exercise has much to do with strengthening the memory, of course none but a blind observer will deny. But if it be argued this evening that "habit" can explain all the phenomena of partial memory, in face of the notorious fact that persons may, and often have, applied themselves for years to a particular branch of study in vain (as is the case with schoolboys not naturally gifted towards the classics, who, as I have myself seen, sometimes uselessly expend their labour with an eager desire to learn), and in spite of the equally well known fact that many, (take some of our eminent musicians as examples) have manifested strong memories in a particular direction almost without an effort, and when too young to have acquired habits:—I say, should this argument be adduced this evening, we have still another class of phenomena in reserve, which, to my own mind, are perfectly convincing. I allude to the partial loss of memory from disease and injuries to the brain, a few cases of which may be briefly stated.

Sydney Smith mentions in his "Principles of Phrenology" a man who "from concussion lost his memory for names, as did a surgeon from a nervous fever. Dr. Beattie knew a learned man, who, from a similar cause, lost all the Greek of which he was master; and Dr. Abercrombie had a patient, who in a like manner forgot his wife and children, but nothing else; while another, who remembered their persons, never again could recollect their names. Dr. Gregory remembered a lady, who, after apoplexy, knew everything but names; while a patient of Dr. Brigham's forgot only places. One of Dietrich's patients remembered facts, and lost words. Boerhaave knew a Spanish poet, whom a fever deprived of languages and even the alphabet, while otherwise perfectly rational. Thucydides records that several of the Athenians, after the plague, forgot their own names, and those of their parents and friends. Many of the French at the retreat from

Moscow, forgot their native country and their home. Valerius Maximus mentions an Athenian, who, after a blow on the head, forgot his literary acquirements, but remembered everything else. A man wounded by a sword in the eye, forgot Greek and Latin. The case of Dr. Broussonnet is also exceedingly striking. After recovering from an apoplectic attack, he could neither write, nor utter substantives, nor proper names in French and Latin, while adjectives and epithets crowded on him. When speaking of a person, he would describe his appearance, his qualities, and, without pronouncing the word coat, would name its colour. In his botanical pursuits he could point out the form and colour of plants, but could not name them."

But I need not multiply quoted examples; for my own painful experience has several times temporarily afforded an instance of this partial loss of memory from a morbid cerebral affection. For several years past, I have been subject to intense head-ache, the pain being confined to the forehead, and the attacks of which occur three or four times in the course of the year, generally during the hot months of summer. This head-ache sometimes remains only a few hours, but frequently, with a greater or lesser degree of violence, until a night's sleep has supervened. It is accompanied too, in most cases, by dimness of vision; but the strangest feature is a want of ability to apply words to their proper objects. My perception of things around me is as clear as usual, my ideas sufficiently collected: I know perfectly well what I desire to say, but, like Tantalus with his delusive streams, the moment I attempt to seize words to express my meaning, they are far away out of my reach,—my verbal memory becomes *tabula rasa*, and in vain do I seek to call things by their proper names. Now, in this case, (what the cause may be I pretend not to divine, neither would such an inquiry be proper in the present paper,) the memory is quite unimpaired for everything but words. Nor is this an isolated case, for in Mr. Combe's System of Phre-

nology, two others, much more interesting and singular than my own are recorded: one on the authority of Dr. Hood, and the other on that of Dr. Dyce; while, in the last number of the "Phrenological Journal," another is reported by Mr. E. S. Hytche.

The question then very naturally arises, how should this phenomenon occur if the same faculty to remember words exists, as is exercised in taking cognizance of other matters? To use Dr. Johnson's illustration of genius, if the leg be diseased, it is as capable of walking south as north; while if it be sound, it can walk in one direction as easily as in another. So if memory be a simple faculty, it should remember all classes of objects with equal facility, and when impaired to such a degree as no longer to retain one class of perceptions, it should also be unable to retain any.

But as it will be necessary again to refer to these diseased manifestations in the after part of the paper, I now leave them for the present, in the hope that sufficient has been said to prove satisfactorily that memory (in the common acceptation of the term) cannot be classed among the primitive powers of the mind; inasmuch as, first, if weighed in the balance suggested by Dr. Spurzheim, it is found wanting in five out of seven particulars; and secondly, even if Spurzheim's tests be rejected it is partial, instead of general, both in its healthy and diseased manifestations.

Having then briefly considered what Memory is not, we now arrive at the second division of the subject, viz., the inquiry—what it really is? The phrenological doctrine, therefore (which I conscientiously hold to be the true one), shall be stated in as few words, as possible.

Phrenologists consider man to be a three-fold being, combining within himself an animal, a moral, and an intellectual nature, or (as they generally express themselves) including in his entire constitution, animal propensities, moral sentiments, and intellectual powers or faculties. The material apparatus used by the mind in every instance of

mental action, they also hold to be the brain; and anatomists, long before the days of Phrenology, have divided this viscus into three regions, called the anterior, posterior, and coronal, by way of distinction. When Phrenology arose its first professors, keeping their eyes intently fixed on the field of nature before them, neither on the one hand deigned to succumb to the prejudices of their day, nor on the other got entangled in the mystifying web of speculation or hypothesis; but with a genuine truth-seeking disposition, sought after facts, which (when discovered) they fearlessly made known. First, they discovered that the faculty exercised in acquiring a knowledge of language, was manifested by a portion of brain in the immediate vicinity of the eye; then, that the power of perceiving and remembering localities was connected with another part of the anterior cerebral lobe, immediately above the root of the nose; then, that some animal propensity was manifested by means of an organ in the posterior region of the head; and also that some of the moral feelings were connected with the coronal region or crown of the head. Their discoveries (which at first seemed to indicate a confused rather than an harmonious arrangement of the organs) were reported as made. Emboldened by the partial success which their laborious researches attained, they heeded neither the frowns of friends, nor sneers of foes; but catching a glimpse through the vista of what was already revealed of that flood of light which they were ultimately destined to unfold, and which, they knew would shed a halo round their names when their persecutors should have passed into deserved oblivion, they prosecuted their inquiries until they found that nature was true to herself; that notwithstanding the want of arrangement among the organs which at first they might have anticipated, still only a more intimate acquaintance was needed to convince them that they were as completely invested with order and adaptation to their offices, as all the other works that had emanated from Omnipotence. These organs were found to

arrange themselves in groups; and as man's mental constitution was discovered to be three-fold, so his mental organ (as anatomists before their day had agreed,) was three-fold also, and the animal propensities were found to be manifested by the posterior region, the moral sentiments by the coronal, and the intellect by the anterior or frontal lobe. Phrenologists, also, on subsequent investigation, find that the propensities and sentiments do not form ideas, but mere feelings, or instincts, or emotions, and cannot be called into exercise by an effort of the will: we cannot, for instance, experience at any time, by a mere act of volition, the emotions of fear, anger, compassion, awe, &c. As then, these do not give rise to ideas, and the emotions cannot be excited or recalled at pleasure, it follows that they have not the attributes of perception and memory, but only that of sensation. But with the intellectual faculties, whose organs are placed in the anterior region of the head, the case is different: these form ideas,—perceive the existence of the external world,—notice the qualities of things around,—their forms, sizes, colours, —take cognizance also of their relations, noticing their numbers, positions, and so forth,—and some have the power of ratiocination, enabling us to compare object with object, and idea with idea, as well as to trace the connection between cause and effect. These faculties then differ from the propensities and sentiments; inasmuch as while the latter produce only emotions and cannot be excited by the will, the former produce ideas, perceive relations, and are obedient to volition.

When the perceptive faculties, then excited by the presentation of an external object, the object is perceived, and this is called perception. Perception, therefore, is the lowest degree of activity of any of the perceptive faculties; and, if no idea be produced on the presentation of the object, the individual is said to be destitute of the power of manifesting the faculty. Thus, if an individual cannot perceive the melody of a tune, he is said to be incapable of

manifesting the faculty of tune, as in the case of Ann Ormerod mentioned in my last lecture on Phrenology. If unable to discern colours when set before him (like Mr. James Milne, the brass-founder in Edinburgh, who was apprenticed to a draper, but compelled to resign his situation in consequence of his inability to distinguish colours; having on one occasion sold a piece of olive-coloured corduroy for breeches, and when asked for some ribbon to match for strings, actually brought a bright scarlet thinking it would match,) he is said to be destitute of the ability to manifest the faculty which perceives colours. So again of causality, if unable to perceive the steps of a simple argument, he is said to be deficient in the power of causality.

Thus perception is a mode of action of each of the perceptive powers, but not a primary faculty itself, for the same reason that memory is not: viz., that perception, like memory, is often partial. Ann Ormerod, for instance, is only deficient of the power of perceiving melody: and Mr. Milne even excels in distinguishing forms and proportions, and is only puzzled in perceiving colours.

Memory, too, like perception is considered by phrenologists to be merely a mode of action of the perceptive and reflective faculties; but as perception is the lowest degree of activity so memory is the highest of all the intellectual powers. Each faculty is believed by them, to recall the impressions which it first served to receive. Thus the faculty which perceives tune will recall the notes formerly heard, and give the memory for Music. Form will recall the figures which it previously observed. Individuality, and Eventuality, will confer a memory for facts, and the talent for becoming skilled in history, both natural and civil. And a person in whom causality is powerful will manifest superior memory for deductions, arguments, and metaphysics.

According to this doctrine, then, it would follow that

instead of memory being equally apt at recalling all classes of perceptions, (as we should expect, if it were a primary power,) it should be generally partial, and bear a direct relation to the power of the faculty, by which the revived perceptions were originally produced. This would be a natural consequence of the doctrine, and I need not remark how it coincides with the experience of us all.

Where any of the faculties are not sufficiently manifested to be capable of producing perceptions or forming ideas, (as in the case of Mr. Milne's colour and Ann Ormerod's tune,) we neither expect nor discover memory; for if impressions be not produced, they of course cannot be recalled: but we might reasonably expect, that as perception is the lower, and memory the higher degree of activity, so cases would occur in which some of the faculties might be sufficiently developed to perceive objects when presented, but not to recall them when absent from the eye.

Accordingly cases of this description are of every-day occurrence. Mr. Sloan, of Leith, for instance, can perceive, but cannot remember colours; that is, if blue, red, and yellow be all three placed before him he can tell one from another, and can call them by name; but, if they be removed, he cannot recollect which of the three was in the middle, or which was on either side. Nothing is more common, too, than for individuals not amply endowed with musical talent to perceive the melody of a tune, to listen with delight, and to admire the execution of a performance, who, when the music has ceased, cannot recall it to mind, or, (as Locke would say) cannot "revive their impressions." I am myself a living example of this peculiarity, having sufficient "music in my soul" to be moved, even to delight, by a "concord of sweet sounds," (and hence not quite coming under Shakespeare's ban, as "fit for treasons, stratagems, and spoils,") but cannot remember music, unless I have repeatedly heard it, and am seldom or never haunted by

what Matthews called "the ghost of a tune." So again, persons with only moderate reflective powers, often listen patiently to an argument, are able to trace the connecting chain which runs through the various links of evidence adduced, and feel perfectly convinced of the soundness of the reasoning, and yet cannot afterwards recall it to mind, but if questioned on the subject would most likely reply: "I cannot exactly recollect the speaker's propositions, nor tell you by what arguments he proved his points; but this I know, that he treated his subject quite satisfactorily to my own mind." This kind of causality is sufficiently powerful to perceive the chain of reasoning, but not to recollect it.

If, then, we view the phrenological doctrine merely as an hypothesis, it certainly appears much more reasonable and satisfactory than the metaphysical theory previously examined; for, instead of the partial character of Memory appearing irreconcileable to his tenets, it is just what the Phrenologist would, *à priori*, have expected. Since, as the endowment of the perceptive faculties, varies in different individuals both in character and degree, memory, being only a mode of action of these faculties, must also vary. The case of the schoolboy previously mentioned, who could remember almost everything else but Latin and Greek, would, for instance, easily be explained, by supposing the perceptive faculties generally to be well developed, with the single exception of that of language. In the case of those who can remember a line of argument, but not a piece of music, we may also imagine the reflective faculties to be much more powerful than that of tune. In the person who could remember the windings of a path, but not the dates of events, the faculty of locality might be active and powerful, while that which takes cognizance of events might be the reverse; and in the other case mentioned of persons who remember faces, but not the names of the owners, the faculty of form, which

would notice the shape of the face, may be much more powerful than that of language, to which the names would be entrusted.

So again, in the diseased manifestations quoted:—in the case of the surgeon, who from nervous fever lost his memory for names alone, and in Dr. Beattie's learned patient, who lost his Greek from a similar cause, &c., &c., we admit the phrenological doctrine that there is a distinct faculty for the perception and memory of languages and names, and that this faculty is connected with a cerebral organ capable of being singly diseased:—all the mystery vanishes, and we at once perceive how this variety of memory may be impaired while the others sustain no injury. But on no other hypothesis (for I am now stating this merely as an hypothesis) do these phenomena appear explicable.

Again, there appears nothing marvellous in Dr. Brigham's case of a man who only forgot places; if we admit the existence of a faculty whose express office it is to take cognizance of localities, also connected with an organ which may be diseased alone. And again, in the deeply interesting case of Dr. Broussonnet, who lost the ability to perceive and remember objects, while he recollected qualities, when we know that there is a faculty of individuality which observes entities, while other faculties notice their qualities (such as their forms, sizes, and colours), and that the organs of any of these, may be diseased or impaired independently of the others: this case, also, which at first seemed veiled in mystery, becomes intelligibly explained.

Thus the Phrenological doctrine, that we have various perceptive faculties, each of which exercises the function of memory, as well as perception within its own jurisdiction, and that memory therefore is a mode of action rather than a faculty, viewed merely as a theory—an hypothesis—seems decidedly less liable to objection, than the metaphysical theory previously considered. Nay, as before hinted, the metaphysicians themselves seem (while actually contending

for the reverse) to have approximated much more closely to these views than they could possibly have imagined. For if (as Locke says) memory be a power to revive perceptions, they can only be viewed by the perceptive power or powers (whether these be one as held by Locke, or many, as taught by the Phrenologists), and as Reid paraphases Locke, "the ability to create new perceptions;"—surely creating perceptions is the function of the perceptive faculty or faculties, hence memory by their own showing is a mode of action, and not a primitive power. Dr. Watts, too, though equally wedded to the theory of the metaphysicians, seems to have been unable to blind himself to the true philosophy, and accordingly appears to have anticipated by a very acute conjecture, the phrenological views which I have endeavoured to propound.

"Though the memory," he says, in the seventeenth chapter of his work on the Improvement of the Mind, "be a natural faculty of the mind of man, yet it is greatly assisted or hindered, and much diversified by the brain or animal nature to which the soul is united in its present state. But what part of the brain that is wherein the images of things lie treasured up, is very hard for us to determine with certainty. It is most probable," continues the Doctor, "that those very fibres, pores, or traces of the brain, which assist at the first idea or perception of any object, are the same which assist also at the recollection of it; and then it will follow that the memory has no special part of the brain devoted to its own service, but uses all those parts in general which subserve our sensations as well as our thinking and reasoning powers." In other words, the doctor would say, "It is most probable that memory is not a distinct faculty, hence has no cerebral organ; but rather, that it is a mode of action of all the perceptive and reflective powers, and therefore uses all their organs." Phrenologists are indebted to Dr. Watts for thus lucidly stating and giving his high sanction to their opinions.

But we have hitherto been considering the philosophy of Memory as taught in the phrenological school, merely in the light of an hypothesis: the Phrenologist has, however, the gratification of knowing that (while the metaphysician can only say that his may be the true philosophy,) backed by an array of facts, palpable to the senses of his eyes and ears, he can confidently affirm that his system, not probably, but in reality, affords the true explanation of the matter. He finds, for instance, that whenever there is a natural inability to manifest any perceptive faculty, that portion of the brain which his science teaches him is the organ of that particular faculty, is developed to a very small extent, as in the already-quoted cases of Ann Ormerod's tune and Mr. Milne's colour. Again, when any faculty is manifested sufficiently to perceive, but not to remember, as in Mr. Sloan's colour, there the corresponding organs are developed in a higher degree, than in the former class of cases, though still comparatively to a small extent. And once again, in those cases where the perception and memory of any particular faculty are predominantly manifested, there the phrenological organs of those faculties will be found developed in a very superior degree.

But it may be urged that this is merely a general statement unsupported by proof. I will therefore just briefly mention two confirmatory cases, which now obtrude themselves on my recollection. One is that of a well-educated married lady, whose recollection of events is so extraordinary as to have gained for her the title of "a complete walking almanack," a kind of animated calendar of historical occurrences, and a never failing book of reference for her family and friends. She, however, does not possess any other intellectual power in more than a mediocre degree. Now if there were any truth in Phrenology, the organ of Eventuality, (whose faculty not only observes but remembers occurrences and events,) should, in such a case as this, be of extraordinary size. This I can most solemnly declare it to

be the fact; indeed to so unusual an extent is this organ developed, and so striking is the correspondence between development and manifestation, that I have been induced to draw up an account of the case (in which examples of the lady's memory, are given in detail) for publication in the "Phrenological Journal," where it appeared in the month of July, 1839. It may also be mentioned that this variety of memory, is the only one exhibited by this lady in more than an ordinary degree: and that it is the only intellectual organ in the cranium, the development of which is remarkable.

The other case to which I have referred, is that of a young gentleman in whom the organ of language is enormously large, and who is not only a very good linguist, but whose knowledge of his own tongue is so extensive, and whose verbal memory is so excellent, that besides possessing great fluency in writing and speaking, if any given word be mentioned to him, he can, almost without an effort, repeat every other word in the language that will express the same meaning or rhyme with it, as the case may be. Indeed, as the lady just mentioned has been styled "a walking almanack," so this individual may (with equal justice) be termed "a walking rhyming dictionary."

But it is needless to waste your time by detailing more instances in which peculiar powers of memory are found concomitant with extreme cerebal development, in a particular direction, since every Phrenologist who has used his eyes has met with an abundance of such cases in his own observation; and particularly as Phrenology (at least with those organs whose functions are considered to be established) admits of no exceptions. Indeed the whole matter may be briefly summed up by stating, that not a single case has been, or can be adduced where a profound and extensive memory, whether for objects, events, localities, numbers, tunes, or whatever else is taken cognizance of, by the other perceptive faculties, has been associated with great

deficiency of those portions of the encephalon which Phrenology has assigned as the organs of those faculties, which (according to the principles already laid down) should perceive and recollect them.

And now, having endeavoured somewhat at length to answer the question, What is Memory? by placing the metaphysical and phrenological replies thereto, in juxtaposition, with the view of shewing the superiority of the latter, I might here leave the subject; but as the foregoing observations have been of a strictly controversial character, and therefore (I fear) of but little interest to any but the partizans of one or other of those two systems of philosophy, I cannot resist the temptation in conclusion, of calling your attention to a classification of the principal varieties of memory, first suggested by my friend Mr. Hewitt Watson, in an admirable essay on the subject, in which he also throws out useful suggestions as to the probable conditions on which these varieties may depend.

"For more easy illustration," says Mr. Watson, "it will be convenient to distinguish the varieties of memory into two leading sub-divisions, which may be termed 'Simple Memory' and 'Memory by Association.' Simple Memory is that wherein the idea of a sound, colour, object, or event, appears to recur directly and spontaneously; as, for instance, having once seen a house or a tree, and the idea or mental impression returning afterwards, we are then said to remember it. Memory depending on association is indirect, and may be exemplified by the fact that we can scarce think of the summer sky, or the roses that bloom beneath it, without immediately remembering the concave form, and blue tint of the former, or the peculiar shape or blushing dyes of the latter. The inseparable connection that seems to be established between the arbitrary sounds and shapes used in speech and in writing, and various mental ideas; so that the mere sound or sight of a word inevitably recalls its appropriate idea, is another

familiar illustration of memory by association. Such associations vary from the closest possible approximation with simple memory, to the most remote, incongruous, and artificial associations that exist."

"To commence with Simple Memory:—one of the most striking varieties of simple memory, is that wherein an individual is capable of remembering a great number of ideas, whether they be chiefly of shapes, sounds, colours, objects, or whatever else. The remembrance of them may be lasting or transitory; it may be orderly or without arrangement; the individual may be rapid or slow in reproducing impressions previously formed. Such a memory, in short, may be indefinitely varied in every other respect, excepting that named as its distinguishing mark, viz., the multiplicity of ideas remembered." Mr. Watson observes, that he has seen several individuals exhibiting a memory of this kind, but varying greatly among themselves in the duration, clearness, readiness, and other peculiarities of the ideas remembered. It is this variety which is commonly meant by the frequent expressions, "a good" or "a great" memory; although by no means invariably so. It appears essential to attaining a first rank in most departments of science and literature, and is the variety which led Gall to the discovery of the intellectual organs,—the condition on which it depends, seeming to be large organic development. They who take in, and remember the largest number of ideas at once, whether the same ideas be remembered for a long period, or be shortly supplanted by others, have, *cæteris paribus*, the largest organic development. Mr. W. has observed in botanists, having language and individuality but moderately developed, the power of remembering for a long period, and with accuracy, a limited number of plants, their names and peculiar distinctive characteristics,—as, for instance, those of a particular garden, district, or country. But on expanding their observation they forgot the former, apparently from a difficulty of retaining a multiplicity of ideas in a small

organ. Others, on the contrary, will write systems embracing the whole of the vegetable kingdom, which implies an amount of individual knowledge almost incomprehensible to a small development. The mask of Sir James Smith, whose principal botanical skill lay in a knowledge of the various names which botanists and others had, at different periods, applied to the same plant, shows language to have been large, and in consequence he remembered many names. Individuality and form are both well developed, but these two organs have been found relatively superior, in some of the least specific botanists of Britain, who remember the plants themselves better than their names. This variety of memory would be appropriately distinguished by the epithet "Extensive." As, however, it depends essentially on large organic development, which scarcely any person possesses in every faculty, this memory is always more or less partial, that is, limited in respect to the kind of ideas remembered; so that, in order to characterize it with precision, it would be necessary to say, an Extensive Memory of words, of colour, of sounds, or whatever else it might happen to be. Many persons mistake the limit in kind, for limit in degree only, and lament in general terms their deficiency of memory, when, in reality, they possess an extensive memory for one range of ideas, combined with a limited one for another; the deficiency, being most felt by the inconvenience it occasions, is taken as the general criterion. Exercise seems to have less influence on this variety than it has over others presently to be mentioned, probably influencing the direction rather than the quantities of ideas remembered. Linnæus, Sheridan, Newton, Johnson, Cuvier, and Sir Edward Coke furnish examples of the Extensive Memory and that chiefly in one particular range or direction.

A second variety of memory is that of men, who are capable of remembering what they see, hear, or do, during a very long period: their mental impressions appear to bid defiance to time and to bear its daily attritions almost with-

out change. Whether the subjects remembered be few or many, and of whatever kind or nature, still mental images of them, once formed remain deep and distinct. Individuals endowed with this variety of memory in its highest degree, will converse nearly as easily and correctly of occurrences years gone by, as others do of those which happened but a week ago. There are boys who will learn their school tasks with ease and rapidity, but just as easily and rapidly forget them; the lesson which was perfect last week is to-day a dim and scarcely perceptible outline of something that has once been, but is now almost effaced from the soft-moulded tablets of memory. On the other hand, we find some of their school-fellows, whose tasks are the same, whose instructions are scarce in the slightest degree different, nevertheless, in this respect, attended with the most dissimilar results. The task of the last week, or the last month, is nearly as fresh in memory as though it had been learned but yesterday; and they wonder how others can forget so quickly, while these in turn are astonished that such retentiveness of memory can exist in their companions. It seems yet an unsolved problem, on what organic peculiarity this depends. That it is not attributable to size, or at least to size alone, every day's experience must assure us; and all that can at present be suggested in regard to it, is, that quality rather than quantity of brain, is the condition whereon it is dependent. It seems to be almost invariably accompanied by a degree of slowness in action:—a want of that rapidity in the flow of ideas characteristic of the next variety to be mentioned. The slowness and tenacity may, perhaps, depend on the same peculiarity in the composition or quality of brain; the retentiveness of former ideas being connected with the slowness in acquiring new ones. Cases have often been mentioned of tragedians and others who, after learning to repeat long passages in a short space of time, found that they very soon forgot them; and that when acquired with more slowness they were longer remembered.

It would appear from this, that the slowness in acquiring ideas is an antecedent to retentiveness, we are scarcely authorised to say a cause, for both the one and the other may and most likely do, depend 'on' some general or temporary constitutional condition checking rapidity. The epithet retentive would pretty correctly designate this variety of memory, and distinguish it from the former, with which it may, or may not be combined. Mr. Watson says he has noticed it in men with a limited, as well as in those who possess an extensive memory; but, *cæteris paribus*, it seems most marked in those individuals who engage in the smallest variety of pursuits; whether it is an effect or a cause of uniformity in taste and pursuit, may admit of doubt. The inhabitants of the country seem to remember with more tenacity than those who live in large towns; and certainly they are more apt to imbibe ideas with slowness and deliberation. Joined with an extensive memory, it constitutes the man of knowledge, and is, therefore, an essential element in forming a scientific character; but will scarcely make a witty or showy one. Joseph Hume, Julius Cæsar, Sir W. Scott, and perhaps Napoleon, may be cited as examples of it.

"A third variety of simple memory, is characterized by the rapidity with which previous ideas are reproduced in the mind. One after another, or one dozen after another dozen, previous thoughts and impressions are renewed, and come floating athwart the mental eye in perpetual changeability and succession. They may arise in a regular, connected, and systematic series, or be poured forth in the most mixed and heterogeneous assemblages, like the endlessly varied hues, and objects of an extensive landscape. Rapidity of ideas is the essential character of this modification. Whether such ideas be correct or erroneous, limited or general, connected or disordered, seems to be determined by conditions different from those, on which depends the mere quickness of their reproduction. Rapidity of memory is probably in-

fluential in leading to the production of poetry: being evinced in the variety of its imagery, and what one of the fraternity has well exemplified in the expression 'thronging fancies.' Rapidity in excess, implying a perpetual transition of ideas, incapacitates for science; hence, we rarely, if ever, find first rank in science and poetry, or science and wit, in the same individual. Intermediate gradations may unite both, in nearly equal degree." In speaking of the former variety, Mr. Watson suggested the rarity, if not incompatibility, of the rapid and the retentive memories co-existing in a great degree; but was informed on reading the remark that Professor Mezzofante, of Bologna, combines both rapidity and retentiveness of verbal memory. The nervous temperament seems instrumental in giving this quality of brain; or perhaps it might with more correctness be regarded as the effect. An appropriate mode of distinguishing this modification of memory, from those previously noticed, would be by attaching to it the epithet Rapid. Miss Pratt, quoted in the phrenological works as an example of large Individuality, may be cited as an instance of rapid, combined with extensive memory of objects and occurrences.

"Nearly allied to, but by no means co-existent with, the rapid memory, is readiness of memory, or the power of immediately directing it to any given subject. There are men of considerable rapidity and diversity of ideas, who, if suddenly asked the simplest question concerning any matter not just then occupying their thoughts, find great difficulty in turning the current of their ideas into another channel, or opening a new spring. They seem to themselves and others to be remarkably deficient in memory. Inequality of development, probably tends to increase this peculiar defect, but it appears most likely that Concentrativeness and Secretiveness, one or both, are concerned also. Mr. Watson has but few observations on the development of individuals whose memory presents this modification, but he finds it in perfection where large Secretiveness, Concen-

trativeness, and the anterior lobe, especially Individuality, are combined with rapidity, and to be proportionally injured by the abduction, of any one of these requisites. The epithet ready or prompt may designate this variety of memory, which probably occurred in Burke, Pitt, Curran, and Sheridan.

Thus then according to Mr. Watson's views (which are at least ingenious and plausible) the genus,—simple memory, includes four species, viz., the extensive, the retentive, the rapid, and the ready or prompt varieties. The other principal subdivision, memory by association, I do not this evening enter into, because in the first place the prolixity with which I have been almost compelled to treat so dry and abstruse a subject must, ere this, have fatigued all present; and because in the second place as many of the metaphysicians consider association to be a distinct power or faculty of the mind, it is too extensive a field to be entered upon at the close of a paper like this.

October 14, 1840.

LECTURE IX.

HEADS OF CRIMINALS.

It will, I presume, be generally admitted that Phrenologists are right, in considering man a triune being, embracing within himself an animal, a moral, and an intellectual nature. It will also, without doubt, be conceded, that (as anatomists knew, long prior to the rise of Gall's philosophy,) the human brain was threefold also, consisting of anterior, coronal, and posterior regions. And, however those who have not examined their evidences may be disposed to question their conclusions; Phrenologists know from a vast accumulation of patiently investigated facts, which cannot possibly be overturned, that the intellectual powers are manifested by the anterior region of the brain, the moral sentiments by the coronal, and the animal propensities by the posterior and lateral. In this arrangement, too, as in all works of nature, we see beauty and order shining prominently forth. It has often occurred to myself, indeed, that there is a striking appropriateness in the relative positions of these three groups of organs; that of the animal propensities (though in themselves "very good"), forming, as they do, the lowest features in our mental constitution, the links whereby we are allied in the chain of being, to the

lower classes of creation, occupying the base and hinder portion of the encephalic mass, as though their very position, were indicative of that subordinate sphere which the passions and propensities should occupy: the intellectual organs, again, by means of which we receive our impressions and ideas, being beautifully situated in the frontal part immediately above the eyes: and those of the moral feelings and emotions, constituting, as they do, at once man's sole prerogative, and the greatest glory of his nature, occupying the highest portion of this "dome of thought, this palace of the soul," looking upwards towards the God that gave them, and enthroned alike above the passions, and the intellect, as though to tell us by their very situation, that their dictates should ever be supreme.

To determine the size of the intellectual region, the general plan is, to draw a line above the organs of comparison and causality, down to constructiveness on either side; the mass lying to the front of that line, is the part occupied by the intellectual organs. To ascertain the size of the moral group, a line may be drawn above comparison and causality (as before), and round across the top of the organ of cautiousness; the mass lying above that line is the region occupied by the moral organs. The parts behind and below that line, are devoted to those of the animal propensities. Assuming, then, this much established, mankind may be very conveniently arranged in three classes: first, those in whom the moral and intellectual regions decidedly predominate over that of the animal propensities; secondly, those in whom the three regions are nearly equally developed: and thirdly, those in whom the moral and intellectual organs are decidedly inferior in development to the region of the animal propensities.

First, then, we consider that class in whom we find the moral and intellectual organs largely developed, and decidedly predominating in size over those of the animal propensities. These individuals are nature's aristocracy; they

have amiable minds, strong feelings of moral obligation, and vigorous intellectual perceptions; while the cravings of their animal passions are relatively moderate, and therefore easily controlled. These are respectable members of society, in whatever circumstances they may be placed; and Mr. George Combe remarks, that in the whole course of his observation, he never found a man with a development of this description on the criminal side of the gaol; nor is it likely that such an individual would commit crimes worthy of imprisonment.

Crime, in the legal acceptation of the term, may, I think, be said to be, "the commission of actions, which are contrary to the laws;" and as the laws of a civilized and Christian country like our own profess to be (and for the most part in England certainly are) based upon the doctrine that the animal passions should be subservient, to the dictates of enlightened morality; we should be prepared to expect the fact, that persons with minds of the class which we are now considering would seldom or ever become the inmates of our gaols. As well-known examples of this class, I may quote Melancthon and Cuvier; the casts also of Scott, Hume, and Spurzheim, exhibit the same description of development. Happily for the well-being of society, this class is by no means scarce, though not nearly so abundant as the next which we have to consider.

The second class comprehends those in whom the three regions are tolerably developed, and nearly in a state of equilibrium. These are they, in whom the force of external circumstances exerts its greatest power; they are "to good and evil equal bent," and become good or bad members of society, according to the circumstances in which they are placed, as to example, education, and interest.

