CHARLES DARWIN.

"He spake of trees, from the cedar-tree that is in Lebanon even unto the hyssop that springeth out of the wall: he spake also of beasts, and of fowl, and of creeping things, and of fishes." — 1 KINGS iv. 33.

OF all the illustrious tombs which crowd Westminster Abbey, none is more illustrious than that of Isaac Newton. His, as Dean Stanley said, is "the only dust of unquestionably world-wide fame that the floor of Westminster covers." Over his beautiful statue, Astronomy, leaning on her celestial globe, has for a time closed her book. On the graceful bas-relief below, his works are allegorically forthshadowed. The genii coining at the furnace symbolize his services as Master of the Mint; another genius holding a prism indicates his vast and brilliant discoveries respecting the laws of light; another weighs the sun against the planets on a steelyard, as an emblem of the laws of gravitation which he established; yet another lays on his telescope an admiring hand; at the left others tend an aloe whose rare blossom is the emblem of immortality. And the inscription tells that he "of nature, of antiquity, of Holy Scripture, a diligent, able, faithful interpreter, he vindicated by science the majesty of the Almighty; while in his character he shewed forth the simplicity of the gospel." Other illustrious votaries of art and science have here their memorials, or have mingled their dust with his; other astronomers, like Herschel, and the young and lamented Horrocks, who on a laborious Sunday between two

services observed the transit of Venus which he had predicted; geologists, like Buckland and Lyell; physicians, like Mead and Hunter; discoverers, like Morland and Davy and Hales and Young; engineers, like Watt and Stephenson, and Telford and Brunel. But, in all the long list during the one hundred and fifty years since the body of Newton was borne from the Jerusalem chamber, none was nobler or greater, none exercised an influence so deep upon the progress of science, none had more unquestionably a world-wide fame, than that great and good man, Charles Darwin. With one voice, the gratitude of Europe and of England pronounces him to have been most patient in his researches; most original in his methods; most brilliant in his combinations; inspired by the purest love of truth; actuated by the most transparent candour; microscopically careful in observation of detail; magnificently comprehensive in width of grasp; "a high example of the fidelity and humility of human thought." Death has been busy of late among our best and greatest. It has taken from us the great statesman whose career — "extraordinary," as his successor said, "even among the extraordinary" — illustrated the force of genius and indomitable perseverance; it has taken the fine thinker, who, choosing romance as the vehicle of her teaching, has flung so rich a light on many of the problems of human character; it has taken the great moralist, who, in language intense and vivid as lightning, proclaimed to us the old gospel of heroism and labour; it has taken that beautiful and accomplished spirit, — so dearly loved a friend to many of us, who has left in our hearts and in this place a memory which cannot be dimmed, but a blank and void which can never be filled up. A few years ago it took from America

the good-hearted and eloquent Emerson. It has taken this greatest of our men of science; this keen observer, whose genius enabled us to read so many hitherto undeciphered lines in God's great epic of the universe; this clear-eyed student of nature, so docile and so patient, so childlike and full of love.

It is too early as yet to estimate his place among mankind; but even now we may say that his claim to immortal honour is securely based on the methods which he discovered and the facts which he amassed during his life-long toil. Kepler said that he might well wait a few years for a reader, when God had waited six thousand years for any one to see His works. The glory of Charles Darwin, of which no change of view respecting his theories can rob him, is that he passed through the world with open eyes. In the voyage of the "Beagle" he bore without a murmur that five years' martyrdom of continuous sea-sickness which permanently ruined his health. It was amazing — but for his most tender, and never-ceasing devotion, it would have been impossible — that anything, much less that such noble work, should have been the outcome of such shattered strength. How many of us would have had the faith and the courage to redeem to such high services what would have been to most men, and with some excuse, the life of a broken valetudinarian? But it was in that voyage that he laid the foundations of his vast knowledge. This man on whom for years bigotry and ignorance poured out their scorn has been called a materialist. I do not see in all his writings one trace of materialism. I read in every line the healthy, noble, well-balanced wonder of a spirit profoundly reverent, kindled into deepest admiration for the works of God. In that charming