In such individuals, the large organs of the propensities give rise to vivid manifestations of the criminal feelings; but the large organs of the moral sentiments and intellect produce equally strong impulses of moral emotion, and of intel-

lectual perception. If one of them be born of profligate parents, abandoned to idleness, intoxication, and crime, his lower organs from infancy are presented with objects calculated to call them into vivid action, while his moral sentiments receive no proportionate training. The intellectual faculties are employed only in serving, and assisting the propensities. They are denied all rational and useful instruction, while they are sharpened to perpetrate crime, and to avoid punishment. An individual thus constituted, becomes an habitual criminal; and is the more dangerous on account of the moral and intellectual powers which he possesses. These give him an air of intelligence and plausibility, which enable him the more successfully to deceive, and to obtain access to places of trust in which he may commit the more extensive peculations.

If, on the other hand, an individual thus constituted be placed from infancy in the bosom of a moral, intelligent, and religious family, who present but few or no temptations to his propensities, but many powerful excitements to his higher faculties; if he have passed the period of youth under this influence, and in early manhood have been ushered into society with all the advantages of a respectable character, and been received and cherished by the virtuous as one of themselves, then his moral and intellectual faculties may assume and maintain their ascendancy through life. If, again, an individual of this class have been religiously educated, but at an early period of life have left home, and been much thrown upon the world, or, in other words, left to associate with persons of indifferent characters and dispositions, he may gradually deteriorate in his mental condition.

In the prime of manhood and blaze of his passions, he may be not a little profligate and disreputable in his conduct; but as he advances in life, the energy of the animal organs will begin to decay; they will be exhausted by excessive indulgence; the moral organs may recover their

long-forgotten activity; the higher feelings may have freer scope for action; and under the influence of all these combined causes and circumstances, he may again become a moral, respectable, and respected member of society.

We have numerous examples of this class in the personal observation of every one of us, in individuals who, when young, "have followed pleasure's mad career, wild as the wave," but have afterwards forsaken the halls of dissipation, and obeyed the dictates of their moral and intellectual powers. The annals of crime unfortunately afford numberless instances of the converse of this,—where individuals, who have once conducted themselves with propriety, when their external circumstances have been changed, have fallen into the lowest abyss of vice and misery.

Thurtell may be mentioned as an illustration of this. He had the reputation, while in the navy, of being a kind, good-natured, blustering, though not wise fellow; but after the war he became contaminated by low society, joined the ranks of the drunkard and the gambler; imagining that Weare had cheated him, he took away his life, and expiated his offence upon the gallows.

Dr. Dodd was another example of this class of minds, and his head exactly corresponds. He was respectable and respected, both as a gentleman, and a clergyman, while in prosperous circumstances; but, as the proverb says, "'Tis adversity that tries a man," when his extravagant habits led him into embarrassed circumstances, conscience was not sufficiently powerful, to antagonise his propensities; he therefore yielded and fell.

Burns also may be taken as an example of this class. In his head the intellectual region was extraordinarily large, the animal region equally large, and the moral group, especially Benevolence and Ideality, also very well raised. With these indications, too, his character was perfectly in accordance. In looking at his works, we find at one time, his willing muse unfortunately enlisted in the cause of vice and

dissipation; at another, revelling in the fairy scenes created by his brilliant imagination; and at a third, touching the tenderest sympathies of our nature, and aiding the cause of virtue and morality. His character is excellently described in his own words, when he says of himself, in his Bard's epitaph—

> "The poor inhabitant below
> Was quick to learn and wise to know,
> And keenly felt the friendly glow,
> And softer flame;
> But thoughtless follies laid him low
> And stain'd his name."

I may here remark that by any system but Phrenology, it appears difficult to explain these opposite phases of character and anomalies of conduct.

Maxwell may be quoted as a fourth specimen of this class. In his head the three orders of organs were all fairly developed, and so long as he remained in the army, he preserved a good character; but when no longer under the restraint of military discipline, he became associated with low companions, gave way to habits of intoxication and debauchery, fell into poverty, then joined a gang of thieves, and was at last executed.

Sheridan too, whose cast bears a close resemblance generally to that of Maxwell, belonged to this class. He possessed considerable quickness, strong powers of imitation, great keenness of observation, (though by no means a capacious or profound intellect) and a sufficient sense of morality to keep a fair character for respectability while prosperity shone upon him; but when his circumstances decayed, he sank into disreputable and vicious courses, and died in poverty and contempt.

To quote one other example—I may mention Haggart, who though a thief by profession and ultimately hanged for murder, belonged to this class. His cast evinces a tolerable intellectual endowment, and some Benevolence with defi-

cient Conscientiousness, immense Firmness, and a large animal region. His intellectual education had been grossly neglected, and moral culture he had none. Considerable shrewdness and reflection were however shewn in his robberies; and it must be borne in mind that he became a murderer by accident, and he evinced the most sincere contrition when he found that his victim was dead. He was striving to effect his escape from Dumfries gaol, and in order to accomplish his end, he struck the jailor with the intention of merely stunning him; the blow, however, proved fatal; and after a long chase of, I believe, nearly three years, (during which time he eluded the authorities,) he was apprehended in Ireland, where, lest his speech might betray him, he had managed to lose his Scotch pronunciation, and had assumed the Irish brogue as naturally as though he were a native of the country.

But not to multiply examples of this class,—a class exceedingly abundant in society, and one from which very many of our criminals arise,—I may just observe in passing, that criminals of this class are those, on whom the beneficial effects of education and judicious treatment in our gaols and penitentiaries are most likely to appear; these are generally reclaimable, their vicious habits having chiefly arisen from the contaminating influences by which they have been surrounded.

We next proceed to consider the third and most unfortunate class of individuals, in whom the moral and intellectual organs are decidedly inferior in size to the region of the animal propensities. In this class we find the low, depraved, incorrigible criminals, of whom in Christian England we have too often melancholy examples brought before us. They are the slaves of their brute propensities,—dragged, bound, and fettered to the chariot-wheels of sense,—and willing victims, sacrificed upon the shrine of passion. As an example of this class, I may quote Mary McInnes, the mistress of a brothel, executed in Edinburgh for stabbing a

man ; and in whom the sense of rectitude was so feeble and blunted, the light of conscience so dimly burning, that, even when lying under sentence of death, the late Rev. Andrew Thomson, D.D., found it quite impossible to convey to her any satisfactory views or feelings of religion, or of the heinousness of the crime which she had committed.

Hare, the coadjutor of Burke, may be quoted as another specimen,—in him the intellectual region was wretchedly low and contracted, and that of the moral group scarcely raised above the line from Causality to Cautiousness, so as to describe a circle at all ; while the great mass of the encephalon lay in the posterior, and basilar regions. The truth of these indications, all will be prepared to admit ; the circumstances of Hare's infamous life, and ignominious death, for the cold-blooded murder of sixteen individuals, whose bodies were sold for dissection, are doubtless still fresh in the recollection of many present.

A third example of this class of heads, of whose cast I am in possession, is Greenacre. In this head, the moral region is wretchedly low and shelving, especially at the organs of Hope and Conscientiousness, and the anterior portion, though evincing a tolerable development, of one or two, of the perceptive organs, narrow and receding. The upper part indeed, that occupied by the organs of the reflective faculties, is almost entirely wanting, while the bulk of the brain lay in the regions of Amativeness, Combativeness, Destructiveness, Secretiveness, and Acquisitiveness. The circumstances of the crime for which he died are still fresh in your memory ; and all will recollect that the life of this grovelling miscreant was one continued exhibition of lust, ingratitude, dishonesty, hypocrisy, and revenge.

A fourth illustration of this class of minds, is to be found in the Murderess Gottfried ; she was executed at Bremen in 1828 ; her development was, if possible, worse than that of Greenacre himself. Her cast exhibits an almost total want of Benevolence, and the greater portion of the moral

region, while fully two-thirds of the brain lay behind the ears; and the recent annals of crime have rarely, if ever, exhibited such a constant and apparently insurmountable tendency to vice, such a prostration of all the moral powers, such an absence of all the finer and more tender sympathies of our nature, as are evinced in the life of this female fiend, who, during a succession of years, poisoned both her parents, her three children, her first and second husbands, a lover, and five other persons.

Another example of this class, and the last to which I shall direct your attention, is that of John Williams, executed at Shrewsbury, on the 5th of April, 1842, for the murder of Emma Roberts, a poor old woman seventy-five years of age, at Chirk, in Denbighshire. This case has not yet appeared before the phrenological world; but as some not over scrupulous opponents of Phrenology have not hesitated to declare that his cast was subversive of the science, the writer of these remarks, was the first Phrenologist that obtained possession of an authentic copy, upon which an interesting phrenological experiment was instituted. The cast was taken by permission of the sheriff, immediately after the execution, by a modeller from the Coalport China Manufactory, from whom I obtained it; and immediately on my return home, I wrote the following detailed paper on the character indicated by the cast, and confirmed by the circumstances of the crime for which the culprit suffered, as well as the various disclosures made during the trial, and the confession of the criminal himself.

"On the Head of the Murderer Williams."

On taking a first glance at the cast, the Phrenologist could not fail to observe that it was one of that shape so common among atrocious criminals as to have received the appellation of the "criminal type of head."

The head was in itself very large (the circumference over Individuality, Acquisitiveness, and Philoprogenitiveness being 24$\frac{1}{8}$ inches), consequently great power must have been asso-

ciated with it; but of course the nature of the power, whether it related to the animal, moral, or intellectual features of the character, would depend upon the relative development of the three regions of the brain, in which these organs are situated. And in noticing these regions of the head, the Phrenologist finds that the one occupied by the intellectual,—particularly the reflective organs,—is very feebly developed; and the coronal or moral region very poorly raised, while that of the animal propensities is absolutely enormous. In my own private collection of casts, there are twelve murderers, but none of them show so excessive an animal endowment as that of Williams. The cast of Hare closely resembles it, though it is not so bad as the one before us. From this general outline the Phrenologist would at once infer that the tastes and character of the individual were of the lowest kind, that he was the slave of his animal passions, and alike insensible to the pleasures of intelligence and morality. The largest organs exhibited by the cast are Combativeness, Destructiveness, Secretiveness, and Acquisitiveness (the last three are enormous), with Self-Esteem and Firmness also large. It would follow from this development, coupled with the deficient moral region, that his natural disposition would be quarrelsome, cruel, cunning, and prone to theft. Conscientiousness being small, there would not be that nice sense of right and wrong, which would be requisite to keep his Acquisitiveness within proper limits; Benevolence being poorly developed, there would not be that repugnance to an act of violence, which alone could control so enormous a Destructiveness; and Firmness and Secretiveness being also large, with Cautiousness by no means wanting, there would be watchful cunning enough to plot a scheme, which would pander to the cravings of Acquisitiveness, with Firmness enough to carry it out, and too little Benevolence to cause the heart to fail, though bloodshed might be requisite.

There is no deficiency of Veneration, but Hope is small,

and, as in most depraved criminals, Ideality and Wonder are both wanting; a large development of these organs giving a refinement and polish to the character, such as is inconsistent, with systematic familiarity with infamy and vice.

Among the intellectual organs none can be called large, except Individuality and Locality, and perhaps Order, the rest are all moderate or small, and the reflective organs exceedingly deficient. From this, therefore, the Phrenologist would say, that the head was that of a weak or uncultivated man. Let us now apply these inferences to his real character, as unfolded by the circumstances attending the crime for which he suffered, and by the confession of the criminal himself.

It appears that Williams was a very ignorant man, following the business of a horse-breaker, and that his companions were uniformly of the lowest and most depraved character; that he was habitually drunken, and violent, especially when under the influence of drink; that the crime for which he suffered death was the last of a series of offences; and that, though young in years (being only twenty-two years of age,) he had been more than once in gaol previously: thus showing that the phrenological indications respecting his excessive animal endowment, and the deficiency of the moral and intellectual regions are perfectly correct. The murder for which he suffered was cold-blooded, unprovoked, and premeditated; a desire (incited in the first instance by a companion as bad, or worse, than himself, but readily acquiesced in by Williams,) to possess the purse of a poor old woman, keeping a village shop, being the only motive; they at the same time fully determined not to stop short of murder, should that be deemed requisite for the accomplishment of their plan. On this subject, however, let the culprit be his own interpreter. In the confession made on the day prior to his execution, he thus speaks, "Slamson (his companion,) had gone to Bronygarth for half an ounce

of tobacco, after he heard this old woman lived by herself, on purpose to see what he could spy. He said I saw her purse. I made the agreement with him to go there. Slamson said, I thought to have taken another lad with me, if I had not seen you. I asked him if he thought one could get into the house, because Slamson said the other lad had got some false keys. We had agreed to take away her life, while we were together in the stable hay-loft at the lodge. I had, before this agreement was made, expressed a hope that, after waiting so long, we should not be deceived; and inquired whether he was sure the old woman had no one in the house with her. Slamson said she was quite alone, and that if I would be of the same mind with him, we should be certain of the money. I did not wish to go towards the house until about the middle of the night, but Slamson said we had better go about dusk; as the place was not much frequented, the door would then be open or unlocked, and we should be sure of getting into the house. I was to lay hold of her, while Slamson was to go to the counter, where he had seen the purse, and if he could not find it, he was to come and search her pockets while I held her, and if not found there we were to settle—that is to murder—the old thing. The door was shut, but not bolted; I knocked at the door and she opened it; I said, 'Have you got tobacco?' she replied 'Yes.' I said 'Please to give me an ounce.' She then turned towards the kitchen; I went in after her, Slamson was close at my back; I put my hands upon her mouth; she began to shout as well as she could; Slamson began to rummage for her pocket; he could not find it; we then threw her down between us; Slamson gave her the first kick on the head; I knocked her once or twice on the head afterwards, and cut her throat as she lay on her side; Slamson did not see me cut her throat; he went towards the door, thinking he heard some one coming. Both of us made the bargain to murder her, if we could not rob her without. Slamson, though he may

not have seen me use the knife, knew very well what I was doing; as he was not three yards from me, and the old woman at the time. After this I said, 'Come here, for I have settled her;' then said he, 'We will have a fair rummage.'" This statement of the coolly made arrangements, and brutal execution of the plan, is horrible indeed; but it accords perfectly with Williams's immense development of Destructiveness, Acquisitiveness, Secretiveness, and Firmness. Another incident, taken also from his own confession, will show still further to what an extent of crime he was impelled by the cravings of his Acquisitiveness, which his small Conscientiousness, combined with the want of a religious education, was totally unable to control. "The Saturday night after the honey-fair at Wrexham, about two or three years ago, I and some other companions were out together, and about the middle of the night we found Thomas Jones, an old man, fast asleep, lying on the steps of Highgate public-house. I went up to him and picked his pocket of a purse, containing thirty-six sovereigns and a half, and made off as fast as we could. I did not take either his hat or the silver he lost. We divided the money amongst us in equal shares." According to Phrenology, Amativeness is also very large, and to the abuse of this propensity he attributes, in a great measure, the sad end to which he came. He says, "I began with Sabbath-breaking, and playing at pitch and toss on Sundays, and frequenting public-houses, which caused me to lose my work; and then I got bad companions, particularly bad women, and did anything I could to get money to spend in a public-house."

Among the moral organs we have seen that Hope, Wonder, and Ideality are, besides Conscientiousness, all small. Nothing more need be stated to show that, as far as the latter organ is concerned, its small development accords with the real character; and the truth of the phrenological indications respecting Ideality and Wonder will be equally apparent

from the general tenor of his life and pursuits. We know nothing respecting his hope until after his trial and sentence; then, however, unlike some other criminals, who have almost to the last moment indulged in expectations of a reprieve, Williams (notwithstanding the fact that his companion in crime, and the original instigator to the deed had met with a more lenient sentence,) appears immediately to have looked for the worst, and resigned himself to his fate, never expressing even a hope that he might escape the penalty which the law had attached to his crime. Veneration, however, is decidedly full, being better developed than any other organ in the moral region except Firmness, which has been already noticed. But though the organ of Veneration is by no means deficient, yet from the want of a religious education, and the immense preponderance of the animal propensities, it could not be expected to produce a great effect upon the character; particularly when under the influence of such unfavourable circumstances as those with which Williams was surrounded, from the very nature of his occupation, and the depraved companions with whom he generally associated. His Veneration was, however, shown by the strict observance of his religious duties, as well as his general demeanour, since his trial and sentence, and is strikingly apparent in the last words which the wretched culprit uttered. They were as follows:—

"When I was brought into this gaol, I knew not how to pray, nor did I understand anything about a Saviour, neither had I been in any place of worship for years before, excepting in a chapel in Ruthin gaol, where I also read the Bible; but while I was in chapel and reading the Bible, my thoughts were occupied about some roguishness or wickedness, so that I derived no benefit from either. But soon after I was brought here I heard a sermon about the 'Prodigal Son,' and what was then said, made a deep impression on my mind, so that my heart melted within me, and I

burst into tears. I thought the observations then made were so applicable to my case, that I trusted the door of mercy was opened, and that I might obtain an entrance thereto, through the merits of Jesus Christ. As soon as the service was over I knelt down to pray, and felt myself much relieved in my mind afterwards. From that time I gave up my thoughts to read my Bible with care and attention, constantly meditating upon some part or other of it, as I was directed by the chaplain."

The foregoing constitute the principal features in Williams's cerebral organization, and real character, the intellectual region generally, being so poorly developed as to present no striking peculiarities worthy of notice.

After I had written the above remarks, made from Phrenology, coupled with a knowledge of the real character, fearing lest I might be met by the unkind charge which has frequently been made on similar occasions, viz., that if the character would not tally with the head, we made the head to tally with the character, I deposited my paper in the hands of Dr. Bell, of this town; and thinking it would form a good Phrenological experiment, I sent the cast to Mr. Donovan of London, with a note, merely stating that the cast was that of an individual whose character was well known to myself, and requesting his opinion on the Phrenological indications. That gentleman, with his usual courtesy, at once acceded to my request, and the next post brought a note acknowledging the receipt of the cast, in the following terms.

"Dear Sir,—I have this morning received the cast, and as soon as I have recovered from the shock, which I have actually received from the inspection of it, I will write a paper thereon. Such poor things as Greenacre, and Good, fade into insignificance in comparison with this great chieftain of the ruffian race."

Without any further information on the subject from

myself, the next post brought me the communication from Mr. Donovan, containing the following concise and admirable summary of the character indicated by the cast.

"The head before me exhibits such an appalling tendency to every description of criminality, that one may almost debit the unfortunate person upon whom is was inflicted with 'the seven deadly sins' at once. These in my catechism, are denominated Pride, Covetousness, Lust, Anger, Gluttony, Envy, and Sloth. A nice inheritance these; and upon what, or whom, should our pity descend, if not upon him, who (from the operation of natural laws, which had begun to operate towards the production of such a result, perhaps a century before he was born,) came into this breathing world with such an organization. Here we have the murderer, the burglar, the ravisher, the drunkard

'Nascitur—non fit.'

"This creature, was of a lymphatic temperament; there was no activity but that which the necessity for acquiring the means of procuring sensual pleasures caused.

"But under this stimulus, it was not to labour he had recourse. It was necessary to get, but that which was done, was done quickly, and under excitement. Poaching, per force—not sneaking, snaring poaching, but open '*vi et armis*' work, or house-breaking, would be the most likely means of resource, if living in an agricultural community. In a city, employed at hard labour, such a man might go on tolerably well for a time; but the monster would ultimately break out, and then

'Hope withering fled, and Mercy sighed farewell.'

"I can see no indication of anything bordering on a virtue beyond that occasional good fellowship, which so often accompanies reckless profligacy. I cannot even suppose that, during the pauses between deeds of violence, such a person could keep his hands from picking and stealing. We have, therefore, the wholesale and retail robber.

"Some social attachments might have shown 'one virtue 'mid a thousand crimes,' but there was no security even for friend or wife (a child only would perhaps be safe), when the monster within was roused.

"As regards the intellect, a good deal of shrewdness and cunning must have existed, when the passions were in abeyance. In any occupation quickness and readiness would be shown, when there was an object to stimulate to activity. Of such a person common people would say, if he would only exert himself, he could do this or that. This being was intellectually educatable, though morally, nothing short of a series of miracles could keep him in the right path. There is a fulness in the region of Number very close to where the organ is said to be; close enough, I think, to warrant the existence of the faculty in a high degree. He might be brought to some sense of the enormity of his crimes in a religious view; and, in extremes would exhibit a show of repentance, but his regret would really be for his detection, not his crimes. He would, however, die boldly, if not recklessly; but his boldness would be the hardihood of the monster, rather than the undaunted courage of the noble savage man. Gluttony and drunkenness having been predominant features, I cannot, with every disposition to qualify my opinion on some point or other, see any ground for believing the character to have had any redeeming features. There is so strong a tendency to every vice, and such an impulsive force and self-reliance, that nature seems to have done her very best to produce a sample of mankind of the very worst.

"C. Donovan.

"*London, June 4th*, 1842."

On the general correspondence between the two papers (the one written with a knowledge of the real character, the other in total ignorance of it), I need scarcely remark; as you will all observe, there is not a single point of contradiction. There may be an apparent difference in our estimates

of the organs of Order and Number, but this difference is only an apparent one. Mr. Donovan speaks of a "fulness in the region of Number, close to where the organ is said to be;" this fulness I had also noticed, and was uncertain whether it belonged to Order, or the adjoining organ Number: hence in my examination of the large organs, I added, "perhaps also Order."

All these minutiæ spoken of by Mr. Donovan, are singularly correct, even the manner in which Williams met his ignominious death, the boldness pointed out, was shown by his coolness on the scaffold, for he appeared less concerned than any of the spectators. It was impossible for Mr. Donovan (even if his own high character were not a sufficient guarantee) to know anything of the individual. I submit that they afford a striking and beautiful instance of the correctness of the Phrenological indications. If, however, it still be maintained that these were mere guesses, then I, on the other hand, shall be compelled to maintain that we are wrong, in imagining the age of miracles and witchcraft to be past.

We have now briefly noticed the three classes of minds into which, at the outset, we divided the human race; and in doing so, we have had some black specimens of humanity before us. It will, however, be consolatory to the philanthropist to know that the third class of minds is relatively not numerous: for, taking all the thieves, profligates, and desperadoes in the kingdom, it has been calculated that they do not nearly amount to so great a number as class one; and taking the aggregate of the two first classes, they would be together at least twenty to one, in proportion to the third class. We have seen, also, that our criminals are generally, indeed universally, found in the second and third classes.

But perhaps some persons present, who have not paid much attention to Phrenology, may regard these, not as facts, but as dangerous speculations. To them, I can only

say, that if they will take the same means to discover whether these are truths in nature or not, that Phrenologists have done, they will find it as impossible to doubt of their reality, as of the existence of the sun at noonday; and there is no rule of philosophy by which facts should be disregarded, merely because they are unknown to those who have never taken the trouble to observe them.

The Phrenologist is merely an humble investigator of the ways and works of God as set forth in man's mental constitution; his search is after truth, and when he meets with this, he fearlessly proclaims it, feeling convinced that in a world like this (where error exists on every side, and is so prolific a source of evil, all truth must be either actually, or presently, remotely, or contingently, useful. I may add further, that the general views in reference to the shape of criminal heads here expressed, are not based on the small number of casts chosen from my own private collection; but that I have myself examined some hundreds, both of casts and living heads, and other Phrenologists many thousands more, and yet (however uncertain the indications respecting some two or three of the organs, which have never been established) I am not aware of any single exception having ever been adduced to the rule laid down respecting the functions of the three divisions of the brain. Phrenologists have often enough challenged their opponents (and I have no hesitation in this evening renewing the challenge,) to produce a single instance of the splendid moral and intellectual endowments of a Melancthon, a Cuvier, a Spurzheim, or a Scott, being associated with the wretched cerebral developments of a Hare, a Greenacre, a Gottfried, or a Williams; or, *vice versâ*, of the fine frontal and coronal developments of the first-mentioned illustrious individuals, in the case of any of the depraved and incorrigible criminals too frequently coming before our attention even in the middle of the nineteenth century of the Christian era. Indeed, I know of no better means of convincing

an opponent of the general truth of our science, than by taking him to a meeting of some of our most eminent literary and scientific characters,—for instance, the British Association; and after noticing the heads which he would there see, take him to the criminal side of our gaols, to compare them with those of prisoners; or, to save trouble, let him attend one of our courts of assize, and compare the heads of the barristers and judges with those of the miserable criminals. But before basing any system of criminal jurisprudence on the facts which have been laid before us, the question of responsibility must be discussed; and here I feel we are treading upon dangerous ground. With the doctrines which enforce responsibility to our Maker, we as a Philosophical Society, have nothing to do, our rules very wisely precluding all subjects of a religious or sectarian character. I apprehend, however, that I shall not be transgressing these rules, by briefly stating, that Phrenology leaves this question just where it found it; and that we go no further on this subject, than even our opponents themselves. They in ordinary conversation often speak of persons possessing "naturally good or bad tempers,"—"naturally amiable or vicious dispositions;" and the Phrenologist finding that these dispositions are invariably accompanied by certain forms of head, merely substitutes the term "organization" for "disposition," without altering the spirit of the proposition one tittle. Indeed I may remark that Phrenology precisely agrees with the parable of the talents, in finding one man possessing five, another two, and a third only one, in a moral as well as in an intellectual sense; and as we are to be judged by Him who made us, the return required will doubtless be in proportion to the loan intrusted: and knowing our Maker is "too wise to err, too good to be unkind," I am fully content to leave the subject in His hands.

But if our Society forbid the discussion of that responsibility to our Creator, which is generally considered to come

within the province of theology, I presume that it will not forbid the examination of that responsibility to the laws, which, as members of society, claiming the protection of those laws, we necessarily incur.

And primarily, in reference to the first class of minds,—these individuals, having superior intellects and enlightened moral sentiments to guide them, are, as it were, "a law unto themselves;" they require no penal code for the regulation of their own conduct, and ought, therefore, to be ever foremost in the ranks, to assist their less fortunate fellows in schemes of charity, education, and philanthropy. Having received much, they ought to bring forth much fruit.

Again, the second class of minds, from which most of our less depraved criminals arise, possess in general a sufficient moiety both of intellect, and moral powers to know right from wrong. When they commit a sin, they feel remorse, clearly showing that they are conscious of having done wrong, and if they are able to judge between right and wrong, they are surely amenable both to divine and to human laws when they do wrong.

Lastly, in reference to the third class, it becomes a question how far they are, in many cases, capable of judging between right and wrong; or, if capable of judging intellectually on the subject, how far they really have the power of restraining their rampant passions and propensities; whether they are not reduced to the condition of vicious lunatics, rather than responsible agents. Let it be here understood that I speak only of their responsibility to society not to their Maker, for to their own Master "they must stand or fall." Mc'Innes, as we have seen, when under sentence of death, could not be brought to feel the enormity of her crimes, or to form any idea of moral right or wrong. Many similar cases might be quoted. Mr. Combe mentions "a criminal of this description, who had been sent to the Lunatic Asylum in Dublin, in consequence of the belief that a life of such undeviating wickedness as

he had led, could only result from insanity, for he had repeatedly undergone every species of punishment civil and military, short of death, and had also been sentenced to death, all without effect. Yet the physician, Dr. Crawford, assured him, that he was not insane in the usual acceptation of the term; that all his mental perceptions, so far as he possessed them, were sound, but that he had scarcely any natural capacity of feeling or comprehending the dictates of moral obligation, while he was subject to the most energetic action of the animal propensities, whenever an external cause of excitement presented itself. In 1835, he saw another example of the same kind in the gaol of Newcastle, in the person of an old man seventy-three years of age, who was then under sentence of transportation for theft, and whose whole life had been spent in crime. He had been twice transported, and at the age of seventy-three was still in the hands of justice, to suffer for his offences against the law."—Combe's Moral Philosophy.

But because this class,—happily a limited one,—are in some cases really unable to struggle with their volcanic passions, does no responsibility attach here? Undoubtedly there does, though it should partially be placed on other shoulders. A fearful responsibility rests upon those indiscreet parents, whose vices are thus inflicted upon helpless infancy, and who, by a systematic pursuit of intemperance and debauchery, have so enfeebled their own physical and mental constitutions, as to usher on to this stage of existence, beings naturally susceptible of vicious influences, and predisposed to every crime. The first class of individuals, too, who, from their superior endowments and advantages in education, take the lead in society, necessarily incur, from the very position which they hold, a high degree of responsibility in reference to their unfortunate brethren who are not similarly gifted. This is a responsibility which is too often forgotten, or of the nature and extent of which, very narrow views are generally entertained. Gifted individuals

remember perhaps, and that rightly, that they are responsible for their own conduct to their Maker, but forget too frequently this other kind of responsibility, which, though less remembered, is not less binding than the other. It should never be forgotten; that as members of the human race we are members of one family, in which there are numerous fraternal duties to be performed; that society is a body politic, in which every one occupies a certain position, in relation to the other members,—a position involving numerous relative duties for the efficient discharge of which, we are assuredly responsible. What then is the duty of the first class of minds in reference to the second and the third? I answer that their first and paramount duty is to afford to all, good moral and intellectual culture.

Let society look well to her fearful responsibilities, and see that she supplies her members with a moral, religious, and intellectual education, sufficient to enable them to distinguish between "what is right and what is wrong."

We shall then be spared the painful perusal of such statistics as the following. It appears that out of one thousand and thirty prisoners in Preston gaol, four hundred and thirty-eight were ignorant of the Saviour's name, and unable to repeat the Lord's Prayer. And on consulting Mr. Rawson's calculation for the whole of England and Wales, it appears that only four in a thousand have received such an amount of education as to be in the least worthy of the name. The paramount duty therefore of the first class of minds is, doubtless, to aim at the prevention of crime, by raising the standard of civilization, and giving every member of society a sound, religious, moral, and intellectual education. That this would produce an infinitely beneficial effect on the second class of minds, who are so much at the mercy of external influences, is quite certain; and that it would materially improve the third class, there can be little doubt. For though it could not exalt the grovelling intellect, and wretched moral endowment of a Hare, a Mc'Innes, or a

Williams to the lofty elevation of a Cuvier, a Melancthon, or a Newton; yet there are degrees of badness, as well as of goodness, and those who are now the very worst, might certainly be raised a little in the moral scale.

But the remedy which we are now considering, relates solely to the rising generation,—to those who are at present only undergraduates in the school of vice, but who, without some counteracting agency, may hereafter become the inmates of our gaols; in other words, it relates solely to the prevention of crime for the future. But another and most important question here arises, viz., what is to be done of a punitive or reformatory character, to those who have forfeited their claim to liberty and the rights of citizens, by actually becoming criminals? Are they to be hanged like dogs, and at once exterminated; are they to be visited with penal inflictions merely by way of revenge? Are they to be unpunished? or are any reformatory measures to be taken? These are questions of immense importance, and deserving our most serious consideration; they cannot, however, possibly be answered at the close of a paper like this, but I hope, before the session terminates, to follow up the subject, by another paper on Crimina Jurisprudence generally.

17*th October*, 1841.

LECTURE X.

ON CRIMINAL JURISPRUDENCE.

Last session I brought before this society a few remarks upon the "Heads of Criminals." I stated then my intention of following up that subject on some future occasion, by a paper on "Criminal Jurisprudence." I purpose this evening carrying out that intention; and in doing so, I cannot but painfully feel that such a subject, involving as it does the deepest interests, of a large class of our unhappy fellow creatures, ought to be grasped by a far more able hand than mine; yet my object will be attained, if this feeble effort lead our minds to the *consideration* of a topic of such paramount importance.

In the previous paper, we divided mankind generally into three classes. After examining their various phases, we left off, by inquiring what was to be done with a large portion of the second class, which, if left solely to external influences, would fall into vicious habits, that might lead them to become occupants of our jails? And also how we should treat the third and lowest class of individuals, who had forfeited their claim to liberty and the rights of citizenship?

These are the questions we hope to answer briefly this evening. I say briefly, because so extensive a subject can be scarcely glanced at, within the narrow limits usually assigned to a paper of this description. But before proceeding more immediately to the consideration of this subject, I would

observe that, as in most attempts at classification on a large scale, so in that made in my remarks on "the Heads of Criminals," there are some few cases which do not seem exactly to belong to any of the great divisions marked out. There are, for example, instances of persons committing crime, who appear to do so, not from possessing a generally defective moral region, nor from having the selfish propensities in any great excess; but from their minds being unevenly balanced, from their possessing one organ perhaps, (such as Acquisitiveness,) immensely large, or another, (such as Conscientiousness,) extremely deficient. These individuals occasionally commit crime under strong temptations, although their dispositions in all other points are good. Mr. Combe mentions an instance of this kind; he says, "I knew an individual in the situation of a confidential clerk, who had a good intellect, much Benevolence, Veneration, and Love of Approbation, but in whom a large organ of Secretiveness was combined with a great deficiency of Conscientiousness. His life had been respectable for many years, in the situation of a clerk, while his duty was merely to write books, and conduct correspondence; but when he was promoted, and intrusted with buying and selling, his moral principles gave way. And the temptation was not a selfish one. He was much devoted to religion, and he began by lending his master's money for a few days to his religious friends, who did not always pay him back; he then proceeded to assist the poorer brethren with it; he next opened his house in great hospitality to the members of the congregation to which he belonged. These expenses speedily placed his cash so extensively in arrears, that he had no hope by any ordinary means of recovering his deficiency, and he then purchased lottery tickets to an enormous extent, trusting to a good prize for his restoration to independence and honour. These prizes never came, and the result was disclosure, misery, and disgrace."—Moral Philosophy, p. 298.

Now, while speaking of the prevention of crime, before

noticing the treatment of actual criminals, I would observe that it is a duty which society owes, no less to herself, than to her members individually, to avoid placing such persons in situations where any particular deficient organ, will be severely tasked. What would be thought of the propriety of employing as an errand boy, a youth with a diseased leg, and prescribing as his daily task a certain amount of running exercise, ordaining at the same time penal inflictions in the event of his failing to accomplish it, or of enjoining an individual like Ann Ormerod (in whom tune was so deficient that Handel's finest oratorios only gave her the idea of thunder, or the rumbling of a waggon over the pavement), to perform daily an exquisite musical air, and when she fails (which she inevitably would do), throwing her into gaol, or exiling her from her native land? Yet, glaringly inconsistent as this conduct would be, these are no imaginary nor over-drawn pictures, their counterpart may be constantly met with, not in the regions of romance, nor in the by-gone days of barbarism, but at the present time in our own civilized land.

It is known that notwithstanding every effort on the part of the chief officers of the Post Office in Britain, to select honest individuals for that department, numerous depredations take place in it; so that a day never closes on which one or more capital felonies have not taken place, in abstracting money from letters.—Combe, p. 296. Why is this? It is because persons with deficient Conscientiousness or generally defective moral regions, have been placed in positions for which they were not naturally qualified; positions in which a decided predominance of *all* the moral organs was required to enable them to withstand the various temptations by which they are surrounded,—positions for which they are as completely disqualified as the lame errand-boy in my supposed case, or Ann Ormerod for the leader of a choir. These individuals had perhaps enjoyed good characters previously; but in all probability they had not

before been placed in situations, where their defective restraining power was so severely tasked, and therefore previous character is a very insufficient criterion. I maintain, then, that to prevent crime of this description, it is the duty of the first class of minds, in every possible instance, to avoid "leading into temptation" by placing in responsible or other positions, persons who for those situations are not naturally qualified. Then comes the question, How, if previous character cannot be depended upon, is society to distinguish who are, and who are not fit for situations of trust and responsibility? This question may be answered differently by different parties; but, if Phrenology be what its advocates maintain, then it would in most cases answer the end proposed, and be equally the interest and duty of society so to apply it.

But dismissing these considerations, let us now come to the question:—What ought to be done by the first class of minds *to* and *with* those of the second and third classes, who have infringed the laws, and become criminals? And with a view of meeting this question more fully, let us notice firstly, what should be the *object* of society in the treatment of criminals; and, secondly, what *means* are, and might be adopted, to effect this object.

And in the first place, perhaps the best mode of showing what this object *should* be, will be briefly to point out what it should *not* be. And I think all present will coincide with me, when I express my deliberate conviction that *the* object ought not to be the extermination of criminals by capital punishments. Society, (by which I mean the first class of minds—who take the lead in society, and are our chief lawmakers, who for the most part base the laws, as indeed they ought to do, upon the doctrine of the supremacy of the intellect and moral sentiments, over the animal propensities,)—society, I say, appears to me to have no real RIGHT to take away *the life* of any of her members. She cannot, for the infringement of any of her laws, have any abstract right

to take away any benefit which she had not at first the means of conferring. *Life* she did not give, neither ought she under any circumstances to take it away. *Liberty* she does give; for paradoxical as it may appear, society, by binding us with laws, virtually insures our freedom; that is, her laws, by protecting us against the would-be law*less*, secure the peaceable and well-disposed in the possession of their liberty. But even admitting for the sake of argument that society had this right (to take away the life of her members), we all know from actual observation that its exercise has proved a miserable failure; and that those crimes for which capital punishments were once inflicted, have, where the experiment has been made, in every single instance been of less frequent occurrence, when that punishment has been remitted. The crimes of horse-stealing, forgery, house-breaking, &c., might be referred to, in proof of this. The objections to capital punishments are so many, and so great, that they cannot be fully stated here, nor indeed is this necessary; I may, however, just enumerate a *few* of these objections.

And first, public executions have the acknowledged effect of exciting the destructive impulse, coupled with the *imitative* tendency, which is to a greater or lesser degree, inherent in every human mind. It is a well known fact that the class of persons by whom executions are attended, are those who feel a peculiar kind of fascination in witnessing the infliction of pain; and this class is more than any other predisposed to homicidal mania. It has been stated by Mr. Ewart, in the House of Commons, upon the most unquestionable testimony, that out of a hundred and sixty-seven persons who have been executed, *a hundred and sixty-four* had been present at *executions*.—Sampson, p. 23.

The Metropolitan Magazine for March, 1840, contained a curious account of one of the natural results which arise from these exhibitions. It ran as follows:—"ODD TASTE FOR NEWGATE ROPES, AND ITS CONSEQUENCES.—We knew

a healthy, robust, independent gentleman, who went some years since with the Sheriff into the interior of Newgate to visit a malefactor who was to be executed the same day. After the drop had fallen, he went with others to the breakfast-table, where he could think of nothing but the execution he had witnessed; and before he left he requested the sheriff to procure the rope with which the man had been suspended. It may be mentioned that it was not an execution of common occurrence. Possessing one rope, it subsequently occurred to him, as the next much-talked-of execution was to take place, that he would also have the rope used on that occasion. In the course of a short time, he had a collection of ropes, labelled and deposited carefully in a drawer. About two years after the desire for collecting ropes had manifested itself, it was observed by his friends that his conversation most frequently turned on the subject of the executions he had witnessed, and the success he had met with in procuring such a number of ropes; which he usually brought out to exhibit to his friends, expatiating on the comparative merits or demerits of the sufferers, until his society at length became quite unbearable, and he received the sobriquet of "the man with the pensile idea." He lived about fourteen years after witnessing the first execution; at last putting an end to his own life by suspending his body with one of the ropes which he had collected from the hangman."

Secondly, there is a strong feeling of objection in the natural and intuitive disinclination of benevolent men to become the means of putting a fellow-creature to death, and the consequent falsification of their duties as jurors, by which means a culprit of the most dangerous kind is sometimes permitted to escape.

Thirdly, another evil of this punishment is presented in the occasional instances which occur of parties suffering innocently; society being thus disabled from offering reparation for injuries which she herself has inflicted.

Fourthly, the employment of death-punishment destroys one source of testimonial proof. The death of one criminal is, in a great measure, an act of amnesty in favour of all his accomplices. The "honour-among-thieves" feeling can nerve a man to die like a wolf, in silence. But amid the tedium of confinement, haunted by fancy's pictures of the liberty his equally guilty colleagues are enjoying, his determination may relax, and information calculated to promote the ends of justice be obtained from him.

And fifthly, the objection has been already stated that sanguinary punishments, as a means of example to others, have proved a miserable failure. Indeed, looking at the matter Phrenologically, it appears to me that our Legislators, in instituting capital punishments, with the idea of inspiring respect and terror of the law, have forgotten in a great measure the kind of materials with which they had to do. They themselves, I mean the first class of minds, can fancy nothing to themselves more horrible than the idea of a premature and ignominious death by the hangman; and, therefore, they assume or imagine that it would be equally terrible to the criminals themselves. Now here was an assumption neither warranted by the premises on which it was based, nor confirmed by actual experience; for though terror might have a certain effect upon some members of the second class of minds, yet most of our murderers belong to the third class, whose familiarity with vice is too great, their moral emotions too feeble, their knowledge of a future world too slight, and their animal passions too powerful to allow them to be intimidated by the fear of death.

Take, for instance, one case; that of a man named Taylor, who was hanged for murder at Fisherton Gaol on the 16th March, 1840. Attempts had been made to obtain a commutation of his sentence, but Judge Erskine and the visiting Justices declared that his mind was perfectly healthy, and he was accordingly left for execution. After singing "Jim Crow" upon the scaffold, and recommending the populace

to kill as many people as they could, he stated that "hanging was just the fun he liked."

Mr. Sampson, in his admirable letters on "Criminal Jurisprudence, Considered in Relation to Mental Organization," throws quite a new light upon the subject. He shows (what at all events every Phrenologist knows to be correct) that the homicidal and suicidal tendencies are mere modifications of the same animal propensity, viz., the destructive, and further, that in the great majority of cases, the two go together. Nor is this a mere theoretical opinion; it is unfortunately supported by irresistable evidence.

Mr. Sampson commences his fifth letter by stating that "however unsuitable the punishment of death may be for other descriptions of crime, it is above all the most unfit to be applied as a corrective in cases of homicide; and he corroborates his assertion by showing that the contemplation of this punishment, so far from producing a beneficial effect upon the minds of persons labouring under homicidal tendencies, actually, in many cases, stimulates them to the commission of the crime.

Then follows a list of all the homicides, recorded in the Annual Register, as having been committed in Great Britain during the five years from 1830 to 1836 inclusive. In this list, in the great majority of cases, suicide was attempted immediately after the perpetration of the murders, or (what amounted to *negative* suicide), the parties confessed their guilt, and expressed a wish to die; nor, as he shows by reference to the actual cases, was this the result of remorse, but the penalty of death was fully contemplated and calculated upon prior to the commission of the crimes. One of Mr. Sampson's cases is well worthy of attention:—it is that of William Lees, executed for the murder of his wife. "It was satisfactorily proved that he had, at various times, received severe wounds on the head, the scars of which remained, and were of a permanent nature. Those about

him had often found it needful to remove dangerous instruments from his reach; and on different occasions *he did violence to himself.* When brought up for examination he had an absolute fit, which deprived him of consciousness; and required the abstraction of one or two pints of blood for his recovery. This man, after having murdered his wife, prepared a rope for the purpose of hanging himself; but he deferred his purpose, and went first to acquaint his friends with the crime he had committed. After this he was taken into custody; and as it appeared upon his trial that he had committed one crime—the murder of his wife, and that he had intended to commit another of equal magnitude —the murder of himself, the law awarded *that*, as a *punishment* for the first, *his desire* for the second should be *gratified;* and he was accordingly executed in the *very* way which he had previously contemplated"—(p. 21). Enough, I think, has now been said to show that even *if* society had the right (which I cannot admit) it still is not politic to punish criminals, particularly murderers, by death.

Nor, in fact (if we speak strictly) does it seem to be the duty of society to "punish" at all. The very term punishment, if we adopt Walker's definition of it, means "an infliction imposed in vengeance of a crime." Now, with *vengeance* MAN has nothing to do;—at least, it but ill accords with the genius of Christianity, to make vengeance a leading principle in any of our laws. In the words of Mr. Combe, "Revenge is the feeling of savages, and of all rude and naturally cruel minds; and if we allow this as our principle of action, and carry it consistently into effect, we should erect instruments of torture, and put our criminals to a cruel and lingering death." There is One who has said, "Vengeance is mine;" to Him, therefore, let it be left to inflict that vengeance which certainly belongs not to erring man. Under any circumstances, however, society (if she had the right) is not in a position to inflict vengeance until she has discharged her own duty to her

members. It is too bad to leave them uncultivated, tossed to and fro by every external influence, rent and torn by the volcanic agency of their passions:—the second class, who are most susceptible of external influences, left in that state of ignorance, which renders them liable to drink in every breath of contagion, but impervious to every good; and the third class, with all their animalism uncorrected and unrestrained, and then to punish them for the consequences of her own neglect. There is a great deal of truthful satire in an imaginary letter from a young pickpocket, just on the eve of transportation, published some years ago in a little work, entitled "Old-Bailey Experience." It runs as follows:—

"I was born in Dyot-street. I never remember my mother; but my father's companions spoke of her as one who had been transported for passing bad money; my father used to look gloomy and sorrowful when she was mentioned, and never recovered without a glass of liquor. Some people said she died broken-hearted in gaol; but I never heard the truth of it. In our street, he who thieved most cleverly was most admired; and the only disgrace that could be incurred was the shame of detection. I sometimes, at the end of it, saw people ride past in fine coaches, and these, I supposed, had robbed still more successfully. I knew nothing, and was taught nothing but to steal; and I practised my art with an industry which I thought most laudable. I have heard of God, of hell, and of the devil; and they once told me when the bell tolled at St. Giles's, that people went there to pray that they might go to heaven; but I saw nobody who seemed to believe this, and I thought these words and many others were only useful to swear by. The only thing I was taught to fear was a thief-catcher; and though I eluded his vigilance for some time he caught me at last. In prison the parson told me how I ought to have been brought up. He found that I had never been idle, that I had laboured in my calling, that I had never robbed my father nor cheated my landlady, and that to the

best of my power I had done what I was told to do; and yet I was put into gaol, and if I had not been a very little boy, the parson said I should have been hanged. There are some hundreds of boys in London who are all living as I lived; and, when I was tried, a gentleman in a big wig talked very kindly to me; he said he would have a school in Dyot-street, where boys might be told what was right; and I think, sir, before they are caught and hanged, it would be just honest to tell them that they are in danger of it, and to tell them what is law and what is society, and not to let them hear of it for the *first* time when they are tried.

"I am going, they say, among savages, and I never desire to come back; the savages would have taken care of my education, have taught me to hunt, shoot, and fish; and would have told me how to be a great and good man, but the *christians* have not done so; and if it was not that I am sorry for my companions that are left behind, I would not give myself the trouble of asking my fellow prisoner to write this letter. .

"JACK WILD."

Having seen, then, what is *not* the duty of society to do with criminals, viz., that it is not right to take away their lives, nor yet to inflict punishment by way of revenge; we come next to the question, what *should* be the object of society in the treatment of criminals? The answer is brief and simple. The real and legitimate object of the criminal law in a Christian country should be to protect society by example, and to reform the criminals themselves. Pain inflicted for a crime, except in so far as (like that of a surgical operation) it is a means of a cure, is vengeance; renouncing, therefore, this principle as unchristian, we have the two other principles remaining to guide our steps; first, that of protecting society; and secondly, that of reforming the offender. Now, bearing in mind this twofold object, which should ever be kept in sight, let us notice the means at present adopted by society in this country to accomplish this object,—with a view of ascertain-

ing on what principle our criminal treatment is based: and I think we shall discover that the principle chiefly, though unintentionally, acted upon by the superior classes of society in their sentences upon prisoners, is revenge or vengeance. If a boy rob a till of a few pence he is sentenced to eight days' imprisonment in gaol; that is to eight days' idleness, passed in the society of accomplished thieves and profligate blackguards, at the end of which space he is liberated. The only conceivable principle here is, that the eight days' confinement caused a quantity of suffering equal to a fair vengeance for robbing the till. If a female steal clothes from a hedge, she is sentenced to six weeks' confinement at Bridewell, where she is forced to work in the society of ten or twelve profligates like herself during the day, and is locked up alone for the night. At the end of the six weeks, she is liberated, and turned adrift on society. If a man commit more extensive theft, he is committed for a longer period, or transported; the term of confinement, and the time of transportation, bearing an uniform, and, as far as possible, a supposed just relation to the magnitute of the offence. Now there is really no principle very distinctly recognizable here except *revenge*.—Combe, Moral Phil., p. 309.

We see then that the very principle upon which our legislative enactments respecting criminals rest, is a defective and improper one. Further than this, if the principle were a proper one, it does appear to me that the system pursued in our gaols, is about *the* very worst that could by possibility be devised to effect the object proposed. And, first, as to the reformation of the offender. In our British gaols, it is well known than the inmates are usually utterly idle, instead of being led as much as possible during their confinement, to cultivate habits of sober industry. It is a saying of a quaint old divine, as remarkable for truth as pithiness, that "the devil tempts all men but the idle, and they tempt the devil." Idleness, together with intoxication, are two of the chief sources of crime; what then can be expected from a system

that not only permits, but encourages the former? It may, however, be urged, that in the case of those committed to hard labour, idleness is *not* permitted; and this is certainly true, but even *then*, the kind of labour is one not at all likely to inspire the love of it, or to improve the habits of the criminals. Crime arises from the activity and power of the animal propensities overcoming the moral and intellectual powers. The proper mode, therefore, of treating criminals would be to restrain the animal propensities, and at the same time excite and stimulate the dormant moral sentiments and intellect. Now mounting the steps of a treadmill merely exercises the muscles, and only acts on the mind by exhausting the nervous energy and producing fatigue. It does not excite a single moral nor intellectual faculty; and further still, the criminal cannot fail to know and feel that the labour is inflicted by way of punishment or revenge, and with no view to his own improvement; thus mortification, anger, and resentment are the only feelings likely to be excited by labour such as this. Every criminal should certainly be regularly employed, and that too in such a manner as to call into exercise as many of the intellectual and moral powers as possible; so that, if practicable, during his term of imprisonment, he may acquire such habits of control over his animal propensities, as to abstain from further crime when liberated.

But another objection, already hinted at, is—that except for murder or some capital offence, criminals are crowded together, and have habitually no society but that of each other. Most of you will recollect the dying words of the murderer Williams, as quoted in my last paper,—"I was made worse by being two months in Ruthin gaol as a vagabond: all the misdemeanants were together in one court, and we learned a great deal of wickedness there."

Mr. Combe in his excellent lectures on Moral Philosophy, says, "If I wished to invent a school or college for training men to become habitual criminals, I could not imagine an

institution more perfect for the purpose than one of our gaols. Men, and often boys, in whom the propensities are naturally strong, are left in complete idleness, so that their strongest and lowest faculties may enjoy ample leisure to luxuriate; and they are placed in each other's society, so that their polluted minds may more effectually avail themselves of leisure in communicating their experience to each other, and cultivating the propensities by example and precept into increased energy and more extensive activity. The proper treatment would be to separate them as much as possible from each other; and while they are in each other's society, to prevent them by the most vigilant superintendence from communicating immoral ideas and expressions to each other's minds. If any relative of ours, possessing an average development of the bones and muscles of the legs, had through real indolence lost the use of them, and become incapable of walking, should we act wisely with a view to his recovery, by fixing him into an arm-chair, from which it was impossible for him to rise? Yet, when we lock up criminals in prison, amidst beings who never give expression to a moral emotion, without its becoming a subject of ridicule,—when we exclude from their society all moral and intelligent men calculated to rouse and excite their higher faculties,—and when we provide no efficient means for their instruction, we do in fact as effectually deprive all their superior powers of the means of exercise and improvement, as we should the patient with feeble legs, by pinioning him down into a chair."—Combe.

We see then that, as far as the reformation of the offender is concerned, the present system is utterly inefficient, idleness and the society of profligate companions, two of the greatest incentives to vice, not only being suffered to remain, but actually enforced; and no measures being taken to encourage the activity of those moral and intellectual organs, the supremacy of which would be the only safeguard against a further lapse into crime. And if

it be ineffectual in improving the offender, it is necessarily so to secure the second object of criminal legislation, the protection of society. As has been already observed, during a prisoner's sojourn in gaol, he has leisure to plot new schemes of crime; he can enjoy and profit by the society of some of the master-spirits in his profession, and comes forth with increased capabilities for prosecuting his nefarious career, only having learned perhaps to be more wary and subtle in future.

And now, after pointing out some of the more glaring defects of the present system, I shall very naturally be asked, what improvement can be suggested? The answer is, convert our goals into moral hospitals or penitentiaries, and let the principle of revenge be entirely repudiated both in theory and practice. In order to repress the over-active propensities, confinement and restraint must, of course, be resorted to, and to excite the under-active moral sentiments and intellect, employment, absence of profligate society, and moral and intellectual tuition, are also necessary. The number of higher minds, that hold communion with criminals, should also be increased, and these should encourage them to read and exercise all their best powers in every practicable manner: for on the same principle in which the presence of profligate associates cultivates and strengthens the animal propensities, does the society of virtuous men excite and strengthen the moral and intellectual powers. Let the culprit be thus restrained from injuring society, and undergo the reformatory treatment, not for a given period of imprisonment, but until it is considered safe to trust him with his liberty again. Society then will have far less reason to fear his recourse to acts of vice a second time, than if he had been merely confined, as now, for a given period among profligates as bad or worse than himself. He would during this treatment be brought to *think;* his inferior feelings would be tamed; his higher powers invigorated. If he had previously been idle and dissolute, he

would be taught habits of temperance and industry, and re-commitments would be of much less frequent occurrence than they are at present.

On the subject of re-commitments, Mr. Brebner, the Superintendent of the Glasgow Bridewell, has made some deeply interesting observations. He has observed "that offenders committed for the *first time*, for only a short period, almost invariably return to Bridewell for new offences; but if committed for a long period, they return less frequently." This fact is established by the following table, framed on an average of ten years, ending December 25th, 1825.

"Of prisoners sentenced for the FIRST TIME to fourteen days' confinement, there returned under sentence for new crimes, about .. .. 75 per cent.

30	days'	confinement,	about	..	60 per cent.
40	"	"	"	..	50 "
60	"	"	"	..	40 "
3	months	"	"	..	25 "
6	"	"	"	..	10 "
9	"	"	"	..	7½ "
12	"	"	"	..	4 "
18	"	"	"	..	1 "
24	"	"	"	..	0 "

During the ten years, ninety-three persons were committed for the first time for two years, not one of whom returned. Mr. Brebner remarked, that when prisoners come back to Bridewell two or three times, they go on returning at intervals for many years. He has observed, that many prisoners committed for short periods for first offences, are afterwards tried before the High Court of Justiciary, and transported or hanged. Judging from the ultimate effect, we here discover that the individuals who for some petty offences are committed to Bridewell for the first time for only fourteen days, are in reality more severely punished than those who, for some more grave infringement of the

law, are sentenced at first to two years' imprisonment; nay, the ultimate result to the petty delinquent would have been far more beneficial, if for his trifling offence he had been sentenced to two years' imprisonment instead of fourteen days. The sentence of fourteen days' confinement merely destroyed his moral sensibilities (if he had any), initiated him in the knowledge of the mysteries of a prison, introduced him to accomplished thieves, enabled him to profit by their instruction, and when thus deteriorated, and also deprived of every remnant of character, it turned him loose again into the world, unprotected and unprovided for, leaving him to commit new crimes, and to undergo new punishments (which we see by the table he rarely failed to do), until, by gradual corruption, he was ultimately prepared for transportation or the gallows. Of the delinquents sentenced to only fourteen days' confinement for the first offence, seventy-five per cent., or three-fourths of the whole returned for new crimes; on the other hand, the training, discipline, and ameliorating effect of an imprisonment for two years, for the first offence, seems to have been so efficacious, that not one individual who had been subjected to it, returned again to the same prison as a criminal.

This proves that, looking to the ultimate welfare of the individuals themselves, as well as to the interests of society, there is far greater humanity in a sentence for a first offence, that shall *reform* the culprit, although the offence itself may be *small* and the confinement *long*, than in one for a few days only, proportioned solely to the amount of the crime.

Should these humane principles ever be adopted, the sentence of the criminal judge, on conviction of a crime, would simply be one finding that the prisoner had committed a certain offence, that he was not fit to be allowed to live at large in society, and therefore granting a warrant for his transmission to a penitentiary, to be there confined, instructed, and employed, until liberated in due course of law.

The process of liberation would then become one of the greatest importance. There should be official inspectors of penitentiaries, invested with some of the powers of a court, sitting at regular intervals, and proceeding according to fixed rules. They should be authorized to receive applications for liberation at all their sessions, and to grant the prayer of them, on being completely satisfied that such a thorough change has been effected on the mental condition of the prisoner, that he may be safely permitted to resume his place in society. Until this conviction be produced upon examination of his disposition, of his attainments in knowledge, of his acquired skill in some useful employment, of his habits of industry, and, in short, of his general qualifications to provide for his own support, to restrain his animal propensities from committing abuses, and to act the part of a useful citizen, he should be retained as an inmate of the prison. Perhaps some individuals, whose dispositions appeared favourable to reformation, might be liberated at an earlier period, on sufficient security, given under bond by responsible relatives or friends, for the discharge of the same duties towards them in private, which the officers of the penitentiary should discharge in public. That is to say, if a youth were to commit such an offence as would subject him, according to the present system of criminal legislation, to two or three months confinement in Bridewell, he might be handed over to individuals of undoubtedly good character and substance, under a bond that they should be answerable for his proper education, employment and reformation: and the fulfilment of this obligation should be very rigidly enforced. The principle of revenge being disavowed and abandoned, there could be no harm in following any mode of treatment, whether private or public, that would be adequate to the accomplishment of the other two objects of criminal legislation, the protection of society and the reformation of the offender. To prevent abuses of this practice, the public authorities should carefully ascertain

that the natural qualities of the offender admit of adequate improvement by private treatment; and, secondly, that private discipline shall be actually administered. If any offender liberated on bond should ever re-appear as a criminal, the penalty should be inexorably enforced, and the culprit should never again be liberated, except upon a verdict finding that his reformation had been completed by a proper term of training in a penitentiary."—Combe, Mor. Phil. p. 313.

The second class of minds, which are so much at the mercy of education, example, and other external influences, would in almost, if not quite, *every* case be materially improved, and in all probability might eventually be again trusted with their liberty; and those of the third class, though utterly depraved and incorrigible, would be kept like vicious lunatics, treated kindly, but preserved under such restraint, as would prevent their ever having an opportunity of again injuring society. That there is such a class, my last paper most decidedly proved; that this class is relatively small in number should be a matter of thankfulness with every one. They are, to all intents and purposes, *morally* idiotic, and justice as well as humanity dictates that they should be treated as moral patients. Let no one say that I am thus destroying their responsibility (for in the words of Mr. G. Combe), "Every one admits the non-responsibility of idiots and madmen, though mischievous; and both, when they infringe the criminal law, are treated as patients, and not as culprits. We merely extend this class of cases a little further, and the maxim is certainly just, that 'major aut minus non variat speciem.' If the objectors will inquire into facts, they will find irresistible evidence of the truth of what is here advanced regarding the mental condition of these persons. I repeat that their number is not large, and maintain that, if we act consistently, we must either include them among the insane, or include the vicious insane among criminals."

Those individuals, then, who afford no reasonable hope of being able to conduct themselves with propriety amid the ordinary temptations of life, should not be liberated nor turned loose upon society again, but be kindly, yet carefully, kept under proper restraint. Such cases as the following would then be prevented.

Catherine Zeigler was tried at Vienna for the murder of her illegitimate child; she confessed the act, and said she could not possibly help it; she was forced to do it; she could not any how resist the desire she felt to commit the murder.

The frankness of this confession, connected with favourable circumstances, and her good character., induced the tribunal to pass a merciful sentence; and on the ground of insanity (which she did not herself plead) she was acquitted, and at length set at liberty. But she told the court that if they let her escape they would be responsible for the next murder she committed, for that if she ever had a child again, she should certainly kill it. And so in fact she did. About ten months after her release from prison she gave birth to a child, which she soon murdered. Brought again to her trial, she repeated the old story, and added that she became pregnant merely for the sake of having a child to kill. It does not appear that she was brought before the same judges as before; most likely not. She was executed for this second murder.

All, indeed, who have once *attempted* murder should be confined for life; as the homicidal tendency might again show itself, and the interests of the criminal, as well as of society, would dictate the use of almost any means to prevent its frightful consequences.

And now having stated those views which should actuate society in their treatment of criminals, as well as the means by which those views might be practically carried out, I close the present paper by briefly glancing at two objections which are sometimes urged against those views which I have advocated.

First, it is stated by some that these opinions look very well in theory, but could not be reduced to practice; that, in fact, they are chimerical. This I do not believe. In America various improved systems of prison discipline have been practised. In the prisons of Auburn and Sing Sing, in the state of New York, and at Weathersfield, in the state of Connecticut, the system which has been adopted is that combining solitary confinement by night, hard labour by day, the strict observance of silence, and attention to moral and religious improvement. At sunrise the convicts proceed in regular order to the several workshops, where they remain under vigilant superintendence until the hour of breakfast, when they repair to the common hall. When at their meals, the prisoners are seated at tables in single rows, with their backs towards the centre, so that there can be no interchange of signs. From one end of the workrooms to the other, upwards of five hundred convicts may be seen without a single individual being observed to turn his head at a visitor. Not a whisper is heard throughout the apartments. At the close of day, labour is suspended, and the prisoners return in military order to their solitary cells; there they have the opportunity of reading the Scriptures, and of reflecting in silence upon their past lives. The chaplain occasionally visits the cells, instructing the ignorant, and administering the reproofs and consolations of religion. The influence of these visits is described as most beneficial; and the effect of the entire discipline is decidedly successful in the prevention of crime, both by the dread which the imprisonment inspires, and by the reformation of the offenders. Inquiries have been instituted relative to the conduct of the prisoners in Auburn penitentiary—the prison in which this system has been longest observed—and of 206 discharged, who have been watched over for the space of three years, 146 have been reclaimed, and maintained reputable characters in society.

This is obviously a great improvement upon British prisons, but still it is not perfect. Too little is done with the

view of calling forth the moral and intellectual faculties of the prisoners, and the terror of punishment seems to be too much relied on. If, however, thus much in the shape of improvement can be accomplished, why not accomplish more? The only remaining objection is that, according to these views, offenders would not be deterred by fear of punishment. But to those who urge this objection, I would again remark, that our present laws, sanguinary and vindictive though they be, have utterly and miserably failed to accomplish this. Murderers have not been terrified, though the gallows ever frown before them; nor have thieves been deterred from picking pockets by the treadmill or the prison. In proof of this, look at a case recorded in our own Wolverhampton paper for Sept. 27th. It is there stated that a fellow named Oliver, who has been sixty-five times in Windsor gaol, returned after an absence of two years to that place, last week, in trouble again. Before the magistrates, he accounted for his absence from Windsor by stating that he had been in Stafford gaol six months for shop-lifting; and in Worcester gaol, where he had been whipped in, and whipped out, after being incarcerated for twelve months for stealing two waistcoats. In fact, this incorrigible knave boasted that he "had seen the inside of every gaol in the kingdom," and that, as his curiosity had been gratified in England, he intended to go abroad. I need not add that, under the system suggested in this paper—viz., confinement after the first offence until reasonable ground is afforded that a reformation has been effected, such cases would be impossible.

"In the case of all ordinary physical maladies," Mr. Sampson observes, "we see the pain which is inflicted upon the patient, and to which he is obliged to submit, together with surgical operations, tedious confinement, or nauseous and restricted diet. And this pain—the price at which he purchases his cure, and thereby avoids more serious pain, which otherwise awaits him—being in accordance with the intentions of our Creator, is, I should presume, as likely to

be effective as any punishment could be, in deterring the patient himself, and the friends who witness it, from running any risk for the future of contracting a similar disorder. It will be observed, too, that the system to which the patient has to submit is precisely that which, under his individual circumstances, must be the most painful to him. For instance, if a man of sanguine temperament, to whom exercise is one of the chief delights of life, indulge the tendency beyond its legitimate bounds, and by some violent action ruptures an organ of motion or respiration, he has, in order to his cure, to submit to a long period of total restraint from exercise of any kind, which is the most painful infliction he can possibly endure. If another impair his digestive powers by over-indulgence in rich and stimulating food, he has to submit to the bitter restraint of the most simple diet. The same holds good in all cases; and in like manner it may be affirmed, that, in all cases of moral delinquency, pain would be more severely administered to the patient by the adoption of those measures, which would at the same time effect a cure, or at least insure a mitigation of his infirmity, than by any other method. This, however, would be a work of benevolence instead of revenge; for although all his desires flow in the direction of his offending propensities, in the gratification of which he has found his only source of pleasure, and in the suppression of these faculties, therefore, the greatest amount of pain is incurred, yet as the work of suppression goes on, and other faculties are called into play, new and higher sources of pleasure are awakened, and less pain is felt from the non-gratification of the erring desire; while at the same time, he is saved from the inevitable and accumulating consequences which would otherwise have arisen from fresh infringement of the Divine laws. It leads, therefore, to good alone,—good to society, with good to the sufferer; and the real good of both must always go hand in hand, since,—

'True self-love and social are the same.'