record of his circumnavigation of the globe, he describes the moonlight in the clear heavens; the dark, glittering sea; the white sails filled with the soft air of gently blowing trade winds; the dead calm when the ocean gleams like a polished mirror; the rising arch and sudden fury of the squall, in which the albatross and petrel sport, "the dark shadows, the bright lights, the rushing of the torrents, which proclaim the strife of the unloosed elements on shore." He speaks of the sublimity of the tropical forests, undefaced by the hand of man, whether those of Brazil, where the powers of life are predominant, or those of Tierra del Fuego, where death and decay prevail; and "both," he says, "are temples filled with the varied productions of the God of Nature, and no man can stand in those solitudes without feeling that there is more in man than the mere breath of his body." And, then, from these grandeurs — from oceans and forests, from the flora and fauna, from electric phenomena and the motions of clouds — he turned, with the open eyes of equal wonder, to things which vulgar minds would despise as mean and insignificant, — not only to beasts and cattle, or to birds and butterflies, but to slugs and cuttle-fish, to frogs and phosphorescent insects, to barnacles and sea-acorns, to confervæ and infusoria, — conscious always that more creatures wait on man than he'll take notice of. In 1842 and 1844 he first explained to the world the structure of coral reefs and volcanic islands, which play so important a part in the configuration of the globe. In 1859 came his "Origin of Species"; in 1871, his "Descent of Man." Those books, apart altogether from their main hypothesis, abound in exquisite discoveries and splendid generalizations. The doctrine of heredity, as there developed, is pregnant with

moral warning. The chapter on the struggle for existence reads like a thrilling tragedy, which must have its significance ages hence. The doctrine of the survival of the fittest may be so used as to act like a moral lever for the elevation of all mankind. And these great colligations of facts are illustrated by hundreds of beautiful observations on the instinct of animals, the plumage of birds, the glowing eyes in the tail of the peacock, the gardens of the bower-bird, the blue bars of the wings of the wood pigeon, the nests of fishes, the colours of snakes, the habits of ants, the cells of bees,

> "Something of the frame, the rock,
> The star, the bird, the fish, the shell, the flower,
> Electric, chemic laws."

There is scarcely a region of animate or inanimate nature on which his genius has not poured a flood of light. Through the whole system of tnought and education — from the oldest university of Europe down to the humblest village school in England, his inspiring impulse has been felt. The allegorical bas-relief on his tomb would have to be crowded with the works of God. But no man had ever less need than he of "storied urn, or animated bust." Ἀνδρῶν ἐπιφανῶν πᾶσα γῆ τάφος, — "Of illustrious men, the whole earth is the tomb"; and of Charles Darwin it has been finely said that "a grass plot, a plant in bloom, a human gesture, the entire circuit of the doings and tendencies of nature, builds his monument and records his exploits."

For, indeed, he threw no less light on the vegetable than on the animal world. In 1862, and later years, he published his astonishing investigations into the fertiliza-

tion of orchids, and the movements of climbing plants, and other branches of botany. In these works, again, he made us acquainted with masses of facts which none had understood during the six thousand — or, for all we know, the six hundred thousand years — since God had made them. How unspeakably full of interest is the discovery of the close and necessary interrelation between the insect and the plant! When a pistachio tree in Paris, with only female flowers, suddenly bore nuts, and it was found, by most careful search, that there was but a single tree with male flowers, miles away, which had blossomed for the first time that year, it might well have been deemed miraculous that the wind should have borne minute and almost invisible pollen dust across miles of smoky faubourgs till, out in the millions of motes they swept along, it alighted by chance, yet with infinite nicety, on one tiny spot of the pistils of that distant tree. It was the German botanist Conrad Sprenger who proved that it is mainly insects which fertilize the flowers of the world; and this he proved by watching plants from sunrise to sunset, sometimes for sixteen hours together in silence, sometimes till he saw some buzzing insect penetrate the flower for its honey, and then observed the grains of pollen left by the winged, unconscious messenger of God on the viscid humour of the stigma. Mr. Darwin immensely developed this exquisite discovery. He revealed many a fresh link in the divine chain which, with myriads of links microscopic but indissoluble, connects the animal with the vegetable world. There is one class of orchids with a grand-looking nectary which were believed to produce no honey, but only by their brilliant colours and fair promise to deceive the bees and moths into visiting and so fertiliz-