As a curious illustration of the fact, that the most severe pain which can be borne by an offender is that which is inflicted by benevolence in the first efforts to cure, I may cite the remark recently made by Mr. Wallace, one of the guardians of the poor of the Whitechapel Union, who stated in answer to some complaints respecting the workhouse discipline by a pauper—that the greatest possible punishment that could be inflicted upon those persons who were in the habit of living in filth and rags, was to take them into the workhouse and to compel them to clean themselves, and to keep themselves so."

Again, let us take the case of drunkenness. Would the several advocates for punishment wish to inflict upon a drunkard any more terrible pain than that which is involved in the first step towards a cure? The hand that in kindness withdraws the bottle from the infatuated drunkard, inflicts upon him the most excruciating sufferings.

Is there any greater pain to one who has long indulged the gratification of lust, than that which is administered in his case also, by the first step towards cure, viz., a separation from all intercourse with the objects of his desire? Would a miser feel anything so keenly as being deprived of the power of accumulation, and compelled to distribute his riches to the needy? And does not the same rule hold good with regard to all the faculties of the mind? The only way in which the most severe pain is inflicted is by preventing the indulgence of the easily besetting sin, and forcing into activity the higher and hitherto neglected faculties.

Let any man contemplate for a moment the possibility of his being placed in a situation where all the long-cherished and strongest tendencies of his mind are opposed, and where the only feelings that he is permitted to gratify are those, the exercise of which have, up to the present moment, been most distasteful to him. Let the religious man contemplate what his sensations would be, were he forcibly held in a situation where only the grossest impiety and blasphemy

were breathed around him, and amid which he should be compelled to exist without the power of expostulation or resistance. Let the benevolent man imagine himself compelled to watch day by day in some inquisitorial cell the infliction of torture upon helpless and unoffending fellow-beings. Let the mother, who has found all her delight in the presence of her children, contemplate what her feelings would be, if they were withdrawn for ever from her sight and knowledge. The pain which would be felt in these instances would, nevertheless, not exceed that which must be felt by those who are suddenly forced to abandon the gratification of long-loved vices, and submit to a discipline, of which cleanliness, industry, justice, subordination, and a consideration for the feelings of others, are the prominent features. Yet, in the latter case, the pain inflicted would only be subservient to kindness, it would be that which has been decreed by Heaven, and not revengefully administered by man.

I confess, therefore, that I cannot see the force of the objection, either that the views advocated in this paper could not be reduced to practice, or that men would have no fear of punishment to deter them.

It was my intention in conclusion to have shewn that under the system now proposed, the plea of insanity would not be productive of such anomalies and difficulties as under the present laws. This subject, however, I reserve for a future occasion, as we have already sufficient matter before us to elicit conversation, and the plea of insanity is in itself a sufficiently prolific topic to deserve consideration in another paper.*

18th *October*, 1843.

* Since the author compiled the foregoing remarks on Criminal Jurisprudence, happily, many of the views there advocated have been successfully carried out.

LECTURE XI.

ON THE PLEA OF INSANITY.

In my last paper, upon Criminal Jurisprudence, I closed with the observation, that "under the proposed system, the plea of insanity would not be productive of such anomalies aud difficulties, as under the existing laws."

This subject, however, was reserved for another occasion, which I embrace this evening. And in examining for a short time this difficult and intricate, though important subject, which has hitherto formed the "opprobrium legalium et medicorum," it may be well, in the first place, to examine what insanity really is, considered philosophically; secondly, what it is in the eyes of the law; and, thirdly, how would the present legal anomalies be removed, supposing the benevolent mode of treatment advocated in my last paper to be generally adopted?

And first, in attempting a philosophical definition of insanity, the subject is beset with difficulties arising from various sources. Sir W. Follett said, in Mc Naughten's case, "It is impossible to lay down beforehand any definition of madness that will excuse the crime of murder; the disease assumes such different forms, and such various shapes, and acts in such opposite ways, that you cannot

define it." Pope also seems to have appreciated these difficulties, when he exclaims—

> "Great wit to madness is so near allied
> That their partitions do their bounds divide;"

and Lord Lyndhurst was quite correct, when he affirmed, "that this is a most difficult and delicate subject; because all persons who have directed their attention to these inquiries, all persons who are best informed upon them, concur in stating that the subject of insanity is but imperfectly understood."

It is unnecessary here to dwell upon these difficulties in detail; doubtless that alluded to by Sir W. Follett, forms the chief cause of them, viz., that insanity is so Protean in its appearances,—the term is applied to such varied conditions of the mind (or rather, of its organs). Take, for instance, the opposite states of mania and dementia: any definition of the one condition which is scrupulously accurate, must necessarily be inaccurate when applied to the other. Another difficulty, which is now, however, vanishing before increased physiological knowledge,—has arisen from the fact that insanity has generally been considered a disease of the mind itself, the immaterialist having in many cases strangely held that, that which cannot die may nevertheless be sick; instead of being as it really is, a bodily disease, a disease of the brain, or some part of it, or its membranes, and like disease of the heart, lungs, or any other important organ, necessarily deranging its functions. There have not been wanting those—nay, some such still remain—who have looked upon the lunatic as forsaken of his God and the victim of Satanic malignity. Indeed, that learned divine, who in his zeal pronounced mesmeric agency as emanating from the same source, has expressed, in reference to insanity, the above-mentioned opinion. Well, indeed, may insanity be "little understood," when hot divines and would-be philosophers are in the habit of referring it to

causes, "themselves" so "little understood," as Satanic agency or the disease of a soul, of the very nature of which we know little or nothing; nay, of the condition of whose very existence, independently of its bodily organ, we can only form guesses and speculations.

Thanks, however, to advances in physiological science, the lunatic is no longer treated as the reprobate, and the subject is becoming better understood. But to proceed; we will now examine the opinions of several philosophers in reference to the nature of insanity.

Locke says that "madmen do not appear to have lost the faculty of reasoning, but having joined together some ideas very wrongly, they mistake them for truths; and they err as men do, who argue right from wrong principles." Now this is all very good as far as it goes; but it will at once be seen that it only applies to one section (and that a small one), of madmen, viz., those who are labouring under some illusion, some intellectual aberration; who mistake the phantoms conjured up by their crazed imaginations for realities, and act consistently with their deranged idea. But I have already said that this class is relatively small. In the great majority of cases (as we shall see in the sequel), there is no intellectual hallucination, no belief in the reality of a delusive idea; but the patient is impelled by the impetuosity of some powerful feeling or emotion to a particular and often frightful course of conduct, sometimes in opposition to, but always independently of, the convictions of the judgment.

This description of madmen, therefore, is of little avail.

Again, Locke goes on to observe, "herein lies the difference between idiots and madmen,—that madmen put wrong ideas together, and so make wrong propositions, but argue and reason right from them; while idiots, make very few or no propositions, and reason scarce at all." Now, that the complete idiot "reasons scarce at all," will be admitted by every one; but, as the raving maniac is quite as destitute of reason, the distinction falls to the ground.

Spurzheim thought that insanity consisted "in an aberration of any sensation or intellectual power from the healthy state, without being able to distinguish it; or without the influence of the will on the action of the feelings:"—in other words, the incapacity of distinguishing the diseased functions of the mind, and the irresistibility of our actions, constitute insanity.

To this definition, though closely approximating to the truth, there is the same objection as to Locke's, viz., that it excludes all cases of irresistibility of action, unaccompanied by delusion; cases where men are mad, and know it; where they lament, but cannot resist, murder without a motive, and throw the odium on the devil within. Wright, of this town, was a madman of this class; he drowned his only child, though he was strongly attached to it, and could assign no motive beyond the uncontrollable impulse; he was consequently confined, but no delusion being detected, he was set free. In one short year he placed his wife upon the fire, and hung himself.—Rumball, p. 7.

Dr. Conolly defines insanity to be "an impairment of one or more faculties of the mind, accompanied by, or inducing, a defect in the comparing faculty." Now, to this definition, vague as it is, there is one fundamental objection—viz., that it assumes the comparing faculty to be impaired in every insane person, which we know not to be the case. The madman can compare object with object, and idea with idea, as well as other individuals, or as he himself could do prior to the insanity supervening; if, in the case of monomania, or insanity with hallucination, we except the peculiar topic on which that hallucination exists. Take, for instance, the religious maniac; steer clear of the subject of his derangement, and you will find his answers rational, and his ability to compare uninjured. This, of course, should not be the case, if the comparing faculty itself were (as Dr. Conolly's definition assumes) invariably impaired.

Moreover, as Mr. Rumball shrewdly remarks, "impair-

ment is not excitement, and insanity is always excitement; therefore Dr. Conolly fails to define it."

Dr. Andrew Combe thinks it absurd "to attempt to frame" one definition, inclusive of all the organic causes of insanity, though he admits that definitions are constantly sought after in civil and criminal cases by lawyers and judges; but believes it to be "beyond the power of man to invent the brief description which shall describe the various cerebral affections whence insanity originates."

Mr. Sampson, in his work on "Criminal Jurisprudence," considers obedience to the laws the only test of sanity; and Dr. Davy (the late able coadjutor of Dr. Conolly at Hanwell, and now appointed by government to the new asylum at Ceylon) agrees with Mr. Sampson in his definition. To this definition I can see no very potent objection; for if the ability to conform to the laws of social life be possessed, those laws being expressive of the average civilisation and morality of the day, obedience to them implies an average amount of control over those passions and propensities, which, when unduly excited, lead to an infringement of those laws. On this principle, then, crime of every kind, whether accompanied by hallucination or not, is indicative of insanity, inasmuch as it shows that the criminal is unable to conform to those laws, the obedience to which constitutes the sole test of sanity; and, on the plan advocated in my former paper, he is therefore responsible to society to undergo that amount of confinement and restraint which is necessary to effect his cure, or, if incurable, to protect society from any further annoyance. Perhaps, if there be any valid objection to this view of insanity, it is that the definition is too wide and general, and that it makes no distinction between the lunatic, who is the victim of cerebral disease, and the criminal, whose brain is in a healthy condition, but of a low and depraved standard of formation. This objection, however, would not be of much practical importance, as I shall show in the sequel, if the new views were

carried out: inasmuch as from whatever source the crime arose, whether from temporary excitement or permanent indulgence in vice, from cerebral disease or congenital malformation, the criminal would be treated alike; viz., kindly, but compelled to submit to confinement and other curative means.

The only other definition which I would here examine (and, if not perfect, perhaps the best that has been given) is Mr. Rumball's, that "Insanity is the excitement of any of the mental faculties beyond the control of the remainder." According to this view of the subject any faculty, whether animal, moral, or intellectual, may become thus unduly active from diseased excitement of its peculiar organ, and monomania is then the result. If the morbid excitement extend to a group of organs or faculties, then the insanity partakes more or less of a general character. Assuming, then, that this definition be correct (and I think it will be difficult to prove its erroneousness), it would follow that it is not necessary for incoherence or intellectual aberration to be present in order to constitute insanity; this, every one acquainted with the insane, knows to be the case, although our legislators appear to be lamentably ignorant of the fact. If the intellectual region, or any part of it, be deranged, then the mind may be led to dwell morbidly on a particular idea, or class of ideas, to such an extent, as to constitute monomania, while the moral feelings and animal passions may not be unduly excited. Or if it be a moral organ, or group of organs, that is effected, such as Veneration, Hope, and Wonder, the mania may partake of a religious nature. With Cautiousness, hypochondriasis or undue timidity may be the leading feature. Or, with Self Esteem, pride, the assumption of consequence, and a desire for the homage paid to kings, &c., while the passions may still be in abeyance, and the intellect retaining its integrity on every subject, save that which constitutes the chief feature of the delusion. When, however, the cracked string is

touched, the intellect no longer sheds its usually steady light, but, being directed into a diseased channel (like a lamp shining through a coloured glass), it becomes tinged by the medium through which it is transmitted. Or, again, should the diseased excitement be confined to the passions or propensities, those distressing cases which I have already alluded to may occur, in which fits of uncontrollable violence, homicide, suicide, infanticide, incendiarism, take place; the moral powers, perhaps uninjured, loudly telling that this is wrong; intellect, unimpaired, emphatically condemning the whole procedure, but neither of them being sufficient to stem the maniacal excitement, which, like a resistless torrent sweeps over every obstacle, and paralyzes every moral power. Let it not be said that I am taxing imagination, and drawing too vivid a picture of this class of cases; they are almost of every day occurrence, and when considering the opinions of the judges, I shall present you with one or two examples. The editor of the "Phrenological Journal" observes that, "not many weeks ago, a highly respectable and talented individual, engaged in active business, mentioned that he was tormented by a desire, when shaving, to draw the razor across his own throat and terminate his life. In his case no external misfortune nor moral cause existed to produce this desire; but, from excessive mental labour, his brain was excited beyond the point of health, and this desire was the consequence of that excitement involving certain organs. He understood the cause, used the means of cure, and recovered. We are pretty confident," he continues, "that of those who read these remarks, more than one will be conscious of having at one time or another experienced similar impulses rushing with alarming and involuntary vivacity into their minds. Other persons will probably be conscious of having experienced painful, perhaps even malignant feelings, which they could not expel from their minds, although they were able to suppress the outward manifestation of them. All, then, that

is wanting in such cases to bring about a fatal result, is the increase of action in the diseased, or a diminution of power in the restraining, organs. When this takes place the diseased impulse may in a moment obtain the mastery; in a few seconds more it may expend itself in actions; and after the paroxysm has passed the restraining power may regain the ascendancy, and the individual may know and deeply regret the nature of his conduct."—p. 184.

Besides the cases already described, in which the excitement appears to be confined to any of the three—the moral, intellectual, or animal regions alone, there may of course be other cases of partial mania of a more complex type, in which some of the powers of two, or all three of the groups, may be concerned. This, for instance, was the case with McNaughten, who was affected by a delusion, viz., that the Tories were persecuting him; which by a morbid excitement of passion led him to make a desperate attempt at revenge upon his persecutors.

The definition of insanity here adopted will, when reversed, apply with equal force to idiocy also, the one being the converse of the other. A man may be (from congenital formation or disease) an idiot morally, an idiot intellectually, or an idiot totally; or he may be an idiot in reference to some peculiar power or faculty, while the rest may not only be of average, but even colossal dimensions.

Dr. Dalton, the eminent chemist, was an idiot as far as the perception of colours was concerned; he was also weak and shallow in regard to language, but a giant in judgment and reflection. McInnes was an idiot morally; she could not be made to understand right and wrong, though she was not intellectually. Lowe, the Manchester idiot, was an idiot totally. McNaughten and McInnes were,—the former a partial lunatic, the latter a partial idiot having never possessed a controlling power: while the former, though he once had it, yet lost it, from uncontrollable or diseased excitement overpowering it. The life of the former was fortunately

spared, the latter unhappily perished. With a view of being as precise as possible, I have pointed out the difference between idiocy and insanity, though for all practical purposes it is unnecessary; for since the monomaniac or lunatic has lost, and the moral or general idiot never had, a due amount of self-control, when coming within the reach of our criminal law both should be placed in the same category as entitled to the same treatment.

Before passing to the next part of my subject, I would just observe that though in this paper I have made frequent use of Phrenological terms, yet the acceptance of the definition of insanity here adopted by no means pledges any one to the reception of the science; for a close approximation to this definition has been made by Dr. Thorburn and others, though I believe that Rumball has the merit of having stated it more concisely than any of them.

I may add, further, that the term "moral insanity," or insanity of feeling without derangement of intellect, is not a new and unheard-of term invented by Phrenologists, but has been described by Pinel, under the name "outbreak of furious madness without delusion:"—by Pritchard and Esquirol (both anti-phrenologists), as well as Georget, Marc, Woodward, and a host of others. Indeed it has been recognized by all who have pretended to investigate the subject,—save that concentration of England's wisdom, our legislators, and those (who of all others ought to have been aware of it) viz., those who carry out the laws and preside in our judicial courts.

Having examined then the various definitions of insanity, we next proceed to inquire how the subject is regarded in the eyes of the law. And at the outset, though I would not be guilty of anything like disrespect to our lawyers and judges, I cannot help protesting against the fact that men who are ignorant of the healthy functions of the brain should be left to decide on its unhealthy manifestations; that while the deranged action of any other part of the body

even in the humblest pauper, is by the State submitted to the care of a practitioner qualified by anatomical and physiological knowledge to undertake the case,—disease of the brain and its membranes is left to be decided upon by men who, however unquestionable their attainments may be in their own peculiar province, are mere empirics in this; and the lives of lunatics and idiots are sacrificed without remorse to their blindness and our country's disgrace. In the smart and somewhat severe language of the Zoist, "What a thorough disgrace it is to the civilization of the present day, that lawyers should be heard in our courts of justice raking up musty precedents, and quoting as authorities the opinions of men who lived two centuries ago, and knew no more of the nature of insanity than they did of electricity, magnetism, or the polarization of light."

These venerable judges are not, however, to be blamed; they were men learned in their day,—men who never perpetrated the absurdity of allowing their own judgment to be fettered by the opinions of predecessors, possessing less means of coming to a sound conclusion than themselves. Such indications of wisdom were reserved for the Britons of the nineteenth century,—a race prolific in discoveries in physical science, but trammelled and bound to earth by the chains of opinion, and lamentably wanting in that stern independence and strong common sense which characterized so many of their ancestors.—vol. i, 399.

But to proceed. What is insanity in the eyes of the law? Prior to Lord Hale's time, it would appear that only two forms of mental unsoundness, viz., idiotism and general insanity were recognized by the law. To that great and good man we are indebted for the legal recognition of monomania or partial insanity. He, however, had fallen into the general error that it is intellect alone which governs men's passions, apparently forgetting that however sound the intellect, it will be an ineffectual barrier against crime, unless the affections and moral powers are also exercising their

proper authority. It is amusing, too, to see into what an absurdity this error led him, for, after stating truly the difficulty of assigning definite limits to sanity, he gravely tells us, that amenability to the law consists in the possession of "as much understanding as ordinarily a child of fourteen years hath." His lordship, however, does not say by what weighing, gauging, or measuring process, he would ascertain the modicum of understanding possessed; nor does he inform us what he would consider the average or normal manifestations of a child of fourteen years of age.

It would be waste of time to notice the various interpretations of the law of insanity, given between Lord Hale's time and the present:—that law remaining substantially the same. The law, as it now exists, was thus laid down by Sir W. Follett, in his address to the jury in the recent trial of McNaughten:—"The whole question will turn upon this; if you believe the prisoner at the bar at the time he committed the act, was not a responsible agent; if you believe that when he fired the pistol, he was incapable of distinguishing between right and wrong; if you believe that he was under the influence and control of some disease of the mind, which prevented him from being conscious that he was committing a crime; if you believe that he did not know he was violating the law, both of God and man, then undoubtedly he is entitled to your acquittal; but it is my duty to tell you that nothing short of that excuse, can excuse him upon the principle of the English law. To excuse him, it will not be sufficient that he laboured under partial insanity at the time,—that he had a morbid disposition of the mind which would not exist in a sane person. That is not enough, if he had that degree of intellect to enable him to know and distinguish right from wrong; if he knew what would be the effects of his crime, and consciously committed it, and if, with that consciousness, he wilfully committed it." The judges also, in their answers to the queries proposed to them by the Lord Chancellor, give the

same explanation of the state of the law. In their answers to the second query, which refers to the proper questions to be submitted to the jury concerning the criminal responsibility of the monomaniac, are these words: "That before a plea of insanity should be allowed, undoubted evidence ought to be adduced that the diseased was of diseased mind, and that at the time he committed the act, he was not conscious of right and wrong;" and that "every person was supposed to know what the law was, and therefore nothing could justify a wrong act, except it was clearly proved that the party did not know right from wrong." It appears, then, that whatever common sense, philosophy, or observation, may pronounce insanity to consist in, it is not such in the eyes of the English law, unless the lunatic has lost the capability of distinguishing right from wrong. What, however, says Dr. Davey, who, from having the superintendence of 990 lunatics for some years may be presumed to be a competent authority? He says, "If consciousness be the test of insanity, I am at a loss to comprehend the cases of by very far the greater number of the patients in the Hanwell asylum. And if the English law, as it is at present constituted, excuses only that man from the consequences of a criminal act, who cannot distinguish between right and wrong, or who does not know what he is about, then do we say, the sooner it is altered the better. If," he continues, "as Sir W. Follett has assured us, the law does not hold that man irresponsible, who labours under partial insanity, who has a morbid disposition of mind which does not exist in a sane person, then does insanity under no circumstances excuse the commission of crime; for this very reason, that no insane person has every mental faculty diseased. I believe there is not one in the walls of Hanwell, even including the idiotic and fatuous, who does not retain some few powers of the mind, relating either to the intellectual, moral, or animal compartments." In another essay, he adds emphatically, "No one who has been, or is, engaged in the manage-

ment of the insane, from the physician to the humblest menial in a lunatic hospital, can reflect on so much ignorance and injustice as that manifested in the opinions of the judges, and not feel in the highest degree indignant. All those among the insane, who *can* commit a crime, who have physical energy left them to employ the necessary means, know right from wrong, as well as I do; and are no less conscious of everything about them. Insanity does not, as is usually supposed, necessarily imply an aberration of the intellectual powers. On the other hand, sometimes in the most distressing cases of violent madness, both the perceptive and reflective powers are usually active. This, indeed, is generally the case in the acute forms of the disease, and in those cases most prone to the commission of acts of violence, to which, of course, all legislative interference must apply. How absurd, then, it must be to speak of such patients as if they were ignorant and unconscious!" "Those who are really, in the language of 'The Times,' wholly disabled by mental disease, or incapacity, from discovering between right and wrong, are not usually in a condition to commit a criminal act, any more than an inanimate body. Their condition is one of pure vegetation. Even idiots do not invariably come under such a definition."

But one or two cases will best illustrate the injustice and impropriety of the legal view of insanity. Pinel mentions the case of a patient, who, during periodical attacks of insanity, "was seized with an uncontrollable fury, which inspired him with an irresistible propensity to seize an instrument or offensive weapon, and to knock on the head the first person who presented himself to his view. He experienced a sort of internal combat between this ferocious impulse to destroy, and the profound horror which arose in his mind at the very idea of such a crime. There was no mark of wandering of memory, imagination, or judgment. He avowed to me," continues Pinel, "during his strictest seclusion, that his propensity to commit murder was abso-

lutely forced and involuntary, and that his wife, whom he tenderly loved, had nearly become his victim—he having scarcely had time to bid her flee to avoid his fury. All his lucid intervals were marked by melancholy reflections and expressions of remorse, and so great did his disgust of life become, that he had several times attempted suicide to bring it to a close. 'What reason have I,' said he, 'to cut the throat of the superintendent of the hospital, who treats us with so much kindness? and yet in my moments of fury I am tempted to rush upon him, as well as others, and plunge a dagger in his bosom. It is this unhappy irresistible propensity which reduces me to despair, and makes me attempt my own life.'"—Combe, p. 227.

Dr. Gall has observed four instances of females, who, when pregnant, were afflicted with a vehement desire to steal, though quite free from any such disposition at other times. Dr. Hawkins mentions a case of "homicidal propensity" in a young woman, whose life was rendered in the greatest degree miserable by the strange propensity to murder her offspring, of whom she was passionately fond, and which completely subsided on an attack of small-pox. Unhappily, the dreadful temptation returned with all its horrors; on its decline she however ultimately got well. Dr. Hawkins adds, "it is worthy of remark, that during the most distressing periods of the disease, she is perfectly aware of the atrocity of the act to which she is so powerfully impelled, and prays fervently to be enabled to withstand so great a temptation." This case furnishes an instance of the cure of disease located in the organs of Destructiveness, by the occurrence of one in another part, viz., the skin.

Dr. Pritchard quotes the following from Gall: "A young girl of quiet and inoffensive disposition, and whose character has hitherto been exemplary, made seven different attempts to burn houses in a village near Cologne. When interrogated as to the motives which prompted her to act so wickedly, she burst into tears, confessing that at stated periods she felt her

reason forsake her, and that then she was irresistibly compelled to the commission of the deed, of which, when done she bitterly repented. She was tried by a humane jury who acquitted her of all criminal intentions." Not to multiply cases of this kind, I will quote one other, given by Dr. Davey, in his excellent Medico-legal Reflections on the trial of McNaughten, on the authority of his own observation. He says, "Only a few days since we were consulted respecting a young married woman, the subject of a sudden and violent attack of homicidal mania. She had eaten her dinner as usual, in the company of her husband and family. They had had no kind of dispute. The husband had hardly returned to his employment, ere he was alarmed by the sudden appearance of his wife. She ran towards him in the most frantic manner, beseeching him to take care of her child, or she must kill it. She carried it in her arms to him, and besought him to save its life. We saw her within a short time of this occurrence. The intensity of the paroxysm happily abated after a few hours, on the employment of suitable medical and moral means; and at this time she is occupied only, with the contemplation of the awful deed which had threatened her. Finding that her moral liberty, her responsibility, was fast leaving her, she ran to her husband for protection. Had she not found him, the consequences would probably have been most serious. Breathes there the man who would have held her criminal? We fear many."

Now had any of these cases ended fatally, which but for fortuitous circumstances, they must have done, each of these unfortunate persons would have been branded with the odium of a wilful murderer; and according to our present sanguinary laws, their lives must have been sacrificed. I may as well remark here, that the cases quoted are a mere sample of hundreds which might have been adduced, many of which were accompanied by fatal results, like that of Wright of this town. I need not however add more to show that our legislators have certainly forgotten entirely, that diseased

feelings constitute insanity, as decidedly as diseased intellect, and that though some madmen commit insane acts from erroneous perceptions, the great majority of these acts arise from diseased, but uncontrollable impulses, unaccompanied by any intellectual aberration. This indeed is what the Phrenologist would *à priori* expect from the fact that the cerebral mass devoted to the intellect is of less dimensions than that which ministers to our animal and moral emotions, and therefore less likely to put on diseased action.

We see, then, that our legislators, in regarding consciousness of right and wrong as the true test of sanity, have manifested either great ignorance of the subject, or great injustice towards an unfortunate class of our fellow-creatures; and that if their views be correct, three-fourths of the inmates of Hanwell, Bethlem, and St. Luke's, are unjustly confined, and could recover damages for false imprisonment.

Again, on the subject of "delusion" or "illusion," which our legal authorities seem to deem requisite to constitute insanity, we learn from Sir W. Follett, that in the course of the trial of Hatfield for firing at George the Third, Lord Erskine said that "the prisoner must be shown to labour under some delusion; and it must also be shown that he committed the act in consequence of that delusion." The present judges also expressed the same opinion, with the single exception of Mr. Justice Maule. The first question proposed to them ran thus: "What is the law respecting alleged crimes committed by persons afflicted with insane delusion, in respect of one or more particular subjects or persons; as, for instance, when at the time of the commission of the alleged crime, the accused knew he was acting contrary to law, but did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury; or of producing some supposed public benefit?" To which the annexed reply is

given: "That notwithstanding the party committed a wrong act, when labouring under the idea of redressing a supposed grievance or injury, or under the impression of obtaining some public or private benefit, he was liable to punishment."

It would appear from this, that to constitute insanity, there must be first, a delusion or illusion: secondly, this delusion or illusion must be shown to have existed at the time of the commission of the crime; and thirdly, the crime must be shown to stand to the delusion in the position of effect and cause. Now the few cases brought forward under the last head, as showing the impropriety of making consciousness of right and wrong the test of sanity, tell with equal force here also; since they show that insanity, may frequently exist, and that, too, of the most distressing kind, and leading to the most fearful acts, not only without those acts being referable to any delusion, but when no delusion whatever existed; nay, the intellect offering its useless remonstrance during the very perpetration of the deeds. Dr. Davey, moreover, expresses his deliberate opinion that the so-called delusions of the insane, never affect their judgment, because they are, he is convinced, never believed by them, but only aid the patient, as it were, in the expression of his abnormal feelings. In the words of Lord Erskine, "Reason is not driven from her seat, but distraction sits down upon it along with her, and holds her trembling upon it, and frightens her from her propriety." "Such patients are victims to delusions of the most alarming character, which so overpower the faculties, and usurp so firmly the place of reason, as not to be dislodged and shaken by the organs of perception and sense."—Zoist, vol. i. p. 257.

Dr. Davey continues, "There are in the Hanwell Asylum kings, queens, bishops, apostles, deities, &c. almost innumerable, and we have taken considerable pains to learn the real state of mind in these patients; and our decided opinion is, that their several assumed personifications must be re-

garded only as a morbid colouring to their several deranged moral feelings; as a voluntary and tangible ideal of their innate, involuntary, and morbid impressions. We have never seen but one case of the kind, in which it has appeared to us that the patient had the slightest belief in her 'illusion.' We have at this moment a highly interesting patient under our care, who is labouring under what is called dæmonomania, and which very strongly confirms the view we have taken of the matter.

"A female patient afflicted with 'moral insanity,' sometimes presumes to fancy herself the queen, when she may be seen taking considerable pains to mark her apparel 'V. R., Buckingham Palace.' After the completion of her work, she will not unfrequently express surprise at her stupid behaviour. Many parallel cases are to be seen at Hanwell.

"From the answers of the judges, as well as from the general tone of the public press in reference to McNaugthen, it appears to be commonly expressed that if a man be deranged, he must necessarily be fatuous also. Mr. Wakley, for instance (from whom we should have expected better things), remarked at the inquest on Mr. Drummond, on the design evinced by McNaughten in the perpetration of the deed, as indicating sanity. 'He did not,' said Mr. Wakley, 'in the use of his pistol, put in saw-dust instead of powder, or the ball first and the powder after; neither did he shoot his victim in the foot, hands, or hat, but in a vital part.' Mr. Wakley, surely, ought to have known that insanity is not fatuity; and no man, unless demented, would have acted as Mr. Wakley describes. Indeed, all who are acquainted with the insane, testify to the coolness, cunning, and design with which their maddest freaks are usually accomplished. Ray says 'what must be thought of the attainments of those learned authorities in the study of madness, who see in the power of systematic design a disproof of the existence of insanity; when from the humblest menial in the service

of a lunatic asylum, they might have heard of the ingenuity of contrivance and adroitness of execution that usually characterises the plans of the insane?' "

But according to the opinions of the judges, Mc Naughten ought to have been hanged; for though it was proved that he was afflicted with a delusion, yet that does not, in their estimation, absolve from guilt. Now what do these learned personages really think an insane delusion indicates? They speak of the delusion being the cause of the crime, but what is the cause of the delusion? The delusion is not the disease, any more than a cough is inflammation of the lungs; but the delusion is a symptom of diseased action within, as a cough is a symptom of diseased action in the lungs. Yet there is this difference between the two cases, viz., that while the stethoscope may afford some indication as to the extent of the impairment of the lungs, we have no encephaloscope to afford the slightest information as to the extent of derangement of the brain. An illusion, therefore, when it exists, is a mere symptom of cerebral derangement, the extent of which we cannot tell, but which ought to subject its victim to restraint and other medical and moral curative means. Dr. Davey says on this subject, "Persons are in the habit of supposing that individuals presumed to be so afflicted, are only in the slightest degree insane. Nothing can be more absurd."

Instead of the variety of mental derangement so denominated being invariably partial or limited to one or two things, constituting illusion or hallucination; it is found on a proper investigation that the monomaniac, as he is wrongly designated, is as generally unsound, mentally speaking, as he well can be.

A few days since, a male patient was admitted into the Hanwell Asylum of whom the press had spoken as a monomaniac, the same who was found within the precincts of Buckingham Palace. This man's derangement partakes of the character of general mania. It is true, he is not without his delusions, but in him they constitute only a prominent

symptom,—a mere feature of the general moral perversion of his nature; which in point of fact constitutes the disease under which he labours. Now if this man had unhappily committed any great crime, it would have been given out that he was afflicted with only a partial insanity, and hence his responsibility would have been unjustly inferred. Dr. Pritchard (no Phrenologist) speaks in the same strain, and says "Nothing can be more remote from the truth than the opinion that madmen of this description have their whole disorder centered in, and restricted to, one delusive idea." One illusive notion, or set of notions, is to be traced in his mind, which for the most part occupies his attention to the exclusion of almost all other subjects, and is ever uppermost in his thoughts: but a careful inquiry will generally show that his whole mind is diseased. "There are, indeed, cases on record which answer to the psychological definition of monomania; but if these examples are faithfully recorded, they must be regarded as extremely rare phenomena." Dr. Pritchard says further, when speaking of moral insanity as generally made evident by a change in the habits of life and temper,—a prostration of the natural feelings and affections, a loss of the sense of moral rectitude, and a complete deprivation of self-control: "I have met, with many instances of this description of insanity, not among those who have fortunately been treated as insane, but among such as, remaining at large, have gone on from one misfortune to another, till they have been beggared in estate and reputation, and sunk at length into a loathsome jail or wretched workhouse." And Dr. Davey adds, "others we have known most brutally sacrificed by the laws of this country: among whom are both Cooper and Blakesley of recent date. Had it so happened that the disease of the brain or membranes, from which they both suffered, in addition to the other symptoms which marked its existence, had been farther indicated by illusion or hallucination, the lives of these men would have been spared."

Before leaving this question, I would just remark moreover on the inconsistency which exists between the practice in our Courts "de Lunatico Inquirendo" and our Criminal Courts. Lord Lyndhurst mentions the case of a person who prosecuted his brother for having confined him in a lunatic asylum, who was placed in the witness-box and cross-examined by Lord Erskine. He gave evidence clear, distinct, and rational. During nearly an hour he foiled all Lord Erskine's endeavours to prove him insane. The answers were perfectly rational, there was not the slightest appearance of any mental alienation. A gentleman who had been accidentally detained, came into court, and whispered to Lord Erskine that the man believed himself to be the Saviour of Mankind. The moment Lord Erskine had that hint, he made a low bow to the witness, addressed him in terms of great reverence, respectfully begged to apologise for the unceremonious manner in which he had treated a person of his sacred character, and called him by the name of Christ. The man immediately said, "Thou hast spoken truly, I am the Christ." This answer led the jury to find for the defendant; in other words to find that the plaintiff was really insane. Here then was a man who during nearly an hour was able to cope, in intellectual acuteness, with one of the oldest counsel at the English bar, without betraying insanity. Surely his intellect was not deranged; the facts show that he was diseased in Self-esteem; which feeling was so deeply affected, that the intellect, though not itself deranged, was incapable of detecting its morbid condition. Let us suppose then, that the cerebral disease, instead of attacking Self-esteem, had affected Destructiveness; the patient might then have been at the bar of a Criminal Court, the victim of an insane impulse to destroy, producing on his speech and actions effects, perfectly analogous to those in the case before us. In this instance as long as no circumstance occurred to call into action the diseased organ of Self-esteem, the man appeared to be sane; but the mo-

ment it was stimulated by reverential language and postures, the insanity became manifest; and the single announcement that he was The Christ, outweighed, as evidence of insanity, the whole proof of sanity furnished by an hour's cross-examination successfully sustained.

Is it so inconceivable, then, that the intellect of a patient may be tolerably sound on most subjects, and that yet when some sudden impulse operates on his diseased organs of Destructiveness, an instantaneous act of violence may ensue? And why should the nature and circumstances of the destructive act be excluded as an item of proof of insanity, when the mere announcement that "I am the Christ," was held in the other case to afford of itself, demonstrative evidence of lunacy?

When a man kills another from the mere impulse to destroy, and with no rational view to any ulterior end, his act of killing is a manifestation of the diseased condition of his Destructiveness, as striking as the announcement of another, that he is the Saviour of Mankind, is evidence of the morbid state of his Self-esteem.

Our laws, however, make this difference; in the one case the individual is confined as a lunatic, in the other he is hanged as a criminal.

There is one other point in the opinions of the judges which I am desirous of noticing; and which, as it has been in some degree anticipated, shall occupy but very little more of your time. From the answer given to the second query which has been already brought before you, it appears, that if an individual subject to attacks of insanity, commit a crime during a lucid interval, he must be held responsible for the same, and is therefore liable to punishment.

In reference to this matter Dr. Davey does not hesitate to say, that should the intended parliamentary enquiry into the law of insanity confirm the judges in their opinion, it will be a disgrace to the legislature of the country. He goes on to say that in Hanwell the patients are generally

pretty comfortable, but are quite unadapted to an existence without its walls. If removed from its discipline, and no longer subject to the kind and considerate dictation of those having the care of them, they are exposed to the doubts and anxieties of life, its disappointments and irritations, they immediately become as insane as ever. Such are sometimes discharged on trial, but the organic disease of the brain persisting, they have no sooner become exposed to any of the ordinary causes of mental derangement, than it becomes necessary that they should be re-admitted. Like concealed and smothered fire, waiting only the ingress of the atmosphere to give it life, the physical condition of the brain is such, that it can no more resist the consequences of even a temporary and slight irritation, than can the smouldering fire the contact of oxygen. Surely this should be considered in estimating the responsibility of that man, who may happen to be charged with an offence committed during a lucid interval of insanity. Drs. Combe, Haslem, Pritchard, and Mayo, all express the same opinions, as also does Ray, the eminent medical jurist, who thus writes: "It has been accounted that with certain reservations, the civil responsibilities of the insane are unimpaired during the lucid interval; because the mind is sufficiently restored to enable the individual to act with tolerable discretion in his civil relations. In respect to crime, however, the matter is altogether different, for the following reasons, viz., that the crimes which are alleged to have been committed in a lucid interval, are generally the result of the momentary excitement produced by sudden provocations; that these provocations put an end to the temporary cure, by immediately reproducing that pathological condition of the brain, called irritation; and that this irritation is the essential cause of mental derangement which absolves from all the legal consequences of crime. The conclusion is, therefore, that we ought never, perhaps, to convict for a crime committed during the lucid interval; because there is every probability

that the individual was under the influence of that cerebral irritation which makes a man insane. Burdened as the criminal law is with false principles on the subject of insanity, the time has gone by, when juries will return a verdict of guilty against one who is admitted to have been insane, within a short period of time before the criminal act with which he is charged."

To these remarks it is unnecessary for me to add anything of my own, further than that, in cases of insanity without aberration, insanity arising solely from diseased feelings, (and the great majority of criminal cases are of this description,) to talk about a crime committed in "a lucid interval" is nonsense; for if there be no adequate motive for the perpetration of the crime, this is in itself evidence of the morbid state of feeling at the time, and therefore proves that in reality it could not have been committed during "a lucid interval."

Moreover, when an individual has once been attacked by insanity, this indicates the unhealthy condition of his brain; and though a temporary quiescence may be obtained, a relapse is always to be dreaded. Who indeed is that individual, or who those twelve men, that while reason and morality appear temporarily to preside, can, like clairvoyants, enter into the recesses of his irritable and distracted soul,—can read the agonizing thoughts, or trace out the morbid feelings that, like smothered volcanoes, may be racking him within,—and then on a sudden paroxysm of fury, can upon oath declare, that he enjoyed "a lucid interval" at the time, and must therefore perish ignominiously for his crime?

I think, then, in the course of these remarks, we have seen that our legislators are extremely unphilosophical, nay, that they are acting in opposition to all competent authorities on the subject, as well as to every day observation among lunatics, in making the sense of right and wrong the test of sanity,—in refusing to admit the plea of insanity, unless "insane delusion" have deprived of everything like

intellect or consciousness,—in looking upon these illusions as causes rather than mere effects, or symptoms of the disease,—and in expecting a brain enfeebled or impaired by paroxysmal attacks of insanity to be capable, during what they call "a lucid interval" (but what in reality is nothing of the kind), of manifesting the same control as healthy brains which have never been similarly affected.

At the commencement of this paper, I spoke of the anomalies and inconsistencies, resulting from the present condition of the law in reference to insanity. Even assuming that the test, viz., delusion accompanied by want of consciousness of right and wrong, is a correct one; we cannot fail to have contradictory verdicts given by different juries upon similar evidence, on account of the impossibility of any persons drawing the precise line between sanity and insanity in another individual; or being able to enter thoroughly into the state of the criminal's mind, so as to ascertain the exact amount of consciousness possessed. And what are the consequences of these contradictory verdicts? Either non-accountable persons, lunatics and idiots, are murdered according to law; or else dangerous and blood-thirsty assassins are permitted to escape. One of these results is inevitable. McNaughten was acquitted by a jury of his country; but according to the judges, he was responsible for his conduct, and ought to have been hanged.

Bowler, a miserable epileptic, whom a commission of lunacy had actually pronounced insane, a short time prior to his committing the crime for which he was tried, viz., shooting at William Burrows with intent to kill, was found guilty before Sir Simon Le Blanc in 1813, and sacrificed accordingly. Mr. Baron Alderson, on the recent trial of Oxford, remarked: "Bowler, I believe, was executed, and very barbarous it was." Now it is next to certain that if Bowler had been tried before McNaughten's jury, he would have been acquitted on the ground of insanity; so in all

probability would Bellingham, for the murder of Mr. Spencer Perceval. Here, then, we see, either that Mr. Drummond's manès have been unappeased, and justice has been shockingly thwarted in the person of McNaughten; or else Bowler was cruelly sacrificed to our inhuman laws, and to the ignorance of his judge and jury. Again, see the case of Catherine Zeigler, mentioned in the previous paper, as affording an excellent illustration of these inconsistencies. For here also, either in her release after the first trial, an atrocious murderer was improperly acquitted; or at last a miserable lunatic was improperly executed.

And not only in these intricate cases of lunacy do we perceive the difficulties and anomalies in the present practice of the law; they are as great, if not greater still, in respect to that miserably depraved class of persons (often the inmates of our gaols in whom the superior and restraining organs are so defective, as to render the term "moral idiots" appropriate; a class alluded to at the commencement of this paper. I shall only give one illustration of this.

"In visiting the Richmond Lunatic Asylum at Dublin, in 1829, a man was presented to Mr. Combe by Dr. Crawford, the physician, concerning whom Mr. Combe made the following remarks:—'This is the worst head I ever saw: the combination is worse than Hare's. Combativeness and Destructiveness are fearfully large, and the moral organs altogether very deficient. Benevolence is the best of them; but it is miserably small, compared with the size of Combativeness and Destructiveness. I am surprised that man was not executed before he became insane." Previous to this interview Dr. Crawford had written the following observations: "E. S., aged thirty-four. Ten years since first admission. Total want of moral feeling and principle; great depravity of character, leading to the indulgence of

every vice, and to the commission even of crime. Considerable intelligence, ingenuity, and plausibility; a scourge to his family from childhood; turned out of the army as an incorrigible villain; attempted the life of a soldier; repeatedly flogged; has since attempted to poison his father."

Dr. Crawford afterwards wrote to Mr. Combe, saying: "I have a few remarks to make on the lunatic E. S. You observe in your own notes—'I am surprised he was not executed before he became insane.' This would lead to the supposition that he had been afflicted with some form of insanity in addition to a naturally depraved character. Such is not the case; he never was different from what he now is; he has never evinced the slightest incoherence on any point, nor any kind of hallucination: it is one of those cases where there is extreme difficulty, in drawing the line between extreme moral depravity and insanity. The governors of the asylum have often had grave doubts whether they were justified in keeping E. S. as a lunatic, thinking him a more fit subject for Bridewell. He appears, however, so totally callous with regard to every moral principle and feeling,—so thoroughly unconscious of having ever done anything wrong,—so completely destitute of anything like shame, or remorse, when reproved for his vices or crimes, and has proved himself so utterly incorrigible throughout life, that it is almost certain that any jury before whom he might be tried, would satisfy their doubts by returning him insane, which in such a case is the most humane line to pursue. He was dismissed several times from the asylum, and sent there, the last time for attempting to poison his father, and it seems he should be kept there for life as a moral lunatic; but there has never been the least symptom of diseased action of the brain, which is the general concomitant of what is usually termed insanity. This, I consider, might be made the foundation for a division of lunatics into great classes,—those who were insane from

original constitution, and never were otherwise; and those who had been insane at some period of life from diseased action of the brain, either permanent or intermittent."—Combe's System, p. 226.

Now what a host of inconsistencies does this one case present us with! Waiving the question of moral idiocy (for our laws recognize nothing of the kind, otherwise McInnes, Gottfried, and many others would not have been executed), we here see an individual enjoying immunity from the penalties which the law has attached to his crimes. Why?—Because he is really too depraved to hang. Had he not been quite so bad,—had he, with much that is evil, possessed one or two good qualities,—had he shown some little spark of conscience,—some glimpse of better feeling,—some little indication of remorse for his crimes, the law would at once have pounced upon him, and he must have satisfied its demands. It comes, then, practically to this, that though the law takes cognizance of crimes, and punishes them accordingly, a man has only to be utterly depraved, and push crime to every possible excess, in order to be exempt from its penalties.

I forbear enlarging here, as the anomalous condition of the law will be evident to every one.

And now it remains for me, in conclusion, in few words to show how, under the system advocated in my last paper, these difficulties would be obviated. That system proposed, not only the abolition of capital punishments, but the utter repudiation of the principle of revenge, both in theory and practice, and it considered all, whether insane or sane, who violated the laws, responsible to undergo that amount of restraint and confinement, which is requisite for the protection of society, and their own amendment.

The difficult question—where sanity ends, and insanity begins, would then be one of no practical importance; inasmuch as sane and insane would be treated alike, when they had once forfeited their claim to liberty. Those who, after

proper restraint and tuition, were considered by competent authorities, to be capable of conducting themselves aright, would be again set free; while those who gave no such indications,—whether the mischievous lunatic, or the utterly depraved moral idiot, would be treated with as much kindness as was compatible with the restraint requisite to prevent them again injuring society by their misdeeds.

How far this system would be successful in repressing crime was considered in my last paper; one thing, at all events, is quite certain, viz., that the present laws are a failure. It appears to myself that the views brought forward in this, and the two preceding papers are philosophical, and in accordance with man's constitution; and in reply to the old objection about deterring offenders, I have yet to learn that the advocates of an enlightened Christianity, one of the leading doctrines of which, is "justice tempered with mercy," have any excuse for injuring one man to deter another, thus affording a cruel illustration of the Jesuitical doctrine, of doing evil that good may come.

November 8th, 1844.

LECTURE XII.

MODES OF SEPULTURE.*

It may probably be considered, that the subject selected for the present occasion is an unusual one. Lectures generally have reference to the arts and sciences which are applicable to the living;—otherwise they are intended to elucidate debateable points in the history of nations, or to discuss some literary topic of general interest. To-night I propose to invade the sanctuaries of the dead; and I must

* This lecture, though not announced in the Prospectus of the volume, is inserted by the request of many who heard it. There seems to be a peculiar appropriateness in the subject, as a conclusion to a posthumous publication. It was Mr. Lowe's last production. The connexion of the theme with classic and Jewish antiquities, with which his mind was richly stored, excited a deep and reverential interest, and which from the numerous inquiries made respecting it, he appears to have communicated to the audiences to whom it was addressed.

It is only justice to his memory to say, that the lecture does not appear in his precise words. The composition was not in all its parts complete; but from his ample notes, the arrangement of which has been carefully preserved, this compilation has been made, for the most part in his own diction. The candid reader will kindly bear this in remembrance, if it should be found to fail of the impressive eloquence with which it was delivered.

invite you to take an imaginary tour with me, using historical reminiscences as our guide. Asmodeus like, I would waft you to far distant lands, where mingle in grandest solitude the relics of mighty nations long passed away. Our study will be not cities but cemeteries,—not the habitations of sentient beings, but crypts, catacombs, and charnel houses; whilst I shall only notice the customs of the living, as elucidating the various and oftentimes anomalous modes, employed in the disposal of the dead.

Let no one say that this solemn subject is uninteresting, or unimportant. Whatever the point of view, and however dark and impenetrable the mist which hangs over scenes once redolent with glorious thoughts and aspirations, the contemplation of death must be replete with important considerations: in one sense revivifying matter, and again bringing about the climax of all earthly careers, whether plebs or patricians, slaves, chamberlains, or kings—their future and eternal existence must be considered among the most overwhelming subjects that can occupy the human mind. This "holy ground," however, we may not tread; it is a subject for the pulpit, not the lecture desk; for the church, not the athenæum; for the divine, not the popular lecturer.

But if we presume not to lift the veil of futurity, nor to follow the spirit in its trackless flight, nor even to speculate on man's final and irrevocable doom:—what forbids that we should approach the subject, in a sanitary point of view which, though of less apparent importance than the former, is yet, on many accounts, deserving of notice, the more especially as it affects the welfare of survivors?

Of all the vicissitudes incident to the human race, none can be felt in such stern reality, nor come with such overwhelming force upon the soul, as the final invasion by Death of the mortal homestead. By this dread and awful visitation all other sublunary events are eclipsed. Loss of position may be treated with contempt; loss of wealth with resignation;

bodily pain may be borne with submission and even stoical heroism; but with Death, the great leveller, silent in his footsteps, mysterious in his course, the case is different; and, as no arm can stay his fatal arrow nor arrest its course, so no human heart may contemplate the ravages of the fell tyrant without emotion, or even deeply lacerated feelings. We see, perchance, the delicate thread of life untimely cut asunder; we mark the young and gentle form withered, and its fond and ardent hopes prematurely blighted by Death's insidious and lingering approaches; or, we may, awe-struck, watch manhood's noble tenement struck down suddenly, and without apparent warning, like an oak by the lightning's mysterious bolt! Haply the approach may be less sudden; we sit by the loved one's couch, buoyed up with hopes, or depressed by fears, and watch the ebbing spirit till it recedes from human gaze, and flies on the wings of religious hope and trust to that God, who gave it existence. In either case, when we come to realize the startling and agonizing fact, that the soul is really gone,—that the never-dying spirit, which linked the mortal mould with immortality, hath sped on her brighter mission, the question arises, after the first flush of grief hath passed, what is to be done with the mortal frame? Though veneration for the memory may remain, the illusions of hope have passed away with the ethereal part of man, and (in the concise and simple language of Jeremy Taylor): "when we have wept awhile, we then compose the body for burial."

It is not surprising that in every age, and in almost every nation, the decent and respectful disposal of the dead was looked upon, not only as a tribute of affection but as a religious duty; and, as stated by Milman, we have irrefragable evidence to prove, that the rites of sepulture formed part, indeed a most important part, of natural religion. Death, instead of lessening regard for the body, seems to increase the fervour of affection, by investing it with a sacred cha-

racter, so tender and peculiar, that the survivors will sooner shrink from profaning the dead body, than from injuring the living.

In the final disposal of the dead two important considerations present themselves:—firstly, it is requisite that the lifeless tenement should rest in peace,—that it be duly and faithfully protected from unhallowed intrusion;—secondly, it is, or ought to be, imperative, that the means adopted "beneath Death's gloomy, silent, cypress shades," though suited to "mourning, lamentation, and woe," shall not be injurious to the living. It is familiarly known that nothing is so destructive to human life as the gases given off during the decomposition of the dead. It is humiliating, though salutary, to contemplate the fact, that man, so "fearfully and wonderfully made," the once noble impress of the Almighty, should in so short a season, be reduced by the universal law of nature, to a fearful and loathsome mass of corruption, tending, without due caution, to impregnate the vital air with death; and that, though as our beautiful burial service has it, the "mortal shall put on immortality," yet the morbid residuum should so far partake of the effects of the curse of disobedience as to peril the health of those remaining, who were once so dearly loved and prized.

"Quo fugit Venus? Heu! Quove color? decens
Quo motus? Quid habet illius, illius,
Quæ spirabat amores,
Quæ me surpuerat mihi?"

So wrote Horace centuries ago: how eloquently paraphrased by the celestial meditant Hervey!—"Can that which some weeks ago was to admiration lovely, be now so insufferably loathsome? Where are those blushing cheeks? Where the coral lips? Where that ivory neck on which the curling jet, in such glossy ringlets flowed? With a thousand other beauties of person, and ten thousand delicacies of action? Amazing alteration! delusive bliss!—Fondly I gazed upon

the glittering meteor. It shone brightly, and I mistook it for a star, for a permanent and substantial good. But how is it fallen! fallen from an orb not its own! And all that I can trace on earth is but a putrid mass."

Though the evils of putrefaction be now generally admitted in regard to human remains in general, though it is known, that fatal epidemics have arisen from the decay of fish, locusts, and other animals, and though it is a sad concomitant of war, when delay takes place in the interment of the slain, they may be more forcibly impressed by example. I will cite two illustrative cases,—the first is taken from the "Cyclopædia of Practical Medicine," Article Plague; and the other is an extract from a "Tour through Germany, by the Rev. Dr. Render," inserted in the American "Gazette of Health."

"An American merchant-ship was lying at anchor in Whampoa Roads, sixteen miles from Canton. One of her crew died of dysentery. He was taken on shore to be buried. No disease of any kind had occurred in the ship from her departure from America till her arrival in the river Tigris. Four men accompanied the corpse, and two of them began to dig a grave. Unfortunately they began in a spot where a human body had been buried about two or three months previously. The instant the spade went through the lid of the coffin, a most dreadful effluvium issued forth, and the two men fell down nearly lifeless. It was with the greatest difficulty their companions could approach near enough to drag them from the spot, and fill up the place with earth. The two men then recovered a little, and with assistance reached the boat and returned on board. To one, the disease proved fatal on the evening of the fourth day; to the other, on the morning of the fifth.

"One of the two men, not immediately engaged in digging the grave, was attacked on the eighth day from his being on shore. The symptoms resembled those in the preceding cases. For three days previously to the avowed attack of illness, there had been pain and enlargement of one of the

inguinal glands, which at the period he was visited, had acquired the size of a hen's egg; and early in the disease, the breast and arms were covered with petechiæ. By active treatment this person recovered, as likewise did the fourth man, who had slight indisposition of no decided character." The other case is as follows :—

"In the month of July, 17—, a very corpulent lady died at ———. Before her death, she begged as a particular favour, to be buried in the parochial church. She had died on the Wednesday, and on the following Saturday, was buried according to her desire. The weather at the time was very hot, and a great drought had prevailed. The succeeding Sunday, a week after the lady had been buried, the Protestant clergyman had a very full congregation, upwards of nine hundred persons attending; that being the day for administering the Holy Sacrament. It is the custom in Germany, that when people wish to receive the Sacrament, they neither eat nor drink until the ceremony is over. The clergyman consecrates the bread and wine, which is uncovered during the ceremony. There were about one hundred and eighty communicants. A quarter of an hour after the ceremony, before they had quitted the church, more than sixty of the communicants were taken ill; several died in the most violent agonies; others of a more vigorous constitution survived by the help of medical assistance; a most violent consternation prevailed among the whole congregation, and throughout the town, and it was concluded that the wine had been poisoned. The Sacristan and others connected with the vestry were put in irons. The persons arrested underwent very great hardships, during the space of a week they were confined in a dungeon, and some of them were put to the torture; but they persisted in their innocence.

"On the Sunday following, the magistrate ordered that a chalice of wine, uncovered, should be placed for the space of an hour, upon the altar: the hour had scarcely elapsed,

when they beheld the wine filled with myriads of insects—by tracing whence they came, it was perceived, by the rays of the sun, that they issued from the grave of the lady who had been buried the preceding fortnight. The people not belonging to the vestry were dismissed, and four men were employed to open the vault and the coffin; in doing this two of them dropped down and expired on the spot, the other two were only saved by the utmost exertions of medical talent. It is beyond the power of words to describe the horrid appearance of the corpse when the body was opened. The whole was one mass of putrefaction; and it was now clearly perceived that the numerous insects, together with the effluvia which had issued from the body, had caused the pestilential infection, which was a week before attributed to poison.

"It is but justice to add that on this discovery, the accused persons were liberated, and every atonement made by the magistrates and clergyman for their misguided conduct."

It must be acknowledged that these are startling and fearful cases, and on searching the biblical and profane histories, it will be found that the danger alluded to was recognized by ancient nations, especially the Jews, God's chosen people, who not only placed vessels of water at their thresholds, that persons entering their habitations might purify by ablution; but, as the gaseous exhalations from the dead were thought to pollute everything they came in contact with, so all open vessels, as well as the whole house, were required by the Mosaic law to be purified after the removal of the corpse.—Numbers xix, 11, 12, &c.

If I know my own mind, I would wish to be useful in my generation, and would exert every effort that may conduce to vivify the universal and ethereal torch of life in its pristine integrity; but, when no longer useful to the living, let me be placed where my remains shall be undisturbed, and where

my useless parts may not tend to counteract the lessons I advanced whilst living. I repeat the well known epilogue of Shakspeare :—

> " Blest be the man who spares these stones,
> And cursed be he, who moves my bones."

Thus, as not wittingly injuring others during my humble life, I would eventually be put where I may not poison my fellow-creatures when dead.

In the cemetery of St. Etienne-du-Mont, Paris, will be found an epitaph both pointed and instructive, which meets my own views, but portraying them far more eloquently than I can pretend to express them :—

> " Simon Pierre, vir pius et probus
> Hic sub dio sepeliri voluit,
> Ne mortuus cuiquam noceret,
> Qui vivus omnibus profuerat."

Keeping the two expressed objects in view, I proceed to notice the modes of sepulture adopted among the various nations of antiquity, and if spared, shall at some future period extend the present notice by an examination of the mortuary customs of this country, and inquire how far our boasted civilization tends to promote sanitary regulations ? I also wish to offer suggestions towards improvement ; varying the subject by sketches from cemeteries and from the various church-yards,—" where the rude forefathers of the hamlets sleep ;" with such sanitary and moral considerations as may present themselves during the interesting inquiry.*

Looking back to the ancient modes adopted for disposing of the dead, one opinion appears to have been generally prevalent, viz., the desire that the body should return

* This praiseworthy intention was frustrated by the untimely death of the author : but it may not be irrelevant to state that his views in respect to his own remains were faithfully carried out : he was buried in a spot selected by himself in the Wolverhampton General Cemetery, and as he was wont to express it *sub tegmine fagi*.

to its primitive element,—to that mother earth whence it originated. This desire doubtless sprung from the influence of the fatal curse which was the result of man's disobedience,—"Dust thou art, and unto dust shalt thou return." Some ancient nations have held very fantastic notions on this subject. The Ichthyophages of Ethiopia, for example, threw their dead bodies into the waves, accounting it a pious duty to restore to the fishes the food derived from them. In Colchis and Phrygia, the inhabitants hung the livid corpses in trees or high places, yielding to the elements the pabulum thence obtained. It is needless, however, to dwell on eccentric customs of particular people, as the general practices were either inhumation or burning. The first process was doubtless the more ancient. The burial of the dead would almost appear to be a natural instinct, and certainly evidences an accordance with the Almighty fiat.

Sir Thomas Browne, in his "Hydriotaphia, or Urn Burial," quaintly observes, "God Himself, that buried but one, was pleased to make choice of this way, collectible from Scripture expression, and the hot contest between Satan and the Archangel about discovering the body of Moses."—p. 195. Hence he infers this to be the proper mode; and he looks on this opinion as confirmed by the habits of some of the lower animals, which have their exequies, and in some cases actual interments.

The burial of the dead among the Jews is clearly and forcibly proved xxiii of Genesis, in which we find the interesting details of the death and burial of Sarah. "And Abraham spake unto the sons of Heth, saying, Give me a possession of a burying-place with you, that I may bury my dead out of my sight. And Abraham buried Sarah his wife in the cave of the field of Machpelah, before Mamre: the same is Hebron in the land of Canaan. And the field and the cave that is therein were made sure unto Abraham for a possession of a burying-place by the sons of Heth."

Abraham also was buried in the grave in Machpelah, and after him Isaac, Rebekah and Leah, as we find from the dying instructions of Jacob, Gen. xlix. 29, et seq.: "And he charged them, and said unto them, I am to be gathered unto my people: bury me with my fathers in the cave that is in the field of Ephron the Hittite; in the cave that is in the field of Machpelah which is before Mamre, in the land of Canaan, which Abraham bought with the field of Ephron the Hittite for a possession of a burying-place. There they buried Abraham and Sarah his wife; there they buried Isaac and Rebekah his wife; and there I buried Leah."—Genesis l. 5, 26.

The Pyramids of Egypt will naturally occur to the minds of all, as wonderful evidences of the habits, as well as power of the ancient inhabitants of that extraordinary country. It has been clearly established that all the Memphic Pyramids were in existence, and moreover were looked upon as ancient erections, two thousand years before Christ. Gliddon, in the "Otia Ægyptiaca," p. 25, says, "In their object the Pyramids were exclusively sepulchral. They represent the tombs of Pharaohs who ruled in Memphis prior to the invasion of the Hykshos tribes; and are, therefore, the sepulchres of a long line of Egyptian kings, who reigned from the first to the thirteenth dynasty of Manetho." The views of the Egyptians appear to have been most rigid, with regard to the treatment of their dead bodies, as well as to their final disposal. An invariable rule prevailed whereby the places adopted for their sepulchres were held sacred, and these depositaries were most wisely separated as far as possible from the abodes of the living.

The records of other ancient nations show corresponding passages in their early history. Thus the Assyrians, Medes, Parthians, Tyrians, and Persians,* had invariably natural caves or artificial vaults for the interment of the dead, in places exclusively set apart for such objects. The Chinese

* Rollin, vol. ii. p. 141.

and Peruvians in the more remote regions of the earth entertained like practices; whilst the tombs of royalty were even yet more exclusive. "The tombs of kings, and of great men of remotest antiquity, were in caverns carefully made in the midst of the most solitary mountains. Gyges, king of Lydia, was buried at the foot of Mount Tmolus. The kings of Persia had their sepulchres on the royal mountain, near the city of Persepolis: Sylvius Aventinus was buried on the hill that bears his name, Numa Pompilius on Mount Janiculum,—then without the city of Rome,—and King Dercennus within a high mountain, as Virgil attests." —Walker's Gatherings from Church Yards, p. 18.

Travellers yet visit the rude sepulchres of the ancient Russ, forming extensive caverns on the borders of the Boristhenes, far remote from the abodes of the living; whilst the Danes usually erected tumuli or artificial mountains, with enormous labour, oftentimes solely covering the remains of a single chieftain or mighty warrior.

"When the king of the European Scythians died they embalmed his body, and wrapped it up in wax; this done, they put it into an open chariot, and carried it from city to city, exposing it to the view of all the people under his dominion. When this circuit was finished, they laid the body down in the place appointed for the burial of it, and there they made a large grave, in which they interred the king, and with him one of his wives, his chief cup-bearer, his great chamberlain, his master of horse, his chancellor, his secretary of state, all which persons were put to death for that purpose. To these they added several horses, a great number of drinking-vessels, and a certain part of every kind of household goods and furniture, belonging to their deceased monarch; after which they filled up the grave, and covered it with earth. This was not all: when the anniversary of his interment came, they cut the throats of fifty more of the dead king's officers, and of the same number of horses, and placed the officers on horseback

round the king's tomb, having first prepared and embalmed their bodies for the purpose; this they did probably to serve him as guards. These ceremonies possibly took their rise from a notion they might have of their kings being still alive; and upon this supposition they judged it necessary that he should have his court and ordinary officers around him. Whether employments which terminated in this manner were much coveted I will not determine."—Herod. l. iv. c. 71, 72.

Still, with all this testimony in favour of inhumation, it is unquestionable that cremation or urnal interment prevailed at an early period among some nations; in particular cases superseding the more ancient system, and in other instances employed on emergencies, or even indiscriminately. Certain religious dogmas probably favoured the idea that the soul, quickly disengaged from its earthly prison-house, would become purified by fire; and thus happily delivered from the burden of the perishable body, and rapidly attracted to its own sphere, might unite itself with the soul of the universe. Herodotus considered that by the process of burning, bodies returned sooner into their constituent principles. Others thought it most natural, that the body should yield to fire, as due to the master principle in its original constitution: such was the view entertained by Heraclitus, and "therefore," he remarks, "they heaped up large piles, more actively to waft it toward that element." This practice was very general among the Greeks and Romans, as well as the ancient Britons and other northern nations; whilst the Gauls (according to Cæsar) "not only burned their dead—in which they were wise—but on many occasions burned along with them their living also. Their funerals were conducted with great pomp. Whatever in life had been dear to the departed, whether slaves, or mistresses, or wives, they united to the dead on the funeral pile; conceiving that the terrible sacrifice would prove grateful to his manes."—De Bell. Gall. vi.