ing them. They are called sham honey producers. Mr. Darwin's innate love of truth and hatred of shams made him disbelieve this. He could not believe, he said, in so gigantic an imposture. Man, the guiltiest as the foremost work of his Creator, may wear the mark of the hypocrite; but he would not think so meanly of the innocent lilies of the field. And soon he discovered that these orchids, so far from existing by an organized system of deception, do produce honey underneath the outer skin of the nectary, which can be easily pierced by the moth. Nor was this a superfluous trouble given by the flower to the insect. The gum on the disc of these plants requires a few seconds longer to get dry than that of others, and the time spent by the moth in getting the nectary allows the gum, and the pollen with it, to dry properly on its proboscis; and thus it can fertilize its kindred flowers. And, if you ask, Of what use are these exquisite discoveries? I answer, first, that it must be a mean mind which cares nothing for these divine adaptations of the Creator, unless they can be turned into bread; and, next, that such discoveries are often indefinitely important even to the physical needs of man. When white clover was first imported to New Zealand, the colonists observed with amazement that it produced no seed. Red clover grew there: why should not white? Because, as such discoveries led men to observe, red clover is fertilized by the humble-bee, the weight of which resting on the keel of the flower pushes the stamen in such a way that the pollen reaches the stigma. But white clover is fertilized by hive bees, and, when hive bees were introduced into New Zealand, the white clover also bore seed and grew. When man has faith,— when he bends with the simplicity of childlike admiration over the works of God,— he never

knows how precious may be the secrets which Nature may unclench for him out of her granite hand.

It is but a short time since Mr. Darwin gave us his last work, on "Earth-worms." In it he demonstrated the marvellous fact that to these most despised and humble creatures we owe nothing less than the formation of vegetable mould all over the surface of the earth; nothing less, that is, than the preparation of the earth for the life of man. That book was the practical outcome of forty years of patient, continuous, unhasting, unresting observation. The worm has long been a synonym for everything mean and contemptible. Was there no lesson for us in the fact, till then undiscovered,—nay, even unconjectured,—that on the work of these humble creatures man, proud man, is indefinitely dependent? Was there no rebuke to arrogance in the fact that many a man does less good in life than the worm, which, though it does no evil, he crushes into the sod? Was there nothing admirable in the loving study of these despised creatures of God? As a boy, Mr. Darwin had been under the influence of deeply religious impressions. There is evidence, I think, that he never lost them. And this, at least, is clear: that in all his simple and noble life he was influenced by the profoundly religious conviction that nothing is beneath the earnest study of man which has been worthy of the mighty handiwork of God.

When Pompey forced his way into the Holy of Holies in Jerusalem, he found, to his amazement, that all the idle stories of his countrymen about the worship of the Jews were lies; and that they did not worship, as Greeks and Romans had said, an animal or an ass. But he also found, to his amazement, *vacua omnia*,—that all was empty, that there was nothing there; and after this the Romans thought that