The Greeks are said to have derived their practice of burning the dead from Hercules. "The story," says St. John, "is extant in choice Greek, written originally by the historian Andron. Upon the treachery of Laomedon, celebrated by poets, Hercules determined on assembling an army, for the purpose of chastising his majesty's jesuitical conduct, and bringing him to reason. The hero, having no authority to employ compulsion, was fain to make use of persuasion, and obtained from King Lycimnius permission to take along with him his son Argæus, upon condition he would swear to bring him back. Hercules, of course, took the oath, as any soldier would, and Argæus accompanying him was slain. He was now somewhat puzzled, but, being fertile in expedients, and bold besides, he burned the body, and taking back the ashes along with him, presented them to Lycimnius, as a proof of his faith. This, according to Hellenic tradition, was the origin of burning the dead." Most authors, however, with great plausibility, date the Greek practice from the Trojan war; when the carnage was oftentimes so frightful, as to compel the belligerent parties to adopt hasty and summary steps in disposing of the slain, in order to protect the survivors from disease.

We find noble descriptions of the crematic process in the Grecian funerals of Homer, in the formal obsequies of Patroclus and Achilles; confirmable also among the Trojans from the funeral pyre of Hector, burnt before the gates of Troy; and in the long continuance of the practice, in the inward countries of Asia; whilst as recently as the reign of Julian, we find that the king of Chaonia (a country near Persia) burnt the body of his son, and interred the ashes in a silver urn.

In some respects there would naturally arise a preference for the practice of burning the dead; for whilst by simple inhumation instances are recorded of bodies having been gnawed out of their graves by wild beasts, and human skulls were occasionally converted into drinking bowls or

applied to even worse purposes; the ashes of the dead were treated with the greatest respect, being deposited in urns, and reverently buried; and some were kept in private houses in the interior of cities, and rarely even in the sacred temples.

Sir Thomas Browne observes, p. 220, "Plaistered and whited sepulchres were anciently affected in cadaverous and corruptive burials; and the rigid Jews were wont to garnish the sepulchres of the righteous, (St. Mathew, xxiii); Ulysses in Hecuba, (Euripides), cared not how meanly he lived, so that he might find a noble tomb after death. Great princes affected great monuments; and the fair and larger urns contained no vulgar ashes; which makes that disparity in those which time discovereth among us. The present urns were not of one capacity, the largest containing above a gallon, some not above half that measure; nor all of one figure, wherein there is no distinct conformity in the same or different countries; observable from those represented by Casalius, Bosio, and others, though all found in Italy; while many have handles, ears, and long necks, but most imitate a circular figure in a spherical and round composure; whether from any mystery, best duration, or capacity, were but a conjecture. But the common form with necks was a proper figure, making our last bed like our first; nor much unlike the urns of our nativity while we lay in the nether part of the earth, (Psalm lxii) and inward vault of our microcosm."

Without further speculation on matters which can only interest the professed archæologist, I proceed to detail somewhat more fully the prevalent customs among the illustrious nations of antiquity, viz., the Egyptians, Jews, Greeks, and Romans,—merely observing *en passant*, that if time allowed, much interesting information might be derived from the ancient Etruscans, who adopted both modes of sepulture. The following free translation of an epitaph

found in an Etruscan baker's tomb, may raise a smile, while serving to illustrate my subject,—

> "The fair Astasia was my wife,
> The best of women during life;
> She died,—was burned—and, would you ask it?
> Her ashes lie in this bread-basket."

To begin with Egypt, valuable stores of information are attainable in connexion with this illustrious nation from the mighty remains of her ancient monuments and mausoleums, from the writings of Josephus, Herodotus, and others, and more especially from the hieroglyphical interpretations made known by the discovery of the Rosetta stone in 1800. It is impossible to approach this once great African territory without feeling a reverence for the soil, associated with so much to interest, and connected so intimately with religious, as well as profane history. Egypt! at whose name Moses and Abraham, Joseph and Pharaoh, no less than Pompey and Cæsar, Antony and Cleopatra, and he, the conqueror of the world, with the ancient magi, rise from their graves and pass in solemn review before us—birth place of the arts, and cradle of the sciences! mighty in thought! gigantic in operation!—thou wondrous country! where (if modern chronology be right), a people reached their nation's manhood, and even hoary age, when time itself was young!

Mr. Gliddon in his "Lectures on Egyptian Archæology," p. 21, observes: "In proportion as a knowlege of the East developes itself, we behold a new universe becoming revealed, and unfolding an astounding civilization anterior to antiquity, which Greek and Roman antiquity had never suspected. It were well that the future traveller, who visits the East with literary intentions, would, so far especially as Egypt is concerned, bear in mind the words of an Egyptian priest, uttered 2400 years ago: 'O, Solon, Solon! you Greeks are always children, nor is there any such thing as

an aged Grecian among you * * *. Because all your souls are juvenile; neither containing any ancient opinion derived from remote tradition, nor any discipline hoary from its existence in former periods of time."

In a country stretching back, (according to hieroglyphical records,) fully twenty centuries before the time of the patriarch Abraham, in whose tombs are recorded with a freshness which lasts to this day, annals of greatness belonging to the earliest antiquity, it is highly instructive to contemplate the habits and customs of every-day life pictorially represented; a mode of exemplification in which the genius of this singular people delighted to perpetuate itself. These hieroglyphics are now deciphered and translated with as much accuracy as the characters of living languages.

"If we enter a tomb," says the same indefatigable author, "we see the deceased surrounded by his family, who offer him their remembrances. The name, profession, rank, and blood-relationship of each member of the family are written against him, or her. The scenes of ordinary life are painted on the walls. Study, gymnastics, feasts, banquets, wars, sacrifices, deaths and funerals, are all faithfully delineated in these sepulchral illustrations of manners, which are often epic in their character. You have the song with which the Egyptian enlivened his labours in the field, the anthem that when living he offered to his god; and the death-wail that accompanied his body to the grave. Every condition, every art, every trade figures in this picturesque encyclopædia, from the monarch, priest, and warrior, to the artizan and herdsman. Then these tombs are real museums of antiquities—utensils, toilet-tables, inkstands, pens, books, the incense bearer and smelling-bottle are found in them. The wheat which the Egyptian ate, the fruit that adorned his dessert-table,—peas, beans, and barley, which still germinate when re-planted, are also discovered. The eggs, the desiccated remains of the very milk he had once used for his breakfast, even the trussed and roasted goose, of which the

guests at his wake had partaken—all these evidences of his humanity and a myriad more exist in kind, in the museums of Europe,* to attest their former owner's declaration to us, modern occidentals athwart the oceans of Time and the Atlantic, *Homo sum; humani nihil a me alienum puto.* But not only do the scenes sculptured or painted on the temples, and in the sepulchres, furnish every detail concerning the Egyptians; they give us the portraits, history, geographical names and characteristics of an infinitude of Asiatic and African nations, existing in days long anterior to the Exode, —many of whom have left no other record of their presence on earth; and others, again, whose names are preserved in the Hebrew Scriptures."

So complete a knowledge of ancient Egypt has been thus obtained from domestic implements, &c., long since buried, from pictorial representations which form an illustrated portmanteau, and from hieroglyphical inscriptions, that we seem to be as familiar with the habits and pursuits of the Egyptian gentlemen of Joseph's time, as with those of our own ancestors of the last generation. A number of tombs of private persons lie scattered around the royal pyramids all pregnant with art illustrations. Lepsius has found such abundant genealogical lists—both public and private therein, and derived so rich an amount of knowledge from those representations, that he purposes to write the COURT JOURNAL of the fourth Memphite dynasty of kings who died 5000 years ago! The diagrams of the various trades found portrayed on the walls of these tombs shew what an eminently practical people the Egyptians were. Their wondrous engineering skill is demonstrated by the vast fabrics raised by them, and which have alike defied the ravages of man and time. With the exception of steam-power, electrotypes, Daguerreotypes, them agnetic telegraph,

* The Egyptian department of the British Museum is highly interesting, and should be carefully examined by all who have the opportunity of doing so.

chloroform, gun-cotton, and the printing press, the arts and sciences were nearly identical at that early age on the banks of the Nile, with those which are found at the present day on the banks of the Thames.

> "Dark has been thy night,
> Oh, Egypt! but the flame
> Of new-born science, gilds thine ancient name."

In reviewing the ancient practices of the Egyptians, the question naturally arises,—what was the object of all this vast trouble and expense in ornamenting the tomb? It could not minister to the gratification of the living, inasmuch as the labour was only seen when new occupants were added to the denizens of the sepulchre. The answer to the question must be traced to the religious creed of the country; and this will also elucidate the process of embalming the dead. Whatever may have been the idea concerning the ulterior resurrection of the body, it was with this nation a firm belief that the soul still hovered round the carnal part so long as it retained its form entire; and that, therefore, disunion never took place, so long as decomposition was averted. The belief that the soul was thus magnetised to the body (if I may be allowed the term) so long as it was kept from decay, will explain the cause of those elaborate modes of embalmment, and the massive coverings of tombs, together with the painted scenes of daily life, and the presence of utensils of common use, tending to refresh the spiritual memory with objects, which formed the usual sources of attraction and interest to the living; and it is obvious that such a belief would also greatly tend to excite respect for the depositaries of the dead, which thus became sacred from pollution. The same reason will also explain why more pains were taken to decorate and beautify the tombs than their houses; the one being regarded as a temporary lodging, while the other was looked upon as an everlasting habitation. Moreover the tomb was considered

in the light of a recompense for "the good deeds done in the body," as well as an object of emulation.

The date of what may be termed natural mummy sepulture, is considered to have been earlier than the period when the Pyramids were erected, and the sand was doubtless the ante-monumental burying-place;* the western hills being finally selected as lying beyond the reach of inundation, and abutting upon the largest breadth of alluvium in which the chief cities were congregated, and also as representing the dark regions of the setting sun, known to the Greeks as Erebus,—the root of which is the Semitic word Ereb, the West.† The Necropolis of Memphis is represented to be twenty-two miles long, and about half a mile wide; and it is conjectured that in this area of eleven square miles a fourth part of the population of ancient Egypt was buried. Interments in the sand were a necessity in the more remote ages, because the inhabitants did not possess the tools that were needful for excavating more solid substances; but as the uses of metals became known, the inconveniences of sand-burial induced the people to seek the protection of rock-sepulture.

Lepsius dates the earliest Pyramids with the third dynasty, in other words prior to the thirty-fourth century B.C.: from the building of the Great Pyramid to the present time he gives a period of 4000 years. "But," says Mr. Gliddon, "let us call the period of mummification 3000 years,‡ which would be greatly below the mark. The average population of Egypt during that time probably amounted to five millions, which died off every generation of thirty-three years. We have, then, by a simple process of calculation 450 millions of mummies for the 3000 years;

* The sand of Egypt is strongly impregnated with natron, nitre, muriate of soda and alum, and these salts destroy the oleaginous and lymphatic matter of bodies.

† Hence the custom of laying the dead east and west.

‡ Embalming did not absolutely cease in the East, until the Moslem invasion in the seventh century after the Christian era.

but as the time was probably more than 3000 years, the number of mummies might be estimated in round numbers at 500 millions."

In the process of embalmment the viscera were first removed and placed in a chest by themselves, and held aloft towards the sun by the attendants, whilst a prayer to the gods was offered in the name of the departed; in which, after setting forth the virtues of the deceased, and declaring that he had committed no heinous sin, such as murder, &c., they concluded by the consolatory remark, that if any faults had arisen from eating or drinking, the sin arose out of consideration for the separated viscera, which were finally thrown into the river, and the body was then considered pure and ready for embalming.

Herodotus mentions three kinds of embalmment, which with the swathing cloths and coffins, cost sums varying from four, to two hundred and fifty pounds of our money. The first mode was very elaborate, and chiefly applied to kings, priests, and other distinguished persons. The time required for its consummation was seventy days; during which the women of the family went about the city with their heads covered with earth and bare of clothes to their waists, beating their bosoms and rending their garments, alternately indulging in loud lamentations, and singing praises in memory of the deceased. — See also Genesis l. 1 et seq.

The embalmers were a distinct class of men, called Tarichutæ: they had districts of country and ranges of buildings appropriated to them; the inhabitants of which only were permitted to practise the art. A case is quoted in which an individual brings what we should term an action against another for poaching upon his (the plaintiff's) manor; but the verdict is not embalmed in memory.

The most honourable and costly mode of embalming was that in which the subject was made to resemble Osiris: the body was filled with myrrh, cassia, and other fragrant

resins; the whole being then steeped in a solution of natron. This substance, which was found in great abundance in the lakes of Egypt, situated in a barren valley called Bahr-bela-ma, about thirty-three miles westward of the Delta, contains a large per centage of carbonate of soda,—a well-known anti-septic: the soda, combining with the adipose parts, left the fibrous membranes untouched. The next process was bandaging the body with linen steeped in some resinous substance remarkably fine and brilliant, apparently a precious or valuable gum. The art with which the bandages were combined and applied to envelope the limbs smoothly and compactly, excites the admiration of professional men; and there is no single form of bandage adopted by modern surgeons, which has not its prototype in examples met with among the ancient mummies. Kings and priests not only had their arms and legs, but even their toes and fingers separately bandaged; so that there are specimens known, in which one thousand yards of linen were used for a single mummy, and entire strips have been found and unravelled of equal length: hence a recent Egyptian paper endeavoured to prove that 420 millions of mummies would,—if divested of their linen wrappers, yield 420 millions of metrical quintals of cloth; which, when converted into paper, should yield 4,200,000*l.* sterling.—See "The Times," 12th May, 1847.

The linen varied in texture from calico to superfine cambric, the whole revenue from which went to the priests, who combined in their sacred persons the various offices of physicians for the body and soul, apothecaries, mummy-makers, undertakers, and sextons; and they had also the entire monopoly of the linen cloth used, as well as of the growth of the flax from which it was manufactured. Between the folds of the bandages, scarabæi and amulets or charms for the welfare of the soul, written prayers, plates of gold, necklaces, ear-rings, and other ornaments, were often bound up. The body had next a hard case fitted to it, made

with layers of cloth, cemented together by a fine plaister or cement, and forming a substance like pasteboard, moulded while in a moist state, so as to take the human shape. The body case was ornamented with paintings in vivid colours and gildings, which even now when brought to light and air, have lost little of their original brilliancy and freshness of outline. The name and character of the deceased were also delineated. The mummy was then inclosed in an outer case, usually of sycamore wood; occasionally additional wooden cases were used; the exterior being coloured with a white ground, and divided by rectangular bands into regular divisions, in which were figured sepulchral divinities, painted with appropriate colours, varied by funeral scenes,—the duties of the soul, the passage of the sun, the planetary system, &c.

Such, according to Herodotus, was the most elaborate and costly mode of preparation. In the second kind of embalmment the body was simply filled with cedria, (an oily gum extracted from the cedar,) instead of the more rare and costly aromatics, and then steeped in natron. In the third, which was the cheapest mode used, the body was only injected with salt and water; but steeped in natron seventy days as the others. In the second and third processes no swathings were employed, but the bodies were given back to the relatives as they came from the natron-lye. After the conquest of Assyria by the Pharaohs of the eighteenth dynasty, bitumen was largely employed in embalmment; but, as might be expected, the general arrangements varied with the dynasties: so that there are certain epochs in mummification, the criteria of which are familiar to the Egyptologists, every one possessing its peculiar and easily understood characteristics.

Mummies were considered as articles of property, of the most sacred kind; and the deprivation of them was looked upon as the most afflicting and exemplary punishment. Debtors were obliged to give up to their creditors the bodies

of their ancestors; and if they died insolvent, the next of kin and blood-relations were compelled both by honour and law to ransom them. It is recorded that Asychis, king of Egypt, in order to induce his subjects to pay his debts, compelled them to furnish as pledges the hallowed remains of their ancestors; adding the threat that those who did not redeem their pledges, should be debarred from the honours of sepulture.—Spond. p. 367.

The burial places of the Egyptians were always at a distance from human habitations, and could only be reached by crossing water. It is well known that Egypt is intersected by the Nile, as well as by innumerable canals; so that the tombs were invariably on the opposite side of the stream to the cities themselves: such was the case, whether the sepulchres were in the ground or upon it, whether in the great cemeteries of Thebes, Memphis, Abydos, or in the royal tombs and pyramids. This circumstance may have originated both in sanitary and religious considerations: it is, however, certain, that the ancient inhabitants of Egypt were "wiser in their generation" than ourselves; for though our system of burial may be less objectionable than mummy-interment, yet our intra-mural grave-yards would never have been tolerated by the interesting inhabitants of the Nilotic regions.

A curious ceremony was performed in connexion with their burials, which must have had an important influence on the inhabitants of Egypt. Before the interment of a corpse, whether royal or otherwise, a formal judgment day was fixed by the relations, and, prior to the body being conveyed across the river or lake, forty-two judges took their seats on benches by the water-side, a boat was moored to the shore, and before the coffin was put therein, any individual was permitted to accuse the deceased, if crimes worthy of punishment could be laid to his charge. If the accusations were sustained, the accustomed rites ot sepulture were withheld; but false charges were severely

punished. If no accusation were made, or if the accuser were proved to be acting from malignant or vindictive motives, thus calumniating the dead, the rites were allowed to proceed, relations laid aside their mourning, and extolled the virtues of the departed. Unlike the practice among the Greeks, where true nobility usually belonged to noble birth, all Egyptians were considered equally noble who united good education with justice, piety, and temperance, and on the promulgation of these virtues by the friends of the deceased, the multitude joined in songs to his honour. Then amid the chorus of eulogy, and prayers to the gods to receive the companion for the pious dead, the bark was rowed across the waters, which were supposed to divide the living from the delightful region of departed spirits. From the opposite side of the river a pompous procession conducted the body to the tomb; and usually were interred with it various objects,—such as insignia of rank, if grandees,—tools, &c., if artificers: so that the spirit of the departed should be surrounded with such objects of ornament or utility, as were familiar during life. Those unfortunate bodies which were prohibited from interment in the happy regions, were kept in houses till the cause of prohibition was removed: sometimes, after years of probation, the falsehood of the original accusation was proved by the children of the deceased; or, if debarred by debt, the money was paid, and the funeral was allowed to proceed. The accusation must necessarily be disproved, and pecuniary obligations satisfied, before the rites of sepulture were allowed. If this strict rule were enforced in our days, I fear we should find many mummies unburied in our houses.

Egyptian tombs were generally in caves in the side of hills, except in the case of monarchs, for whom pyramids* were erected. When a king commenced his reign one of the first

* Pyramid: πυραμις from πῦρ fire, because flames of fire grow from a breadth at bottom to a sharp point at top. A pyramid hieroglyphically represented the nature of the soul of man.

objects which engaged his attention was the construction of his final habitat: thus a small hill or rock was chosen for the tomb, the death-chamber excavated therein, and a passage communicating with the surface. Over the chamber a quadrangular course of masonry was laid converging toward the top. This was generally built with the limestone, which forms the geological basis of the Nilotic alluvial basin cropping out east and west at Cairo, and the district of the Pyramids and the Lybian desert.* In a few cases sun-dried bricks were used instead of stone. If the king died in his first year this was cased over and a small pyramid formed. If the monarch reigned a second year another course of stone or brick was added, and so on annually; till, as in the case of the Great Pyramid, sufficient stone was raised over the solitary chamber to construct a city. The former area of the base of this vast structure was 13 acres 1 rood and 22 perches: the present area of the base is 12 acres 3 roods and 3 perches. The perpendicular height (originally 480 feet) is now 450 feet 9 inches and the inclined height 611 feet, giving a facial angle of 51° 50″. The original amount of masonry was about 89,028,000 cubic feet,—equivalent to 6,848,000 tons of stone. About the sixteen hundredth part of the Great Pyramid is occupied by the chambers and passages, while all the rest is solid masonry. Each one of the casing stones† has been estimated by an architect to weigh eight tons. When the royal builder died, the enlargement of the Pyramid ceased, and the outer casing (delicate veneering!) was added. This done, it remained but to fill up the angular parts with smaller stones, adding oblong blocks to form the steps with champfered faces, and finally dressing the surface from top to bottom. Hence it will be inferred that when completed, the Pyramids were neither intended to be re-opened nor ascended; as these ob-

* Orlebar.

† A beautiful marble brought from the Lybian hills—a distance of fifteen miles.

jects could only be accomplished by removing the ponderous casings.

The sixty-nine pyramids represent seventy or eighty kingly generations, (two kings sometimes occupying the same pyramid,) and the last of these monarchs, (according to the best authorities) died before Abraham was born.

I come next to a consideration of the Jewish customs; though I have already shown that with this people burial was the usual mode, whether in compliance with the Almighty fiat or because Cain covered Abel with earth, and so originated the practice. Cremation was not, however, forbidden, though seldom adopted;—never, indeed, except for cogent reasons: though the Jews made great burnings for the kings and others. See an example in 2 Chronicles xvi. 13, 14. "And Asa slept with his fathers and died in the one-and-fortieth year of his reign. And they buried him in his own sepulchre, which he had made for himself in the city of David, and laid him in the bed which was filled with sweet odours, and divers kinds of spices prepared by the apothecaries' art; and they made a very great burning for him." According to Spondanus, (Calmet: sacra p. 158)—"The Hebrews burned perfumes upon the dead, which they called combustion, whence, it has been erroneously concluded that they were accustomed to burn dead bodies also."

I find only two cases of body-combustion alluded to in the Scriptures, viz., that of Saul and his sons taken and burnt at Jabesh Gilead (1 Samuel xxxi. 12). In this case probably recourse was had to the unwonted method of burning the dead bodies, in order to protect them from the contumely of the Philistines; and also because they were too much mangled to allow the process of embalmment, which the Jews had learned from the Egyptians. The other allusion to burning is in Amos iv. 11, and is somewhat vague. If taken with the context it would seem to refer to the great pestilence, when not only few would be left to bury,—but,

as it would be unsafe to go abroad, because of the stink of the camps: in this case doubtless the burning would be sanctioned by expediency. We find throughout the whole Jewish history, that inhumation was an universal practice, and that the rites of sepulture were absolutely indispensable. Many passages show, as in the case of Jezebel, that the deprivation of interment was looked upon as the greatest calamity and curse that could happen. How affectingly is this described by the Psalmist (Ps. lxxix.) "O, God! the heathen are come into Thine inheritance; Thy holy temple have they defiled; they have laid Jerusalem in heaps. The dead bodies of Thy servants have they given to be meat unto the fowls of the Heaven, the flesh of Thy saints unto the beasts of the earth. Their blood have they shed like water round about Jerusalem; and there was none to bury them."

With such feelings, it is not to be wondered at, that profane treatment of the dead body should be one of the calamities threatened against the wicked. Witness the prophesy of Jeremiah against Jehoiakim.—Jeremiah xxii. 18, 19. "Therefore thus saith the Lord concerning Jehoiakim the son of Josiah King of Judah; they shall not lament for him, saying, Ah, my brother! or Ah, sister! they shall not lament for him, saying, Ah, Lord! or Ah, his glory! He shall be buried with the burial of an ass, drawn and cast forth beyond the gates of Jerusalem." In other words,—he shall be exposed to putrefaction as beasts are; "in the day to heat, in the night to frosts:"—for "the dogs to tear, and the fowls of heaven and the beasts of the earth to devour and destroy."

The rites of sepulture were not denied to enemies. For although the Philistines at Gaza must have felt indignant at the last act of Samson in causing the destruction of the lords of the Philistines with himself, and so many people in the house of Dagon their god, they yet prevented not his brethren from taking up his body and burying it "between

Zoah and Eshtaol in the burying-place of Manoah his father." In this, it is true they may have evinced some worldly wisdom; and, as a superstitious people, may have judged that if burial were denied, God, who had accorded to Samson such miraculous strength whilst living, might adopt some mode of vengeance for any slight or affront offered to his lifeless remains: and thus, from fear, would be as desirous to rid themselves of the body, as, on a subsequent occasion they were of the "Ark of the Lord in Bethshemesh." Suicides also were not refused burial: but, in this case the rites were withheld until after sunset; as the souls of the self-murderers were believed to be consigned to hell.

It is important to bear in mind that the spots chosen by the Jews for the "fields of the dead" afford to us good examples, as they were generally in lonely and sequestered spots, far removed from the habitations of the living;—and in caves cut out of the rocks or in natural caverns which abound in the geological formations of the district. The graves of the poorer classes were apparently arranged together without discrimination. We may infer this from the following passage:—"And they fetched forth Urijah out of Egypt, and brought him unto Jehoiakim the king; who slew him with the sword, and cast his dead body into the graves of the common people." Jer. xxvi. 23. It was to graves of this class our blessed Saviour compared the Pharisees.—"Ye are as graves which appear not, and the men that walk over them are not aware of them." Luke xi. 44.

The Jews rarely allowed tombs within their cities, unless for kings or distinguished persons. In Jerusalem the only burial places recorded are those of David and his family, and that of Huldah the Prophetess. On the other hand we find in the sacred writings ample evidence to show that every city had its public cemetery without the walls.

In the affecting account of the Crucifixion of our Lord we find this remarkable passage:—"And the graves were opened and many bodies of the saints which slept arose, and came out of the graves after his resurrection, and went into the holy city."—St. Matthew, xxvii. 52, 53. In the cities of the Levites two thousand cubits or three-quarters of a mile round about the walls were allowed for suburbs: it is fair therefore to infer that the cemeteries must have been formed at a still greater distance.

I have before alluded to Abraham's declining to bury Sarah in the sepulchres of the Hittites; and this circumstance shows the objection which the Jews evinced against admitting strangers within their burial places. Moreover we find that this custom continued to later times, for the thirty pieces of silver given to Judas as the price of his betrayal of our Saviour, were appropriated to the purchase of "the Potter's field to bury strangers in."—St. Matthew, xxvii. 7. The site has been recently discovered by Wilde. This custom is still entertained by the descendants of the ancient Israelites; and thus being constant in its regulation was doubtless received from God.

Those among the Jews who possessed lands of inheritance usually had tombs constructed within their own possessions: thus 1 Sam. xxv. 1:—"And Samuel died; and all the Israelites were gathered together, and lamented him, and buried him in his house at Ramah." Joab also "was buried in his own house in the wilderness."—1 Kings, ii. 34. In these cases, however, we cannot suppose that the houses of living persons were meant; as they would be rendered impure by the forbidden presence of a corpse. Sepulchres in private grounds or gardens were, as before observed, either in natural caverns or in artificial excavations hewn out of the solid rock. In the case of Lazarus the grave is expressly described as a cave. "It was a cave and a stone lay upon it."—St. John xi. 38. The tomb in which

was deposited the body of our blessed Lord was "A sepulchre that was hewn in stone."—St. Luke xxiii. 53. In St. John xix. we find the ceremony of our Saviour's interment more fully described,—"And after this Joseph of Arimathea, being a disciple of Jesus, but secretly for fear of the Jews, besought Pilate that he might take away the body of Jesus: and Pilate gave him leave. He came, therefore, and took the body of Jesus. And there came also Nicodemus (which, at the first came to Jesus by night) and brought a mixture of myrrh and aloes, about an hundred pounds weight. Then took they the body of Jesus and wound it in linen clothes with the spices, as the manner of the Jews is to bury. Now in the place where he was crucified there was a garden; and in the garden a new sepulchre, wherein was never man laid. There laid they Jesus therefore, because of the Jews' preparation day; for the sepulchre was nigh at hand." Few persons reflect upon the importance of the expression of a "new tomb" for Christ. In 2 Kings xiii. 13 we remember that a remarkable circumstance is mentioned, when, during the confusion incident to an invasion by the Moabites, a dead man was being carried out for burial, and they cast him into the sepulchre of Elisha,—"And when the man was let down and touched the bones of Elisha, he revived, and stood up on his feet." In compiling these remarks I was forcibly struck with this passage, in connexion with the description given by the Evangelists of our Lord's sepulchre, which is emphatically said to be "a new tomb wherein was never man yet laid." What peculiar significance has this short note. For if our Saviour had been buried in a tomb containing other bodies, the cavilling Jews would have said, "It is true this man has risen, but that is no fulfilment of the prophecies of the resurrection of the Messiah; doubtless he has touched the bones of some prophet, which has caused him to rise, as in the case referred to in the Old Testament." Thus God has

sealed this glorious truth—the resurrection of Christ—beyond all doubt, making it the Christian's brightest hope,—a sure pledge of his own resurrection from the dark portals of the grave.

The tombs of those Jews who could afford to expend large sums in their construction were often spacious caves cut at enormous expense out of the solid limestone rock. They usually consisted of two chambers; but with the wealthy, there were often many more, arranged one within another. "Machpelah" (Abraham's tomb) signifies a double cave. Christ's also was double,—consisting of an outer apartment or entrance porch. Into this, the women who visited the sepulchre entered, and from this place could be seen the contents of the tomb, as the bodies were usually deposited in cells or niches round the sides of the rooms. In the sepulchres of the kings great expenditure both of labour and treasure took place. The approach was on the eastern side, through an entrance cut out of the natural rocks; this admitted into an open court forty paces square, and of beautiful execution,—the architrave being adorned with sculptures of fruits and flowers intermixed with emblematical devices. From this court or hall, a descent was formed through a lofty doorway and passage to the sepulchral room which was eight yards square; the angles of the passages and apartments were so just and true, that the most experienced architect can detect no inaccuracy of detail, though the whole is cut out of the solid rock. We pass from this into six additional rooms, one within another, and all of the same dimensions and character as the first. The two innermost rooms are deeper than the others, and required six or seven steps to descend into them. In all these chambers are found coffins of stone in niches round the sides: one chamber contains twenty-four cells; another forty-eight. The two lower chambers are for dependents; and the higher ones for kings. There is something gloomy yet solemn and grand in the contemplation of these immense

sepulchral palaces. We may picture to ourselves these large and murky caverns, green with age, one within another, containing narrow repositories for their frail constructors. Here deceased monarchs lie in state suitable to their former rank, with arms by their sides and swords at their head, with the bodies of their chief officers and companions around them*—fit emblem of the instability of all sublunary things, and of the fleeting pomp and grandeur of the world. "Thy pomp is brought down to the grave, and the noise of thy viols; the worm is spread under thee, and the worms cover thee."—Is. xiv. 11.

"What is this passing scene? A peevish April day,
A little sun, a little rain,
And then time sweeps along the plain,
When all things fade away.
Man, soon discussed,
Yields up his trust,
And all his hopes and fears lie with him in the dust."

It appears remarkable—but we learn from ancient and modern writers that some of the more ambitious sepulchres were perched like an eagle's eyrie in almost inaccessible and rugged cliffs

"Wrapt as in the cloud
In which light dwelt before the sun was born;"

where they were more conspicuous, and certainly more expensive to form. It is presumed, however, there was greater honour in reposing in them. Thus Hezekiah was buried "in the chiefest" (more literally the highest) "of the sepulchres of the sons of David."—2 Chron. xxxii. 33. Hence also we discover the source of Shebna's vanity, which drew down the rebuke and displeasure of God. "What hast thou

* This scene is graphically described by Isaiah in most sublimely poetic language, when he represents all the chief ones of the earth, and the kings of the nations lying in their sepulchral glory, every one in his own house, and raising themselves from their thrones (or cells) in astonishment at the arrival of the haughty King of Babylon. (Isaiah xiv. 9, 18.)

here? and whom hast thou here, that thou hast hewed thee out a sepulchre here, as he that heweth him out a sepulchre on high, and that graveth an habitation for himself in a rock?"—Is. xxii. 16. This practice was common in Persia and other eastern nations as well as in Judea.

The mouths of the sepulchres were eventually closed by square slabs of stone, fitted into grooves cut expressly for them in the native rock; and so nicely were these fittings adjusted, that when finished the place of entrance was scarcely discernible. Rolled stones were only used as temporary closures. A range of tombs, near Tiberias, constructed by the first inhabitants of Galilee, are of this kind; and in the valley of Jehoshaphat and other rock-bound valleys round Jerusalem there are innumerable specimens of these sepulchral excavations, which give a singular and solemn character to the environs of the Holy City.

The tombs of Neapolis, the ancient Shechem, where Joseph, Joshua and others were buried, are described by modern travellers to be as durable as the hills out of which they are hewn. The marks of the chisel show the almost inconceivable amount of labour bestowed in their construction; and they are as perfect now as at the first hour of their execution, defying the ravages of time, and the spoliation of sacrilegious bands which at various times have become possessors of the country.

The tombs of the poorer classes were generally of stone. They were also far removed from the cities or villages: they occupy a great space of ground, and each family appears to have had an allotted space, which is walled in, like a garden. In some portions of these spaces the graves were all separate and distinct, with upright stones at the head and foot, describing the person and character of the deceased: and the intermediate spots were planted with flowers, or paved with durable and sometimes ornamental tiles. The published drawings of these scenes represent the graves of the wealthy in such situations

as square chambers, with domes or cupolas over them; sometimes entirely closed, but more generally open. In buildings like the last, wretched and houseless outcasts found lodgings, and it was in one of these that the poor maniac was sheltered, "who had his dwelling among the tombs." It was looked upon as an act of piety to repair and paint these cupolas, and indeed the outsides of all tombs, not so much for the sake of beauty, as to render them more conspicuous, and so to prevent the ceremonial defilement by touch: this being especially necessary at great feasts, when crowds of visitors were attracted to the neighbourhood of the tombs. White paint was considered the best preservative against this danger, and the operation was performed every year after the long rains in the spring, which occurred shortly before the Passover. It was upon such an occasion, when every valley and hill-side was glistening with the newly decorated tombs, contrasting disgustingly with the mouldering remains concealed therein, that the anger of our Saviour appears to have been excited against the hypocrisy of the Pharisees, of which the painted outside of the tombs furnished an apt illustration, when He said,—"Woe unto you, scribes and Pharisees, hypocrites! for ye make clean the outside of the cup and the platter but within they are full of extortion and excess. . . Woe unto you, scribes and Pharisees, hypocrites! for ye are like unto whited sepulchres, which indeed appear beautiful outward, but are within full of dead men's bones and all uncleanness."—St. Matthew xxiii. 25—27.

Having now described somewhat discursively the Jewish tombs, I proceed to notice the rites of burial adopted by this interesting people. An examination of both these subjects possesses a value, by throwing light on many passages of Scripture which otherwise appear obscure.

On the approach of death in a Jewish family the nearest relatives drew round and received the last testament, advice, and blessing of the departing spirit. When the vital spark

had fled, the body received the parting kiss—the last farewell and sign of affection. Then the eyes, so lately teeming with brilliant fervour, or melting with the tenderness of love, were closed for ever. Sad—sad moment! the spirit has ebbed away, the memory of past years rushes for an instant in review, and we feel with crushing force the terrible reality of death. Thus "when Jacob had made an end of commanding his sons, he gathered up his feet into the bed, and yielded up the ghost, and was gathered unto his people. And Joseph fell upon his father's face and wept upon him and kissed him. And Joseph commanded his servants the physicians to embalm his father, and the physicians embalmed Israel. And forty days were fulfilled for him, for so are fulfilled the days of those which are embalmed."—Genesis xlix., l.

After the seal of endearment was impressed by the last kiss, the company present rent their clothes, by taking a knife with the blade downward, and cutting the outer garment on the right side. The emblematical ceremony of rending the clothes, I may remark, was invariably performed when any mournful event happened; but on the death of very near relatives all the garments were thus cut on the right side. The face was next bound up and the body washed,—partly to remove all impurities, and partly with the idea that the ointments and spices with which the corpse was anointed, would more easily enter the pores of the skin when opened by warm water. This ablution was looked upon as an act of great charity and devotion, and was properly performed by women: thus Dorcas was in all probability washed by widows and laid in an upper chamber till Peter came. (Acts ix. 59.) Finally the mortal remains were shrouded and swathed with linen cloth, and the head bound round with a napkin. Such according to St. John, were the grave-clothes in which Christ was laid in the tomb.

In the earlier history of the Jews, we find the process

of embalming, according to the custom of the Egyptians, adopted among the higher classes. Jacob and Joseph were mummified; as were also the kings of Judah for many succeeding generations. In the later and more general embalming, however, the bodies were not embowelled; but merely wrapped round with sweet spices and odours, chiefly aloes and myrrh, which would doubtless absorb the moisture from the frail tenement, and in some measure retard decay. The sparing use of spices was thought a misplaced and discreditable economy, and no higher token of respect to the departed could be evinced than the profuse application of costly perfumes. The Talmud alludes to a large amount of spices used for Rabbi Gamaliel, an elder. Josephus, in describing the pompous funeral procession at the burial of King Herod (to which I shall again refer), mentions that five hundred servants attended as spice-bearers. Probably on this occasion a "bed of spices and sweet odours" was made, as in the case of King Asa, described in 1 Chronicles xvi. 14.

After the crucifixion of our Lord, Joseph of Arimathea, and Nicodemus (both men of great consideration and wealthy withal) testified their regard for the sacred body of Christ, by bringing "a mixture of myrrh and aloes about an hundred pound weight," for the purposes of embalming: whilst, unknown to them, the two Marys had also prepared to render the same holy service, when the Sabbath was passed. Now whatever cavils may be made by the Jews as to the waste of so large an amount of precious ointment, for one in the humble circle in which our blessed Saviour deigned to appear amongst mankind, as the despised Nazarene, the son of Joseph the carpenter, this pious offering was no doubt dictated by the profound veneration entertained for His memory, rather than from an ostentatious display; which would not be warranted by any circumstances connected with His previous life or habits. It

should be regarded only as a simple offering of fervent love and strong faith.

Coffins were not generally used; indeed we only find mention made of them in the case of very distinguished persons, as in that of Joseph, of whom it is said "he was put in a coffin in Egypt."—Gen. l. 25. In this instance, however, it may be considered that the customs of the Egyptians might have influenced the children of Israel; more especially as, by his last injunctions, the body was required to be carried to the tombs of his ancestors, which lay at a distance. The insignia of office were buried with the dead,—if a prince, the crown and sceptre; if a warrior, the armour and weapons of offence and defence. The Septuagint informs us that the knives of flint or obsidian used by Joshua to circumcise the Israelites were interred with him; but this account is not met with in the Hebrew version. When not embalmed, the body was laid in the grave within twenty-four hours from the time of death. It is evident that further delay would be inconvenient, owing to the heat of the climate;—moreover, we must bear in mind, that by the Jewish custom, all persons approaching the chamber of death were looked upon as unclean for the period of seven days.

It was customary to watch the sepulchres for three days, for so long the spirit was supposed to hover about them. After that period in hot countries the visage changed, and there was no hope of a return to life. We have an illustration of this in the women going to the tomb of Christ. Lazarus was buried on the day he died. Christ, though he knew of his death, would not go until four days had elapsed, in order to make the miracle the greater. The Jews could have no reason for saying Lazarus was not really dead, which they might have done if Christ had gone during the three days; hence, Martha says, "by this time he stinketh, for he hath been dead four days." It is still customary in the

East, to go to the grave to weep. Mary, when she heard that Jesus was come, went to meet Him; and the Jews said, "She goeth to the grave to weep there."

Here I think we may clear up a difficulty in the case of Lazarus, by remembering what we stated before, that the bodies were placed in niches of rocks or caves. The evangelist says, "Jesus cried with a loud voice, Come forth; and Lazarus came forth, bound hand and foot." The Infidel asks, "How could he come forth out of the grave, if bound hand and foot?" St. John does not say he walked out of the sepulchre, but simply that he sat up; and we infer that he placed his legs over the side of the niche or cell, and sliding down, stood upon the floor, all which he could easily do, though the arms were bound to the body, and the legs tied together by shreds or rollers. When he had come forth in this way, Christ ordered his release: "Loose him and let him go;" which clearly implies that he did not walk out of the sepulchre until he was unbound. And thus, instead of the Scriptures being really contradictory, we find the difficulties exist only in men's ignorance of them, and of the customs of the times, in which they were written.

It will be remembered that Christ was buried in the evening of the day on which he was crucified. Ananias and Sapphira furnish other illustrative cases of the practice. The body was carried in a bed placed on an open bier, usually constructed of plain wooden boards, supported by poles; on this the body lay with a slight coverlet, to ward off the sun's rays, and as a decent veil from public gaze. Such was the humble vehicle used for the son of the poor widow of Nain—Luke i. 7; but the ceremonial procession appears sometimes to have been very costly, and conducted with great magnificence, for Josephus recites in the "Wars of the Jews," Book i. c. 33: "After this they betook themselves to prepare for the king's funeral; and Archelaus omitted nothing of magnificence therein, but brought out

all the royal ornaments, to augment the pomp of the deceased. There was a bier all of gold, embroidered with precious stones, and a purple bed of various contexture with the dead body upon it, covered with purple: and a diadem was put upon his head, and a crown of gold above it, and a sceptre in his right hand; and near to the bier were Herod's sons and a multitude of his kindred; next to whom came his guards, and the regiment of Thracians, the Germans also and Gauls, all accoutred as if they were going to war; but the rest of the army went foremost, armed, and following their captains and officers in a regular manner; after whom five hundred of his domestic servants and freedmen followed with sweet spices in their hands; and the body was carried two hundred furlongs* to Herodium, where he had given order to be buried."

The funeral processions were occasionally preceded by the priests, attended with hired mourners and assistants expressing sorrow, with dishevelled hair, and great noises and lamentations, blowing flutes and pipes, and howling like maniacs. Such was the "tumult" described by St. Mark v., 38, when our Saviour approached the house of Jairus, the ruler of the synagogue, whose daughter was dead. Ceremonies of this kind were confined to the more wealthy classes; though instances are recorded when like honours were paid to poor persons, who were held in more than usual esteem by their friends and neighbours. An affecting case of this kind I have before alluded to—the son of the widow of Nain,—for whom the public sympathy was great; as we find in the simple account that "much people of the city was with her."

Processions of the more common class were not confined to Judea, but existed among many of the Eastern nations; and we learn from Mr. Carne that like customs continue to the present day. "An Arab funeral," this intelligent writer

* Upwards of 27½ English miles.

says, "was attended by about twenty men, friends of the deceased, who advanced from under a row of palm-trees, singing in a mournful tone, and bearing the body of a woman neatly dressed in white, on an open bier, with a small awning of red silk over it."

I have previously stated that each Jewish family, as well as each king, possessed a separate burial place,—which was used by the descendants for many generations. Thus a man was said with great propriety to be "gathered to his fathers." A remarkable contrariety occurred in the fact, that bad kings were not honoured by interment in the royal sepulchres: a denial of burial in such cases was considered a mark of the greatest obloquy. Uzziah, for attempting to usurp the office of the priesthood, an office consecrated to the sons of Aaron, was afflicted with the loathsome disease of leprosy, and compelled to dwell "in a separate house" during the remainder of his reign; nor was he permitted burial with the kings, but "they buried him with his fathers in the field which belonged to the kings; for they said, He is a leper."—2 Chron. xxvi. 23. In like manner, by reason of his great wickedness, "Ahaz slept with his fathers, and they buried him in the city, even in Jerusalem; but they brought him not into the sepulchres of the kings of Israel." —2 Chron. xxviii. 27.

I cannot help thinking that the expression "he slept with his fathers," or "was gathered to his fathers," has a beautiful spiritual meaning attached to it as referring to the soul; for we have just seen that in the cases of Uzziah, Ahaz, and other instances, where the same expression is used, they did not literally sleep with their fathers, as they were not allowed to be buried in the royal tombs of their ancestors. To my own mind there is something sublime in contemplating the souls of their fathers being gathered together.

It is worthy of remark that the veneration and respect for the ancient burying places of the Jews is very great. We are informed by Calmet that in his time synagogues

and oratories were built near the sepulchres of the great men of old, and the prophets; and there the inhabitants went forth to pray. The Rabbins teach that it is not lawful to deface or demolish a tomb, or even to disturb the repose of the dead by burying another corpse in the same grave,—although after a long period; nay more, it is forbidden to carry an aqueduct or highway across the places of sepulchre, or to gather wood there; or even to permit cattle to feed upon the rank grass which springs up over the sacred remains of the dead. Surely we may well blush and learn a lesson here, when we consider the disgraceful state of some of the church-yards of our own time.

I have been led by the great interest which attaches itself to the customs of the Egyptians and Jews, more especially of the latter, as God's elect people, to enter more fully into the subject which forms the basis of my lecture, than is consistent with the time allotted to its delivery. I must, therefore, notice with great briefness the modes of sepulture adopted by the Greeks and Romans, and conclude my present effort with a consideration of the equivalent practices of the early Christians and under the papacy.

In Ancient Greece the original custom observed in the disposal of the dead was inhumation; though burning the bodies was afterwards introduced and largely practised. Inhumation was, however, at all times the more general mode; and it appears to have been an invariable law, that when bodies were committed to their mother earth, they were carried to a distance from the walls of the cities and far from human habitations: whilst the funeral urns containing the ashes of the departed, might be deposited in private houses, and sometimes even in temples dedicated to the gods. It is remarkable that where one practice prevailed, the other was not allowed: thus if urns were deposited in a particular temple, no interments of bodies were sanctioned within, or near the same precincts; even although

claims should be made on behalf of the nearest relatives. It is unquestionable that cremation was at first rare, as the practice was confined to the heads of the government and to those great commanders who had distinguished themselves by some national benefit or to the saviours of their country.

At Athens, Cecrops enjoined that the dead should, on the ground of safety and convenience to the living, be carried beyond the walls of the city. Solon adopted this ancient and wise law, and re-established the regulation in all its vigour. Sophocles found no tombs within the city after it was besieged by the Spartans; and it was only in the last years of the Republic, that a small number of the dead were permitted to remain within the walls, and those were heroes. Cicero records that he was not allowed to bury his friend Marcellus in Athens, after his assassination; the refusal being urged on religious grounds.

Plato condemned the use of fields for burials that were applicable for tillage, and contended that dry and sandy grounds (unfit for other use) should alone be devoted to the purposes of sepulture; an idea perhaps borrowed from Egypt. This ancient sage appears to have entertained the peculiar fancy, that the body remained uncorrupted for the space of twelve days after death, whilst the soul appertaining thereto was viewing the large stations of the dead. Socrates felt little regard for his body, but was content that it should be buried, provided his friends considered that they would thus "not bury Socrates:" solely regarding his immortal part, he was indifferent whether his "cast off trunk" should be burnt or buried. On the other hand, the Greeks, as a nation, appear to have been most anxious that due honours should be paid to their bodies. The Athenians especially often neglected to take advantage of their victories, by reason of this laudable anxiety for the decent interment of their slain; and sometimes even sacrificed victorious generals for their lack of zeal on this head.

Rollin, in his "Ancient History," vol. iii. p. 105, after describing the battle near Arginusæ, observes: "When it was known at Athens that the dead bodies had been left without interment, the people were highly enraged, and laid the whole weight of their resentment upon those, whom they believed guilty of that crime. The ancients held it a great one, not to provide sepulture for the dead; and we may observe, that after all their battles, the first care of the conquered, notwithstanding the sense of their misfortune, and their great affliction for a bloody defeat, was to demand a suspension of arms from the victor, in order to pay the last duties to those who had fallen in battle, upon which they believed their happiness in another life depended. They had little or no idea of the resurrection of the body. However, the Pagans, by their concern for the body after death, the religious regard paid to it, and the passion with which they rendered solemn honours to the dead, seem to have had some confused notions of a resurrection, which subsisted amongst all nations, descended from the most ancient tradition, though they could not clearly decide upon it. Hence arose the fury of the people of Athens."*

Upon this occasion, notwithstanding an eloquent appeal was made by Socrates on behalf of the accused commanders and the opposition of some of the senators, and although the decree was notoriously unjust, six of the victorious generals were condemned, and were put to death for yielding to the impossibility of the case.

I find another passage from this able author,† which bears upon the same subject. Rollin thus describes a funeral scene:—"The first year of the war of Peloponnesus being now elapsed, the Athenians during the winter solemnized public funerals, according to ancient custom; a practice

* An opinion was entertained by some of the ancients that the souls of the departed were not allowed to enter the Elysian fields until the bodies were buried; and that, if never buried, the exclusion extended to a century of years.

† See also Thucydides l. 2, p. 122—130.

truly humane, and expressive of a just gratitude in honour of those who had lost their lives in that campaign; a ceremony they observed during the whole course of that war. For this purpose they set up, three days before, a tent in which the bones of the deceased citizens were exposed, and every person strewed flowers, incense, perfumes, and things of the same kind, upon those remains. They afterwards were put on a kind of chariot, in coffins made of cypress-wood, every tribe having its particular coffin and chariot; but in one of the latter a large empty coffin* was carried, in honour of those whose bodies had not been found. The procession marched with a grave, majestic, and religious pomp; a great number of inhabitants, both citizens and foreigners, assisted at this mournful solemnity. The relations of the deceased officers stood weeping at the sepulchre. These bones were carried to a public monument, in the finest suburb of the city, called Ceramicus; where were buried, in all ages, those who had lost their lives in the field, except the warriors of Marathon; who, to immortalise their rare valour, were interred in the field of battle. Earth was afterwards laid over them, and then one of the citizens of the greatest distinction pronounced their funeral oration * * *. After having paid, in so solemn a manner, this double tribute of tears and applauses, to the memory of those brave soldiers who had sacrificed their lives to defend the liberties of their country, the public, who did not confine their gratitude to empty ceremonies and tears, maintained their widows and all their infant orphans."

Tombs were looked upon by the Greeks with religious awe, and the violation of them was considered a capital offence. Prayers and vows were oftentimes made over them and sacrifices offered; as in the case of Alexander, who prior to the Asiatic war offered sacrifices on the tomb of Achilles. Oaths taken at the tombs were considered equally sacred and binding with those taken before the altars; and to

* Called Cenotaphia.

crown their piety, temples to the gods were frequently erected over them. All those who had wasted their patrimony were debarred from burial in the tombs of their fathers: suicides were interred without religious solemnities; whilst the only persons who were denied sepulture were sacrilegious persons, debtors, and persons convicted of capital offences. Those who were killed by lightning were not admitted within the sacred places, but were buried by themselves, as odious to the gods.

The ancient Romans also practised burning and burial indiscriminately, according to the wish expressed by the deceased, or the will of the survivors: but neither ceremony by the law of the Twelve Tables was allowed within the precincts of a city except in the case of vestal virgins, afterwards relaxed in favour of priests and of those generals who had received the honours of triumph, who alone had that peculiar privilege.* By the terms of this law ("Hominem mortuum in urbe ne sepelito neve urito") it is evident that in the fourth century of the republic, the custom of inhumation or cremation was indifferently chosen. In the frequent wars, however, in which these people were engaged, the remains of the buried dead were not seldom outraged; and it is probable that the detestation and horror inflicted on the living by such desecration, combined with the sagacity of the magistracy in encouraging burning, may have led to that more general practice; although it was for many ages resisted by the patricians, who clung to the more ancient mode.

In the ceremony of burning the dead, the Romans often exhibited a beautiful tribute of affection, by mingling the ashes of those who had loved each other during life. The ashes of Domitian were thus mixed with those of Julia. Achilles' ashes were united with those of his friend

* This flattering distinction soon ceased to become a privilege, for the emperors Adrian and Antoninus Pius renewed the prohibition by enforcing the almost obsolete laws of the Twelve Tables.

Patroclus. Thus effecting a perpetual physical union after death: in life they were as one, and in death they were not divided. This mode of commingling ashes will strike every one as being far more sensible and poetic than dying together by suicide, as sometimes practised by our sentimental continental neighbours.

Tombs were allowed in country residences but forbidden in the city: not even kings were allowed interment within the walls. Numa was, it is true, buried in Mount Janiculum; but at that time this spot lay without the walls: the kings who followed him were deposited in Campus Martius, a vast plain lying between the city and the river Tiber. Cenotaphs were admitted in cities; but these were not true graves; and that custom, which originated in Greece, was without doubt caused by the decease of the individual commemorated occurring at such a distance from home as to preclude the possibility of transmitting his remains. Monuments of this description were also erected to the memory of ancient worthies, without reference to the place of birth: thus the number of cenotaphs raised in honour of the immortal Homer, constituted him a worthy of many countries.

The Romans (like the Greeks) held a great veneration for the tombs of their ancestors or benefactors. These erections were consecrated to the manes of the departed by religious ceremonies, which were held peculiarly sacred. Bodies once inhumed could not be removed unless by special consent of the priests and magistracy: but as the fashion for erecting tombs within the grounds attached to country residences increased, the practice was found to interfere most seriously with the cultivation of lands once devoted to agriculture;—and as difficulties also presented themselves in the sale or subdivision of estates so circumstanced, it was found necessary to interfere; and the magistrates were compelled to restrain the evil, and to forbid further interments in the fields. At the same time the sepulchres of

the most illustrious families were removed and located on the verge of the great public highways when a laudable ambition seemed to prevail to erect mausoleums, that should at once honour the dead and adorn the entrances to the city.

The common people of Rome had also their funeral piles and common sepulchres:* such were the numerous cavities (puticuli) alluded to in history: many were situated on the Esquiline Hill, and they contained a large number of dead bodies; which doubtless would emit offensive odours around. The places where they buried the dead were termed *ustrinæ*. Ambitious citizens who wished to ingratiate themselves with the people, were wont to give grounds to be dedicated to plebeian usage. The tombs and funeral rites of eminent persons were paid for out of the public funds, and the poorer classes obtained the same favour from the pious liberality of the various Pontiffs.

The practice of burning the dead probably ceased in the reign of the Emperor Gratianus. "The early Christians," observes Sir Thomas Browne, "abhorred this way of obsequies, and though they stickled not to give their bodies to be burned in their lives, detested that mode after death; affecting rather a depositure than absumption, and properly submitting unto the sentence of God, to return not unto ashes, but unto dust again, conformably unto the practice of the patriarchs, the interment of our Saviour, of Peter, Paul, and the ancient martyrs; and so far at least from declining promiscuous interment with pagans, that some have suffered ecclesiastical censures for making no scruples thereof."—Hydriotaphia, cap. 1.

It is natural to suppose that the early Christians derived inhumation from the Jews, whose laws served as a rule in all points not objectionable in respect of particular sanctification or belief: burning, moreover, may have been objected to, as savouring of pagan rites. Poverty may have offered a somewhat powerful plea in favour of burial. Ter-

* Hoc miseræ plebi stabat commune sepulchrum.—Hor. lib. 1, sat. 8.

tullian offers also another argument in its favour, viz., the soul was believed to remain in or near the body, and hence would arise the desire to preserve the precious remains. Cremation certainly decreased with the spread of Christianity, which eventually extinguished the sepulchral bonfires, although serious difficulties long obstructed the performance of the last sacred rites.

During the persecution of Nero the loss of life among the followers of Jesus was fearful, and great peril was experienced whilst rescuing the dead from the fury of the populace. Under such untoward circumstances, it is not surprising that the bodies were often kept long concealed in houses, and eventually buried under the deep shadow of night in the catacombs, which were deep pits or excavations in the neighbourhood of Rome. These places have been described as very loathsome. Jerome says, the black darkness there reminded him of hell, and verified the expression of the Psalmist,—"Descendit in infernum vivens." Doubtless such stolen nocturnal ceremonies, amid the fitful gleams of torches, and the subdued wailings for the holy martyrs, must have been fearfully solemn and appalling.

As time effected a change of feeling toward the new sect, we find the early Christians decorating their tombs,—not, however, after the manner of ancient nations, which sometimes even "drew provocations of wrath from Anatomies," but (in the quaint language of Browne,) "The cemetrial cells of ancient Christians and martyrs were filled with draughts of Scripture stories; not declining the flourishes of cypress, palms, and olive; and the mystical figures of peacocks, doves, and cocks; but iterately affecting the portraits of Enoch, Lazarus, Jonas, and the vision of Ezekiel, as hopeful draughts, and hinting imagery of the resurrection; which is the life of the grave, and sweetens our habitations in the land of moles and pismires." And thus, as Christian doctrines gained ground, and the rich and noble embraced the faith of Jesus, many patricians and pious ladies

gave riches to endow lands appropriate for Christian burial grounds; more than forty of which were established in the environs of Rome. These were called cemeteries, from a Greek word, *κοιμητηριον* which may be translated a place wherein to sleep: thus they were no longer termed "catacombs" nor "necropolis." Christianity altered the aspect of death, while it conferred a more befitting name to the *domus defuncti*.

Great care was evinced in keeping the bodies of martyrs separate from the more vulgar dead, as worthy of peculiar sanctity; and as the Jews raised their synagogues, and the Greeks their temples in the vicinage of their celebrated dead, so Christians often raised altars over the canonized remains of saints and martyrs. To these piously endowed fanes, it was customary to retire to pay honour to the departed, and to perform the rites of religion, under the impression that some peculiar emanations from the bodies of saints, were capable of warming the hearts of the faithful, and increasing the fervour and piety of their devotion. It must be remembered, therefore, that grave-yards were not originally brought to churches, but, on the contrary, churches sprung up in grave-yards. Both customs, however, are to be condemned as detrimental alike to health and propriety, and could be tolerated only, under the peculiar circumstances attending the ancient position of the early Christians. At the present day, we reverse the ancient plan, by consecrating ground for burial; whereas they considered that burial consecrated the ground for worship; believing that the burial of Christ consecrated the whole earth, and so rendered it a fitting depositary for the ashes of the saints.

At length persecution ceased, and Constantine the Emperor embraced Christianity. There was now peace. Idolatrous temples were purified and dedicated to the true God. Altars on which holy mysteries had been celebrated in obscure cemeteries and catacombs were removed with great

pomp into the cities; the tombs of martyrs occupied the places erst dedicated to profane divinities, and Christian saints were adored instead of heathen heroes. Interments around churches soon began to prevail; all were desirous to be buried near those, whose memories were venerated, and even to occupy the very places where prayers were offered to God. Martyrs alone, however, were allowed to be buried within the hallowed precincts of churches; these were considered victims to the faith, and were deposited near, or immediately under the very altars at which the holy sacrament was offered,—thus contributing to the introduction of a kind of man-worship in the very presence of the Almighty. As yet, however, no other cases of intro-fanal interment were permitted: neither priests, bishops, princes, nor popes, had that honour conferred upon them, unless distinguished for piety and zeal of the highest degree, and thus rendered worthy of sanctification.

On the death of Constantine, the Church, from motives of gratitude, allowed his body to be deposited within the vestibule of the Temple of the Holy Apostles, which he had himself built and endowed. This act was looked upon as a remarkable testimony of honour and distinction; and St. Chrysostom, in order to impress on the faithful, the full extent and importance of this rare privilege, states (Hom. 26 in 2 Epist. Cor.) that "the greatest prince of the earth regarded it as a new lustre to his supreme dignity." Successors of the emperor, as a matter of course, obtained like honour; but it was long reserved for those powerful princes who proved to be bold and uncompromising protectors of the Church. Eventually benefactors who granted valuable rights, privileges, or monies to the Church, were buried within its walls, and, to crown all, bishops, priests, and even pagans.

General sepulture, however, long continued without the city; comparatively few of the population were admitted within the walls. But even this prohibition gradually died

away. Common tombs were by degrees allowed in porches, alongside the walls, and near the body of the churches, but not within the walls, so as to mix the bodies of the profane with those of martyrs and saints. *Odi profanum vulgus.* As the custom long continued by which the relatives of deceased persons offered prayers at their tombs, it became necessary to protect the neophyte from the inclemency of the weather: this gave rise to the introduction of vestibules and porches outside churches, and, after awhile to chapel tombs, and chantries; which in process of time became attached to the churches themselves (as in Henry VIIth's chapel in Westminster Abbey) and the tombs therein, became as altars. In like manner St. Augustin, the Apostle of England, was buried beneath the portico of the cathedral of which he was the head. His successors in the See of Canterbury obtained the same privilege, until at length no further room for tombs within the portico remaining, it was considered necessary to place them within the body of the church itself.* Many attempts were made to resist these innovations,—among others the famous Theodosian code was promulgated, and for some time its rigid articles continued to be respected; but long prior to the pontificate of Gregory the Great this prohibition ceased to restrain the encroachments of the rich and powerful, until at last the prevalent custom overthrew the established law, and "The prerogative which was originally reserved for emperors became the portion of the lowest class of citizens; and that, which at first was a distinction, became a right common to every one."—Walker, p. 52.

I do not propose on this occasion to inquire into subsequent details of intramural burials. The subject is fraught with interest; and the evils are patent to all. In preparing this imperfect brochure, I have simply aimed at a brief historical detail of the modes of sepulture adopted by various nations, as an introduction to a far more important question, which

* Bede Hist., l. 2, c. 3.

naturally obtrudes upon the attention, viz.,—with due regard to the religious and moral feelings of the living, how shall we most consistently act when interfering with ancient practices, which I have shown to be usurpations in the face of all law and propriety, and which are reluctantly allowed solely on the rights of user,—practices which are pernicious and deadly in their effects—repugnant even in the custom that upholds them, and which in this enlightened age cannot be allowed to continue as blots upon our national character? * * If I have succeeded in arousing your attention to this important subject my present aim is attained. I will not detain you longer, but reserve the remainder of my remarks for the commencement of the next lecture; reminding you in the words of a writer to whose researches I have already been much indebted, that "Life is a pure flame, and we live by an invisible sun within us. A small fire sufficeth for life, great flames seemed too little after death, while men vainly affected precious pyres, and to burn like Sardanapalus; but the wisdom of funeral laws found the folly of prodigal blazes, and reduced undoing fires unto the rule of sober obsequies; wherein few could be so mean as not to provide wood, pitch, a mourner, and an urn."—Sir T. Browne. * * I conclude with a few verses from Eliza Cook, which I think are exquisitely beautiful, which express my own sentiments, and are not inappropriate to the subject we have been discussing. * * *

"MY GRAVE.

"Sweet is the ocean grave, under the azure wave,
Where the rich coral the sea-grot illumes;
Where pearls and amber meet, decking the winding-sheet,
Making the sailor's the brightest of tombs.

"Let the proud soldier rest, wrapt in his gory vest,
Where he may happen to fall on his shield:
To sink in the glory-strife, was his first hope in life;
Dig him his grave on the red battle-field.

" Lay the one great and rich, in the strong cloister niche,
Give him his coffin of cedar and gold;
Let the wild torchlight fall, floating the velvet pall,
Lock him in marble vault, darksome and cold.

" But there's a sunny hill, fondly remembered still,
Crowned with fair grass and a bonnie elm-tree;
Fresh as the foamy surf, sacred as churchyard turf,
There be the resting-place chosen by me!

" There the wind loud and strong, whistles its winter song,
Shrill in its wailing and fierce in its sweep;
'Tis music now sweet and dear, loved by my soul and ear;
Let it breathe on where I sleep the last sleep.

" There in summer days, rest the bright flashing rays,
There spring the wild flowers—fair as can be;
Daisy and pimpernel, lily and cowslip bell,
These be the grave flowers chosen by me.

" There would I lie alone, marked by no sculptured stone;
Few will regret when my spirit departs;
And I loathe the vain charnel fame, praising an empty name,
Dear, after all, but to two or three hearts.

" Who does not turn and laugh at the false epitaph,
Painting man spotless and pure as the dove?
If aught of goodly worth, grace my career on earth,
All that I need is its record above.

" 'Tis on that sunny hill, fondly remembered still,
Where my young footsteps climbed, happy and free:
Fresh as the foamy surf, sacred as churchyard turf
There be the sleeping place chosen by me."

December, 1852.

NOTE.—Amid the vast stores of interesting information which accumulated as the author approached modern times, he appears to have found some difficulty in determining at what historical era the foregoing, as an introductory lecture should terminate. The period chosen seems appropriate, inasmuch as the custom of intro-fanal and intro-mural interment, which had become general in the pontificate of Gregory, continued unabated to later times, the baneful effects of which would properly have been treated in the intended sequential lecture.