Jehovah was some mere being of the clouds. Something like this has happened to many men of science. They have found, perhaps, that God is not the God presented to them by false types of orthodoxy,— no awful idol of the cavern or of the school,— but that the God whom the Gospels really revealed is a God of light and a God of love. But, when they have pressed their way into the arcana of Nature, the shrine has seemed to them to be empty: they have seen nothing; and so, like Pompey, they have failed to recognize the Unseen Presence which dwelleth there. But God was in His holy temple, though the heathen soldier saw Him not. And though the probings of the scalpel cannot manifest Him; though no microscope can reveal Him; though, among the immensities, the telescope finds "no manner of likeness or similitude," yet to the eye of faith, to that spiritual faculty by which alone (as all Scripture tells us) He can be spiritually discerned,— and which, like every other faculty, can be atrophized by neglect,— God is in nature; He is everywhere. Galileo saw Him in the farthest star; Linnæus worshipped Him in the humblest flower; the spores of the meanest moss reveal Him, and the colours of the tiniest insect's wing. And there assuredly, judging by his own expressions, this great naturalist found Him. What were his views about those Christian doctrines which we hold to be most dear I know not; but I do know that in all his writings I cannot find that he has lent himself to a single expression hostile to religion, to a single sentence irreconcilable with my faith in Christ. There is a worship which has been described as "mostly of the silent sort, at the altar of the unknown and the unknowable." To us who worship a Father in heaven, and a Saviour who died for our sins, it looks chilly, maimed,

and imperfect. But, if there be good men to whom no other has become possible, I, for one, believe that by God who is the judge, not we,—by God, who seeth not as man seeth,—by God in Christ, it may and will be accepted as a sincere and as a holy worship. Yes! to the God who reveals Himself in many ways, I believe that even prayers which can find no words, which are but the dim yearnings of the unsatisfied spirit, the sighs heaved by the unconvinced, may at least be as acceptable as was of old "the right burning of the two kidneys with the fat." Nay, if such worship be offered on the altar of a pure life, if it be accompanied with faithful effort and unselfish love, I, for one, believe that it will be a far sweeter incense than the prayer of any who draw nigh unto God with their lips, while their hearts are far from Him. Many an earnest believer in the Lord Jesus Christ bent with sorrowing heart over Darwin's grave. Let not our honour for him be misunderstood. It does not mean that we love our Saviour less: it does mean that we love more all for whom He died. It does not mean that we have a fainter faith: it does mean that we have a larger charity.

When the greatest living master of science in France—Louis Pasteur—was received into the French Academy, although himself an earnest and a sincere believer, he had to pronounce the *éloge* on his predecessor, the learned Positivist, Emile Littré; and the earnest scientific believer spoke of the Positivist in these noble words: "Littré," he said, "had his God within him. The ideal which filled his soul was a passion for work, a passion for humanity. He has often appeared to me seated by his wife, as in a picture of the early time of Christianity, he looking down full of sympathy for sufferers, she a fervent Catholic, with

her eyes upraised to heaven; he inspired by every terrestrial virtue, she by every divine influence; the two wearing but one radiance, from the two sanctities which form the halo of the God-Man,— that which proceeds from devotion to what is human and that which emanates from ardent love to the divine." I adopt to-day those noble words of the scientific Christian. God is larger than the Churches. His heart is wider than the heart of theologians. Faith lives: it is only the spirit of the Inquisition which is dead.

I have referred to some of the regions in which lay the great contributions to the results and methods of science of this most eminent thinker and naturalist. And behind the discoverer stood the man. If in his works he has left us a legacy of imperishable knowledge, in his life he has left us an example of imperishable attractiveness. Before the simple goodness of this man the arrogant dogmatism of science no less than the arrogant dogmatism of theology stands rebuked. Not one man in a hundred is capable of judging about his theories; but all the world can judge of the beauty, the dignity, of his character. Denounced as the author of a theory subversive not only of religion, but of morality, he never retaliated. He suffered fools gladly.

To scientists he left the high example of one who did his Heaven-appointed work, yet never lent himself to one word against religion; to theologians, the rebuking spectacle of a mind too pure and too lofty to be moved by the explosions of ignorant anathema. The personal goodness which beamed from him, the largeness of nature in which nothing petty could live, the total absence of mean jealousies, the scrupulous anxiety to do justice to opponents, — in how many professing Christians even shall we find

these? If high purity and rigid performance of duty constitute a blessed career; if what God requires of us is to do justly, and to love mercy, and to walk humbly with our God; if to "do unto men whatsoever we would that they should do unto us" be "the law and the prophets,"—then I do not hesitate to say that, rather than by the side of any formalist or any Pharisee, whose daily words belie his vaunted orthodoxy, and make men turn with scorn from his religion of denunciation and of hate, I, for one, would rather take my stand at the Great Assize with one who may have borne the stigma of a heretic, but who shewed the virtues of a saint. Calm in the consciousness of integrity; happy in sweetness of home life; profoundly modest; utterly unselfish; exquisitely genial; manifesting, as his friend has said of him, "an intense and passionate honesty, by which all his thoughts and actions were irradiated as by a central fire,"—Charles Darwin will take his place side by side with Ray and Linnæus, with Newton and Pascal, with Herschel and Faraday, among those who have not only served humanity by their genius, but have also brightened its ideal by holy lives.

There are two phenomena with which every age has been familiar, not least our own. One is the rapidity with which truth wins its way, so that the heresy of yesterday becomes the superstition of to-day; and the outcry, "It is wicked and false," is succeeded by the self-complacent murmur, "We thought so all along." The other is the way in which men who have murdered the prophet crowd zealously forward to build his tomb, and, having embittered all his life down to its last dregs by their depreciations, come and shed their crocodile tears above his grave. This life is a fresh illustration of these phenomena. Twenty

years ago the views of Mr. Darwin were received with bursts of denunciation and derision. What are the facts? Those who still think them unproven, if they be incompetent to give an opinion, have at least learned modesty. The martyrdoms of science, the crimes of Inquisitors, ought at least to have untaught us the folly of condemning scientific conclusions on the ground of confused abstract notions, ignorantly pieced together out of misinterpreted texts. We go to the Bible for religion, not for science; and three hundred years ago Bacon, one of the greatest and one of the most religious of philosophers, warned us that he who is guilty of the empty levity of trying to found natural philosophy on the Book of Job or the first chapter of Genesis is looking for dead things among living men. Whether we accept or not the Darwinian hypothesis, this at least is certain that (to quote his own words) there is nothing in it which is contrary to the laws impressed on matter by the Creator. Nay, more: that "there is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, while this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning,"—yes, and even from the war of nature, from famine, and from death,— "endless forms most beautiful and most wonderful have been and are being evolved." It may be abhorrent to man's vanity to be told that he is sprung from a lowly origin; but, on the one hand, it ought to be more abhorrent to know that man has often indulged in lower vices than the brute, and, on the other, the body of his humiliation is glorified when he remembers that it is God's grace which has given him "sympathy, which feels for the most debased; benevolence, which extends to the

humblest living creature; a godlike intellect, which has penetrated the heavens and weighed the stars." So far from being robbed of one element of faith, if this conviction be ever forced upon us, we may be indefinitely the better for it if we will carry with it the old and sacred lesson,

> "Unless above himself he can
> Erect himself, how poor a thing is man!"

Let me point to one or two great and most needful lessons which this life may emphasize to the nation and to the age.

First, I hope that even the most unteachable of mankind, those whose misguided zeal has forced science and religion into unholy antagonism and disgraced the flag of faith by trying to raise it in defiance to the flag of reason, will see by one more instance that by such conduct they wrong the cause of religion and wrong the majesty of God. Let us have done forever with the ruinous error, caused partly by want of real faith, partly by a usurping selfishness, which has led the Church to regard progress as a danger, and to repress by force or by anathema the emancipating progress of the human mind. The names of Roger Bacon, of Columbus, of Copernicus, of Vesalius, of Campanella, of Galileo, of Kepler, of Descartes, rise in judgment, not (God forbid!) against religion, but against an ecclesiasticism at once childishly timid and fiercely cruel, which constantly attempts to usurp its name. Even Newton's law of gravitation, the greatest discovery ever made by man, was attacked as being "subversive of natural, and, inferentially, of revealed religion." Shall we never learn that, in generation after generation, divines of every school and of every shade of opinion have, in matters of science been