POETICAL REMAINS.

POETICAL REMAINS.

HYMN ON THE SECOND ADVENT.

Ye saints, now lift your heads with joy,
For your redemption draweth nigh,
Now drive away all fears,
For riding on the fleecy clouds,
Surrounded by angelic crowds,
Your saviour Christ appears!

Lo! Abram, Isaac, Jacob, stand,
With saints of every age and land,
The glittering throne around!
Where sits the "Man of Sorrows," who
Endured a shameful death, that you
Might be with glory crown'd.

Now gloomy fears the lost appal,
On rocks and mountains, lo! they call
To hide them from His face.
In vain they try to 'scape His ire,
The lake of never-ending fire
Is now their dwelling place.

The little flock despised on earth
Now glory with exceeding mirth,
For all their grief is o'er;
Glad Hallelujahs now they sing
To Christ, their captain and their king,
On high, for evermore.

July 22nd, 1838.

A METAPHOR.

What is the world? A pane of glass that meets the sola rays.
And what mankind? The little flies that in the sunshine play.
And what is death? A little child that enviously doth gaze
And one by one destroys the flies, when they have lived a day.

June 1st, 1838.

ON THE DEATH OF THE REV. R. S. Mc'ALL IN THE PRIME OF LIFE, July 27th, 1838.

God demanded "Yield thy spirit;"
He His Master's call obeyed,
Earth he left but to inherit
Mansions not by mortals made.
Christ he trusted,
And of death was not afraid.

Jesus gave him consolation,
Old in grace if not in years;
Now he's free from tribulation,
Faith no longer strives with fears.
Rays of glory
Gild th' eternal crown he wears.

He hath left us. Weep not o'er him,
Though he sleepeth in the tomb;
Christ passed through death's vale before him
And He robbed it of its gloom.
He's but gone then
With his Lord in Heaven to bloom.

Mourn not ye, who've lost your pastor,
God can bid another rise,
Leave it to your Heavenly Master,
He is merciful and wise;
Though He may be
Veiled in mystery to our eyes.

Let us only trust in Jesus,
On Him all our burdens cast;
He in every grief will ease us,
He will bring us home at last.
We shall meet Him
When our pilgrimage is past.

THE MISER'S CAREER.

I saw him in his infancy,
He was serenely fair;
His azure eyes were sparkling bright,
His features glistened with delight,
And smiles were playing there!
I thought 'twas pity one so fair
Should breathe this atmosphere of care.

I saw him in his schoolboy days
Inhaling classic lore;
His mind expanded as a sail,
When gently blows the western gale,
The world seemed spangled o'er.
'Twas but the sunny-side of life
As yet he saw, without its strife.

I saw him next on manhood's verge,
His brow bore signs of care.
He'd met a fair one, and had loved,
But she a source of woe had proved,
And planted wrinkles there.
'Tis sad that woman, sent to bless,
Should e'er destroy man's happiness.

I saw him next in middle life,
His hair was turning grey;
His noble powers of mind were sold
To that peace-killing demon, *Gold;*
That king of mighty sway.
How base! for life and time were given
But to prepare mankind for Heaven.

I saw him in advancing age,
His face was furrowed o'er,
He now 'twas plainly to be seen,
Was but the wreck of what had been,
And never could be more.
His life was wasted; gold was gained,
But peace of mind was not obtained.

I saw him on his death-bed,
And there I heard him cry,
Oh! God, thou sin-avenging God!
I know a sinner's path I've trod,
And *cannot, will not* die.
I *dare* not die! again he said,
But, lo! I turned, and he was dead.

I saw him in his coffin,
And a shudder o'er me passed,
While gazing on his visage, where
Imprinted was the dire despair
In which he breathed his last

My God! I said, oh! may not I
A miser *live*,—a miser *die!*

July 27th, 1838.

MISSIONARY HYMN.

CHRISTIAN! whoe'er thou art,
I now appeal to thee,
To aid this cause, with hand and heart,
And set Sin's captives free.
Six hundred millions!* Hear their cry
For help, e'er they in darkness die.

Throughout the land doth sound
The cry of heathen souls;
'Tis wafted o'er from sun-scorch'd ground,
And from the frigid poles,
Where men in pagan darkness dwell,
And march in ignorance to hell.†

Oh! recollect the love
Which brought the Saviour down,
From His high throne in Heav'n above,
That man might share His crown.
And if for this, thou lov'st Him true
Thou'lt love thy heathen brethren too.

'Twas Christ's command to teach
All nations of His name,
And in the distant isles to preach
That He for sinners came.
So now fulfil thy Lord's command,
And send His word to heathen land!

* It is estimated there are 600,000,000 of mankind who have never heard the Gospel.

† By hell here is meant "ἅδης" or the grave.

Oh! haste the glorious time
When every voice shall own,
In every land, in every clime,
That Christ is King alone.
And in that happy day of rest,
The heathen souls may call thee blest.

September 8th, 1838.

CHRISTMAS CAROL.

Welcome Christmas! we have reason
To rejoice at thy return;
For 'twas at this happy season
That our Saviour Christ was born:
Born among us,
Satan's throne to overturn.

Then it was that shepherds tending
In the fields their flocks by night,
Saw God's messenger descending,
'Rayed in glorious robes of light,
To inform them
God would save them by His might.

Eastern sages then saw burning
In the skies a glittering star;
And the welcome sign discerning,
Came to worship from afar,
Bringing with them
Gold, and frankincense, and myrrh.

Onward came the meteor flaming
Till in Heaven's blue arch it stood,
Rays of dazzling glory streaming
O'er a stable low and rude:
There lay Jesus
Where the oxen ate their food.

Oh! then let us praise the Saviour,
Him who left His throne on high,
And to gain for us, God's favor,
Came to earth to bleed and die.
Sound His praises,
Oh! ye heavens, and earth, and sky.

November 27th, 1838.

REFLECTIONS

ON SEEING A SKULL IN WHICH A PORTION OF THE BRAIN STILL REMAINED.

My God! and is it so? and must it be
That worms will similarly feed on me?
"Lord, what is man?" well might the Psalmist say,
For see how soon his beauty fades away.
Corruption's seeds lie lurking in his frame,
And soon he turns to dust, whence first he came.
In contemplating this a humbling thought,
Yet ne'ertheless with deep instruction fraught,
Darts, as an arrow flies before the wind,
Into the deep recesses of the mind.
Although this head now uttereth not a word,
Methinks a voice of warning may be heard.
It seems to say, "What I am thou wilt be,
"Thus in the tomb thou wilt 'Corruption see;'
"So recollect, on earth alone are given
"The title-deeds to homes with God in heaven.
"And see thou workest while 'tis called to-day,
"Oh! keep thy footsteps in the narrow way,
"That, when th' ethereal occupant has fled
"From its clay tenement, and with the dead
"Thou 'rt numbered, thine unfettered soul may soar
"To the land where peace doth reign for evermore."

Perchance this was the head of one whose mind
Soared on the wings of science unconfined,
Which could control the vivid lightning's car,
And tell the distance of each twinkling star.
Mayhap the head of one, whose life was spent
In turning sinners from their evil bent;
Or preaching to the world God's holy Word
And the glad tidings of a risen Lord.
Perchance 'twas lovely woman's, who by God
Was sent to cheer man on his dreary road;
To love him dearly, and afford relief
Whene'er oppressed by care, or toil, or grief.
But whosoe'er it may have been, 'tis plain
It once a living spirit did contain.
Where is it now? Hath it, too, passed to nought?
Oh no! my soul, forbid the atheist thought!
The mind God's image bears; it cannot die,
But will, like Him, live through eternity.
Where is it now? Let that vast problem sound
From earth's extremest verge to ocean's bound.
Oh! let that question to the heavens arise,
And to the deep vaults sink where death ne'er dies.
For in the heavenly realms,—or else in hell,
That spirit doth, and will for ever, dwell.
Oh, what a tale that spirit would unfold,
Could it re-vivify its earthly mould!
'Twould tell how throbbed the pulse and beat the heart,
When life just flicker'd, ready to depart;
'Twould tell the conflict of the ceasing breath,
When plain it felt the chilly grasp of death.
And ah! 'twould tell how, borne on angels' wings,
It bade adieu to sublunary things,
And, as an uncaged bird with swiftness flies,
It winged its way beyond the azure skies.
'Twould tell how next the heavenly gates were gained,
(The point so long desired at length attained);

As through the boundless heav'ns was heard to sound
Th' triumphant shout of those who stood around
Their glorified Redeemer's brilliant throne,
"Here Christ, who vanquished death, is God alone!"
'Twould tell the bliss of souls without alloy,
Where all is holiness, and peace, and joy.
Or else 'twould tell, oh! greatest depth of woe,
How, by Satanic grasp, 'twas dragged below
To the dark regions of eternal woe.
'Twould tell th' infernal shout, the fiendish yell,
That echo'd 'mid the vaulted roofs of hell,
As it approached the dismal spot, where cries
Of spirits, damned t'eternal mis'ry, rise.
How, as their groans the sulph'rous air did rend,
The never-dying fires were seen t' ascend;
'Twould tell the pain, as the remorseless flame,
Dried up the marrow of his tortur'd frame.
'Twould tell the stings of conscience, too, how they
Gnawed at his vitals, yet ne'er showed decay.
'Twould tell—but cease, my pen! oh, cease to show
The harrowing pains of that abyss of woe!
God grant me so to live, that when I die
My soul may to the heav'nly regions fly,
Where in His presence saints for ever rest,
For ever perfect, and for ever blest.

October 10*th*, 1838.

AFTER EVENING SERVICE.

AT IRONBRIDGE.

I REPAIRED to the temple of God,
On the Lord's holy sabbath at e'en,
And near me a fond mother stood,
In whose arms a sweet babe might be seen.

Fast locked in maternal embrace,
He slumbered in tranquil repose,
Unconscious that this was the place
Where Jehovah His blessing bestows.

But when we arose—all to sing
Of the reign of our Saviour and Lord,
When all shall acknowledge Him King,
And His name by all lands be adored.

The infant awoke; from his eyes
Rays of purest delight seemed to beam,
And he rais'd his sweet innocent voice
To join in the Heavenly theme.

Nought—nought could he know of the hymn,
And yet he withheld not his voice,
But joined in the praises of Him
In whose kingdom e'en infants rejoice.

And who says the voice was not heard
Which the infant was found to upraise?
For "from babes" we are told in His Word
The Saviour hath "perfected praise."

April 19*th*, 1839.

THE BIBLE.

All men who live without the light
The Bible doth contain,
Are like a vessel in the night
Upon the watery main.

Their compass lost, they cannot tell
Or how or where they go;
The vessel leaks; the surges swell;
A hurricane doth blow:

And lo! the foaming billows rise
O'er hidden rocks beneath;
And, as fell darkness shrouds the skies,
Their course is certain death.

But with the Bible, they can guide
Their vessel o'er the main;
It teaches how to stem the tide
And dare the hurricane.

For though the dusky clouds of night
Obscure the face of Heaven,
That beacon sheds abundant light,
'Twas for this purpose given.

'Twill plainly shew them how t'avoid
The fatal rocks that lie
Beneath the surface; and to glide
In perfect safety by.

'T will show them, also, how at last
To reach glad Canaan's shore,
Where every danger will be past,
And every trouble o'er.

For lo! 't was sent by God the Lord,
Whom even devils fear;
And He will ever bless His Word,
If read with constant prayer.

May 13*th*, 1839.

THE FICKLE FAIR ONE.

They say that Fortune's fickle, and plays tricks with honest men,
They say the weather's fickle, for that sunshine turns to rain;
But if ye would see fickleness, go, look, and you will prove
That fickleness aboundeth most in fickle woman's love.

The wheels of time have scarcely yet their annual circuit gone,
Since I a little maiden met, whose eyes with lustre shone;
Her form was nymph-like, dark her hair, and sweet her smiling face,
And fairies might have envied her, that captivating grace.

I loved, and though we made no vows; yet heart-created sighs,
And tender grasps, and looks of love from her bright sparkling eyes,
In silent language said the love that in my bosom burned,
Like moonlight to the sun, would by this maiden be returned.

We parted; and a second year has scarcely yet begun,
When lo! her love has vanished like the dew before the sun;
Cold as her heart, is now her grasp; her lips of ruby move
In harsh, repulsive accents, how unlike the tones of love!

Then shall I love her still, and mourn that I be thus repaid?
Oh, no! Friend Pride will help me to despise the little maid:
And as her heart's affections in a single twelve-months cease,
Some other wight may take them on another yearly lease.

August 8th, 1839.

SUGGESTED BY MY BROTHER'S FIRST VOYAGE.

Farewell! a long but kind farewell!
Though tempests blow and surges swell,
God rules the seas.
The billows, rage they as they may,
Bow their proud heads beneath His sway,
Yea, e'en the stormy winds obey:
He gives the word, and His command
Ocean nor can nor dares withstand;
So all is peace.

Time was, when in the days of yore,
The sea of Galilee once bore
A little ship;
And, e'er the ship the sea had crossed,
A storm arose, and tempest-tossed
The sailors feared their bark was lost.
But lo! the sea could not o'erwhelm
A ship with Jesus at the helm,
Although asleep.

And He who once rebuked the waves
Of Galilee's proud sea, now saves
His servants all.
"I'll never leave thee," once He said,
So, though in Heavenly glory clad,
In Omnipresence still arrayed,
He speaks—and yet the waters hear,
Abashed they shrink, appalled by fear,
And prostrate fall.

Then go, and God go with thee too!
When every land-streak fails the view
And disappears.
When nought is seen except the sea
Blending with th' azure canopy,
Then think how vain earth's treasures be.
How, like the land, they e'er recede
When most experienced is their need,
How fraught with tears!

And when thou gazest on the deep,
While moon and stars their vigils keep
So silently;
Remember that God's mercy is
Deep as that fathomless abyss:
Then bid all fears and doubtings cease,
Breathe forth a sigh to Him in prayer,
Thy sins confess, thy wants declare,
August 20th, 1840. And He'll reply.

A PRAYER.

JESUS, Master! hear our prayer,
While to Thy mercy-seat we cry,
Our sins confess, our wants declare,
Saviour! help us or we die.

Asleep and dead, we nothing know:
Blinded by sin we've gone astray;
But suppliant at Thy feet we bow,
Imploring Thee to guide our way.

We sought for happiness below
But, Lord, our search was ever vain;
Our joys have given birth to woe,
Our pleasures all have turned to pain.

Then to our prayer, O Lord, attend,
Renew and sanctify each heart;
Thy Holy Spirit bid descend,
His dove-like influence to impart.

Then shall we have a holy peace,
A peace that knoweth no decay,
Which bids all cares and troubles cease,
Which earth ne'er gave, nor takes away.

December 21*st*, 1840.

AN INCIDENT.

THE air was cold, 'twas very cold, 'twas freezing most severe,
The eastern wind was howling, and the night was drawing near,
When, in a neighb'ring town, did I with pitying eyes behold
A houseless, friendless, wandering boy, all shivering in the cold.

I watched his steps; before a baker's door I saw him stand,
And, holding up a half-penny, the last one in his hand,
He said, "With cold and hunger I am very nearly dead,
"Oh! can you for a half-penny afford a bit of bread?"

The baker scowled upon him, when he saw his humble dress,
(For sterling worth, if clothed in rags, is looked upon amiss)
And, thinking him a beggar, would not list his plaintive strain,
But sternly bade him go away, nor trouble him again.

The boy at first seemed daunted, but at length again he said,
"Then can't you, for a half-penny, afford a bit of bread?"
The baker looked about him, when he heard his earnest tone,
Found him a crust, received his coin, and bade him soon be gone.

He left; again I watched him, as he slowly paced along,
Eating his bread with eagerness, unnoticed by the throng.
I followed, and addressed him thus, "My boy, pray let me know
"Both who you are, and what you are, and whither now you go?"

"Kind Sir," he said, "at Maidenhead, near London, I was born;
"My parents both, while I was young, by death were from me torn;
"No kind relation have I now; no friend is there for me
"Except a brother, far away upon the deep blue sea.

"The trade is bad at Maidenhead, no work could I procure;
"And oh! I did not like to beg my bread from door to door;
"My steps are bent to Liverpool, and though half-fed and cold,
"I hope, ere many days are past, that town I may behold.

"And should I not employment meet, across the stormy main
"My brother's ship will shortly reach Great Britain's isle again.
"I'll try to join the vessel, and my brother's food to halve;
"For though 'tis hard to leave one's home, 'tis harder still to starve."

I then relieved his wants, and as he vanished from my sight,
I said, "My God, protect this little trav'ller through the night;
"And turn men's hearts:—for once Thou said'st, 'all things for food are Thine,'
"But man, by his oppressive laws, subverted Thy design."

12*th July*, 1841.

WHAT IS PLEASURE?

Oh! ye wise in worldly things,
Tell me whence true pleasure springs?
Name the soil wherein it grows,
Tell the fountain whence it flows?

Dwells it in the foaming bowl,
Whose influence stupefies the soul,
Drowns the powers that God hath given,
Unfits for earth, unfits for heaven?

Or is it found in science' maze,
In worldly wisdom's devious ways?
Do these bring comfort to the heart
When trials come, and hopes depart?

Or is it found in heaps of gold,
Which one—the wisest man of old—
Declared, when gained, would flee away,
Leaving regret and sore dismay?

Or is it in the garland found,
That binds the warrior's brow around?
Doth earthly honour bring relief
To souls oppressed with woe and grief?

No! pleasure is a plant from heaven,
Which to the good alone is given.
In worldy minds it bloometh not,
For pleasure's peace, and peace is—what?

A God in Jesus reconciled,
Adoption as Jehovah's child,
A conscience clear, hopes fixed above,
An eye of faith, a life of love.

This is pleasure, this is joy,
This is bliss that cannot cloy;
For "Wisdom's paths are paths of peace,
"And all her ways are pleasantness."

October 20th, 1840.

HYMN ON THE TRINITY.

Let heathen worshippers adore
The idols that their hands have made;
Or worldlings bow themselves before
Earth's tinselled trash and vain parade:

Let visionaries seek for bliss
In paths where bliss is never known;
My soul can rest on nothing less
Than God, th' eternal "Three in One:"

The Father, who my spirit chose,
The Son, whose life for me was given,
The Holy Ghost, whose guidance shows
The devious path from earth to heaven.

Oh! am I weak? Omnipotence
Doth to the Father's arm belong;
This for a buckler and defence
Can make the weakest sinner strong

Or am I vile? Then Jesu's blood
Can purify sin's darkest stain,
Were I by nature pure and good,
The Saviour would have died in vain:

Or am I blind? the Spirit's light
A heavenly influence can impart,
Restoring to the blind their sight,
And melting e'en the hardest heart.

Then oh! my soul thy raptures raise
To Heaven thy great Creator's throne,
Ascribe dominion, power, and praise,
To God, th' Eternal "Three in One."

November 14*th*, 1841.

LINES

SUGGESTED BY THE DEATH OF M. A. LOWE.

"The damsel is not dead, but sleepeth."—Mark v., 39.

WHY grieve thee that the spirit's fled?
Why mourn ye o'er the lowly bed
Where we consigned the much-loved maid,
Whom earth so safely keepeth?
For why did Jesus die, then rise
From death's cold grasp beyond the skies?
Ask—and the sullen grave replies
"She is not dead, but sleepeth."

The gloomy king of terrors now
Lies, 'mid his hell-leagued host below,
Prostrate and weak—a conquered foe—
No laurels hence he reapeth.
An anti-chamber is the grave
Where mortals their corruption leave,
Heaven's robes put on, their crowns receive,
"She is not dead, but sleepeth."

Then wherefore do I hear the sound
Of loud lament from all around?
Say, why these bitter tears abound,
And why the parent weepeth?
Methinks, as o'er this grave we sigh,
I hear e'en angels asking why?
Then Heaven's full choir with shouts reply:
"She is not dead, but sleepeth."

April 17*th*, 1841.

AN EPITAPH FOR MY GRANDFATHER.

Tread lightly, reader, drop a silent tear,
Know that the very dust is sacred here.
The spot is holy, for beneath this stone
Lies in his narrow cell, mute, cold, and lone,
A man of God. For eighty years and more
The cumbrous garment of the flesh he wore,
And, like his Master when on earth, his food
Was daily seeking to do all men good;
Relieving those by temporal want oppressed,
Or speaking comfort to the mind distressed;
Teaching the young Religion's holy path,
Or warning sinners from eternal wrath.
His life the breath of virulence defied,
At peace with man he lived,—at peace with God he died.

February 20*th*, 1843.

A NEW VERSION OF THE XXIII PSALM.*

The Lord's my shepherd, kind and good,
No blessing can I need;
In pastures green, with heavenly food,
He doth my spirit feed.

Where quiet streams their waters roll
I lay me down in peace;
And should it wander, He my soul
Brings back to righteousness.

When marching through Death's gloomy vale,
No evil will I fear;
Thy rod and staff can never fail,
And they are with me there.

My table Thou dost richly spread
Mine enemies before;
With holy oil mak'st fat my head
'Till Mercy's cup runs o'er.

And as Thy love, I know full well,
Will all my life attend;
I, in Thy Courts, O Lord, will dwell
Until that life shall end.

November 20th, 1843.

TO MY GRANDFATHER IN HIS GRAVE.

Thou art gone to thy rest; but we sorrow not o'er thee,
Though cold is thy chamber, and lowly thy bed;
The Saviour hath died, and His death shed a glory,
Which still lighteth up the domains of the dead.

*This version will be found nearly literal with the text and marginal readings.

Thou art gone to thy rest; though earth's tempests be
howling,
Their wild din and clatter above thee abound;
Though storms be descending, and thunders be growling,
Thy sleep is serene and thy slumber profound.

Sleep on then, and rest thee; we know while thou'rt sleeping
Amid the grave's darkness, the sepulchre's gloom,
Thou art not forsaken; for seraphs are keeping
Their vigils in silence around thy lone tomb.

Sleep on then, tho' soon from thy sleep thou must waken,
The morn is approaching,—the glorious morn,
When the trumpet shall sound, and earth's pillars be shaken,
And Death's iron fetters asunder be torn.

Then—then shall we see thee to Heaven ascending,
With glittering robes in the place of thy shroud,
And thousands of bright burning spirits attending,
A happy and holy, and glorious crowd.

May thy mantle descend upon those left behind thee!
Thy zeal for the Master, thy pureness of heart;
That we in the glorified number may find thee,
Never more to be sorrowful,—never to part!
November 26*th*, 1843.

SONG.

We've tasted misfortune together,
We've loved both in joy and in grief,
And though dark storms around us may gather,
Yet storms from their nature are brief.
Our youth is o'erclouded by sorrow,
That season when others are gay;
But we'll wait for the dawn of the morrow
To chase every trouble away:

And we'll prove that adversity never
Wore robes of so sombre a hue,
As to break plighted vows, or to sever
Two hearts that are faithful and true.

Look around; see the landscape before us
All lovely, and smiling, and fair;
Then gaze on the firmament o'er us;
What beauty and glory are there!
Shall it be then, while joy and while gladness
Are beaming through earth, air, and sky,
That we shall be pining in sadness?
Ah, no! on Hope's pinions we'll fly,
And we'll prove that adversity never
Wore robes of so sombre a hue,
As to break plighted vows, or to sever
Two hearts that are faithful and true.

When life's dark horizon shall brighten,
No longer with shadows o'ercast;
This thought shall our happiness heighten,
(For trials are pleasant when past,)
That though tasting misfortune together,
We loved both in joy and in grief,
And the storms that around us did gather
Though darksome were fleeting and brief;
And we proved that adversity never
Wore robes of so sombre a hue,
As to break plighted vows, or to sever
Two hearts that are faithful and true.

April 8th, 1844.

ON SEEING MISS B—— DURING HER LAST ILLNESS.

Farewell! thy path is dark and dreary,
A gloomy valley thou must cross;
But there is One who will be near thee
Should storms descend or tempests toss.

Farewell! we fondly hoped to keep thee
Our pilgrimage below to cheer:
But 'tis decreed; we may but weep thee
While scattering flowers upon thy bier.

Farewell! Death, like a raging billow,
Sweeps o'er thy form so young and fair;
Cold earth must henceforth be thy pillow,
A shroud the garment thou must wear.

Farewell! life here thy God refuses,
Yet still one comfort doth remain;
We know, while earth a fairy loses,
The Heavens another angel gain.

October 27th, 1844.

THE SONG OF CONSUMPTION,

SUGGESTED BY THE DEATH OF MY BROTHER HENRY.

Consumption's my name! I'm a monarch! although
My footstep is noiseless and sly;
When I strike, old and young both acknowledge the blow,
For a terrible monarch am I.

My banner's emblazoned with coffins and shrouds,
My crest is a skeleton bare,
My trophies are pale livid corses, in crowds
Of the young, and the blooming, and fair.

I ride on the breath of the calm, dewy eve,
When lovers roam forth with delight,
And I smile at the gossamer schemes that they weave,
And the hopes I shall speedily blight.

The ball-room I frequent; I whirl in the dance
Its quadrilles and its waltzes among;
But little I'm seen as I slyly advance
Amid its gay, glittering throng.

With the pious, the well-crowded church I attend,
And I list to the prayers of their hearts;
My course through its porches I silently wend,
With my quiver all laden with darts.

My appetite's dainty: I feed on the cheek
Where the rose and the lily entwine;
Oh! I love with my ploughshare deep furrows to streak
In lineaments all but divine.

And I relish the scene where two fond parents weep
O'er a child they are anxious to save;
They may watch if they please, but my vigils I keep,
And I heed not the boon that they crave.

Then I vary my food; and at times my cold grasp
On the husband and parent I lay;
And I chuckle within, as I see the last gasp,
And turn the fine figure to clay.

But though monarch I am, yet I sway not the dead,
In the grave I myself seem to die;
There I lay down my weapons, and bow my proud head
'Fore a Monarch more mighty than I.

And I oft see the souls of my victims arise,
While their bodies fall under my rod;
But I dare not approach where they dwell in the skies,
The beloved and accepted of God!

December 20th, 1846.

A CHAPTER OF BLANKS.

SUGGESTED BY BEING ASKED TO FILL THE LAST PAGE OF AN ALBUM.

I've read the album through,
It's prose and verses too,
And now behold, I view
A page that's "blank."

Hereon I wish to write
Some memorandum slight,
But, lo! my mind is quite,
Like it, a "blank."

But yet the page I'll fill;
For there is something still,
We may learn, if we will,
E'en from this "blank."

For 'tis not only here
That empty blanks appear,
But e'en in life's career
There's much that's "blank."

If, then, in life's gay round
A blank too oft is found,
Say, where doth joy abound
Without a "blank?"

'Tis where the sceptre's swayed
By Piety, sweet maid,
Her pleasures never fade,
Nor leave a "blank."

For though the grave's our doom,
She dissipates the gloom
That broodeth o'er the tomb,
Where all seems "blank."

And when stern troubles rise
She pointeth to the skies,
And saith, "Look up,—be wise,"—
For THERE'S no "blank."

January, 1842.

IMPROMPTU

LINES FOR THE FIRST PAGE OF MY SISTER'S ALBUM.

As many as choose, may freely peruse
Whatever the Album has in it;
But all they that look, must embellish the book
By putting some trifle within it.

Young ladies who sigh, they cannot tell why,
And rhyme about "love unrequited,"
May shew in these leaves how sorely it grieves,
To be disappointed or slighted.

Or, if it's their forte, with humour to sport,
(And "the Muses" are often amusing)
Their wit must appear, duly register'd here;
In short, I will have no refusing.

But if with "the Nine," they will not incline
To swell my poetical posy;
I must, I suppose, be contented with prose,
But the prose must never be prosy.

Young gentlemen, too, I've a word left for you,
Though you talk about nothing but science;
For beautiful gems from your pencils and pens,
I look with the firmest reliance.

Philosophy, poetry, paintings, and prints,
With sayings of saints and of sages;
But enough! I merely throw out a few hints
To aid you in filling my pages.

January 20th, 1842.

LINES,

WRITTEN AFTER READING SHELLEY'S POEM OF "QUEEN MAB."

"Is there a God?" Dost ask that of thyself,
Or was it told thee of another?
Bad as is man, debased, defiled, depraved,—
A total wreck of that which once he was,
Still from himself that question does not come;
Offspring it is of that foul realm below,
Where Satan reigns and darkness ever dwells.
"Is there a God?" Did conscience' lamp still burn,
Or were its embers glowing in thy breast,
Thou hadst not asked that question.
Look around,
Gaze on the face of nature; see the sun
Rising in majesty, like one refreshed
By slumber and repose; mounting his car
In silence, streaking first the dusky sky
With glimmering rays of light; which, murky night
Perceiving, slowly folds her raven wings,
And every cloud that, like a pall, o'er earth
Had hung suspended while her reign endured,
Forth from his presence flees; the silent moon,
And stars their faces hide, nor dare appear,
When he shines forth in glory. See his beams
Light and life-giving, quickly raising up
A slumbering world from its nocturnal tomb.
The merry lark and all the sylvan choir
Now pay their morning orisons, and all
Grow gay and busy. E'en the insect world
Hums forth a hymn of gladness, which mankind
(Insects like them, living a little day,
Then lying down and dying) oft forgets
To join in. See those beams dispense
Both life and genial warmth; these not confined

To man, and birds, and insects, but o'er all
The vegetable world their influence kind
Extending; for the lily weaving robes
Of virgin purity and whiteness; then
Tinging with green the grass that clothes the field;
Vesting convolvulus with all the tints,
That, like the fragments of a rainbow, meet
Within its narrow cup; giving the rose
That modest blush, which maiden-like, she wears;
And to the sunflower his proud golden garb,
In gratitude for which, his jocund face
Tow'rds Sol he turns; mantling the violet, too,
With lowly blue, and as the birds that are
Most gorgeously appareled, lack the voice
That to the lark and nightingale are given,
So the poor violet of humble mien,
Is gifted with a breath of fragrance, which
Its gayer neighbours lack. The luscious fruits
Their richness also to the sunbeams owe;
These paint the ruddy apple; and infuse
The glowing purple of the vinous grape.
But behold! Evening approaches, and that orb
E'er he withdraws, his favours to dispense
To other claimants, with a crimson blaze
Illumes the western sky. Now in full choir
The feathered songsters once again attune
Their voices to the vesper hymn. Then Night
Spreads forth again her sable wings, and shrouds
Fair earth in garb of blackness. All is still;
The glow-worm lights her lamp, and watchman-like,
Her solitary wandering slowly takes.
The owl and bat now leave their shy retreat,
And roam abroad. Now see the moon arise,
In silent beauty, like some fairy Queen;
And sweetly smiling from her lofty throne,
High in heaven's deep blue vault; while grateful showers

Of pearly dew-drops fall on every flower,
Studding each leaf, as if it were a diadem.
Thousands of stars stand round, as though to pay
Their homage to the lovely Queen of night.
Twinkling with joy, they glitter forth in peace
From the bespangled sky, to cheer the heart
Of many a mariner, and light him on
His perilous voyage o'er the trackless waste
Of waves, that keep him from the land he loves.
Held in their places by a hidden power,
These orbs of light, though dancing with their Queen
Around their solar centre, ne'er forget
The spot where they should be; ne'er do we find
Confusion in their movements. Each small orb
That sparkles in the vast expanse of heaven,
Hath its own orbit in the realms of space,
Nor dares to move from its appointed path.
Why should these things so be? What Pilot guides
The sun, and moon, and stars, as on they roll
In silence through the skies? What Hand is that
Which keeps them hanging in vacuity?
Who made them first, clothing the sun in gold,
And moon in gentler robe of silvery hue?
Who the Enameller that with rays of light
Pencils the flowers of various tints, and gives
The fruits their luscious flavour? Is it chance?
Can blind and fitful accident invest
With order, such as men and angels too,
May gaze upon and wonder? Is it man
Whose breath is in his nostrils, and whose life
A slender thread that merest trifles snap?
Can he,—a system such as this uprear?
Or was it not an Infinite and Holy Being,
Omnipotent, Eternal, Uncreate,
A Great First Cause, the Lord Jehovah God?

July, 1842.

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