not only egregiously, but obstructively, and even aggressively, in the wrong? Science is not their sphere: their opinion about it is not worth the breath with which it is uttered. But in this matter there have been mistakes on both sides. If clergymen have arrogated the name of religion to baseless nescience, born of false dogma and mistaken system, physicists also have often arrogated the name of science to premature conclusions, based on insufficient facts. Both have reared on bases of sand and on pillars of smoke their pretentious temples of their subjective idols. Let there be on both sides a little patience, a little humility, a little brotherly love. A truce to idle antagonism! The fundamental doctrines of religion are eternally true: the fundamental doctrines of science are eternally true. In ceding to science the study of the universe, we do not cede one iota of our faith. Religion is the voice of God to man in history, in conscience, in experience, in the gospel of Christ. Science is the voice of God to man in nature. Scripture is His Bible written with paper and ink: science is His Bible written on the starry leaves of Heaven and the rocky tablets of the world. God cannot speak in two voices. God cannot contradict Himself. Between physicists and theologians there have been conflicts many a time. Between true science and true religion there never has been, never will be, never can be, any conflict whatever. The one, as Baronius so truly said, is "the revelation of how the heaven goeth, the other of how we must go to heaven."

And because these false antagonisms have been infinitely dangerous to faith over Darwin's grave, let us once more assure the students of science that for us the spirit of mediæval ecclesiasticism is dead. We desire the light.

We believe in the light. We press forward into the light. If need be, let us even perish in the light. But we know that in the light we shall never perish. For to us God is light; and Christ is, and will be to the end, "the Light of the World." Ah! if we had but presented Him to you more truly; had we not too often shewn you in ourselves an image so awfully unlike Him; if priests had cared less to clothe themselves with power and more to clothe themselves with righteousness; had we fought less for dead scholastic formulæ and more for practical living faith,—it may be that between the students of science and the champions of religion no severance would ever have occurred. Had we cared little for phrases and much for fruit, little for the minutiæ of ritual and dogma, much for mercy, justice, and truth; had we been more jealous of that falling asunder of action from knowledge which characterizes too much of our so-called religious life,—men could never have been alienated from a faith which shone forth in the beauty of holiness. Let us try to arrive at a better understanding, at a deeper sympathy. We are men,—sharers in the common sorrows of few and evil days. We are brethren: we need each other's help; we need more than all that by means of that common help, God, for the alleviating of our miseries, should constantly give us new refreshments out of the fountains of His goodness. We recognize with deep gratitude the boons which we have received from science. Ah! let none of you fall into the dangerous error of scorning those which you may receive from religion. Is it nothing that we can point you to a sea of light, which rolls round, and overfloods, this sea of darkness? Have you no need of Him of whom we tell you; of Him who alone can say to the polluted heart, "I

will, be thou clean"; to the prostrate soul, "Arise and walk"; to the weary spirit, "Come unto me, and I will give you rest"? We are brethren, created by the same God, redeemed by the same Saviour, heirs together of the common mysteries of life and death. Join with us, over Darwin's grave, in the prayer that we, by the grace of God, may learn more of humility, of charity, of large-hearted goodness, of religion pure and undefiled; and, for yourselves, that "human things may not prejudice such as are divine; neither that, from the unlocking of the gates of sense, and the kindling of a greater natural light, anything of incredulity or intellectual night may arise in your minds towards divine mysteries; but rather that by minds thoroughly cleansed and purged from fancy and vanities, and yet subject and perfectly given up to the divine oracles, there may be given," not only unto reason such things as be reason's, but also "unto faith such things as be faith's."