

Sixteen, on the heavens.

Five, on the form, density, latent heat, and magnetic power of the earth, and to the polar light.

Four, were on the nature of the crust of the earth, on hot springs, earthquakes, and volcanoes.

Two, on mountains and the type of their formation.

Two, on the form of the earth's surface, on the connection of continents, and the elevation of soil over ravines.

Three, on the sea as a globular fluid surrounding the earth.

Ten, on the atmosphere as an elastic fluid surrounding the earth, and on the distribution of heat.

One, on the geographic distribution of organized matter in general.

Three, on the geography of plants.

Three, on the geography of animals, and

Two, on the races of men.

These lectures are what is known as the COSMOS, and present a scientific picture of the world—of infinite diversity in unity—of ceaseless motion in the eternal repose of law.

These lectures contain the result of his investigation, observation, and experience; they furnish the connection between phenomena; they disclose some of the changes through which the earth has passed in the countless ages; the history of vegetation, animals and men, the effects of climate upon individuals and nations, the relation which we sustain to other worlds, and demonstrate that all phenomena, whether insignificant or grand, exist in accordance with inexorable law.

There is one truth, however, that we should never forget; superstition has always been the relentless enemy of science.

Faith has been a hater of demonstration.

Hypocrisy has always been sincere only in its dread of truth.

Since the murder of Hypatia in the fifth century, when the polished blade of Greek philosophy was broken by the club of ignorant Catholicism, until to-day, superstition has detested every effort of reason.

It is almost impossible to conceive of the completeness of the victory that the church achieved over philosophy. For ages science was utterly ignored; thought was a poor slave; an ignorant priest was master of the world. Faith put out the eyes of the soul. The reason was a trembling coward; the imagination was set on fire of hell; every human feeling was sought to be suppressed; love was considered infinitely sinful; pleasure was the road to eternal fire, and God was supposed to be happy, only when his children were miserable. The world was governed by an Almighty's whim; prayers could change the order of things; halt the grand procession of nature; could produce rain, avert pestilence, famine and death in all its forms. There was no idea of the certain; all depended upon divine pleasure—or displeasure rather; heaven was full of inconsistent malevolence, and earth of ignorance. Everything was done to appease the divine wrath; every public calamity was caused by the sins of the people; by a failure to pay tithes, or for having even in secret, felt a disrespect for a priest. To the poor multitude, the earth was a kind of enchanted forest, full of demons ready to devour, and theological serpents lurking with infinite power to fascinate and torture the unhappy and impotent soul. Life to them was a dim and mysterious labyrinth, in which they wandered weary, and lost, guided by priests as bewildered as themselves, without knowing that at every step the Ariadne of reason, offered them the long lost clue.

The very heavens were full of death; the lightning was regarded as the glittering vengeance of God, and the earth

was thick with snares for the unwary feet of man. The soul was crowded with the wild beasts of desire; the heart was totally corrupt, and prompted only to crime; even seeming virtues were regarded as deadly sins in disguise; there was a continual warfare being waged between the Deity and the Devil, for the possession of every soul; the latter generally being considered victorious. The earthquake, the tornado, the volcano, were all evidences of the displeasure of heaven, and the sinfulness of man. The blight that withered, the frost that blackened, the insects that devoured were the messengers of the Creator.

The world was governed by fear.

Against all the evils of nature, there was known only the defense of prayer, of fasting, and devotion. Man in his helplessness endeavored to soften the heart of God. The faces of the multitude were blanched with fear, and wet with tears; they were the prey of hypocrites, kings and priests.

My heart bleeds when I contemplate the sufferings endured by the million now dead; of those who lived when the world appeared to be insane; when the heavens were filled with an infinite HORROR who snatched babes with dimpled hands and rosy cheeks from the white breasts of mothers, and dashed them into an abyss of eternal flame.

Slowly, beautifully, like the coming of the dawn, came the grand truth, that the universe is governed by law; that disease fastens itself upon the good and upon the bad; that the tornado can not be stopped by counting beads; that the rushing lava pauses not for bended knees; the lightning for clasped and uplifted hands, nor the cruel waves of the sea for prayer; that paying tithes causes, rather than prevents famine; that pleasure is not sin; that happiness is the only good; that demons exist only in the imagination; that faith

is a lullaby sung to put the soul to sleep; that devotion is a bribe that fear offers to power; that offering rewards in another world for obedience in this, is simply buying a soul on credit, that knowledge consists in ascertaining the laws of nature, and that wisdom is the science of happiness. Slowly, grandly, beautifully, these truths are dawning upon mankind.

From Copernicus we learned that this earth is only a grain of sand on the infinite shore of the universe; that everywhere we are surrounded by shining worlds vastly greater than our own, all moving and existing in accordance with law. True, the earth began to grow small, but man began to grow great.

The moment the fact was established that other worlds are governed by law, it was only natural to conclude that our little world was also under its dominion. The old theological method of accounting for physical phenomena by the pleasure and displeasure of the Deity was, by the intellectual, abandoned. They found that disease, death, life, thought, heat, cold, the seasons, the winds, the dreams of man, the instinct of animals, in short, that all physical and mental phenomena were governed by law, absolute, eternal and inexorable.

Only a few years ago this earth was considered the real centre of the universe; all the stars were supposed to revolve around this insignificant atom. The German mind, more than any other, has done away with this piece of egotism. Purbach and Mullerus, in the fifteenth century, contributed most to the advancement of astronomy in their day. To the latter the world is indebted for the introduction of decimal fractions, which completed our arithmetical notation, and formed the second of the three steps by which, in

modern times, the science of numbers has been so greatly improved; and yet, both of these men believed in the most childish absurdities, at least in enough of them, to die without their orthodoxy having ever been suspected.

Next came the great Copernicus, and he stands at the head of the heroic thinkers of his time, who had the courage and the mental strength to break the chains of prejudice, custom, and authority, and to establish truth on the basis of experience, observation, and reason. He removed the earth, so to speak, from the centre of the universe, and ascribed to it a two-fold motion, and demonstrated the true position which it occupies in the solar system.

At his bidding the earth began to revolve. At the command of his genius it commenced its grand flight, mid the eternal constellations round the sun.

For fifty years his discoveries were disregarded. All at once, by the exertion of Galileo, they were kindled into so grand a conflagration as to consume the philosophy of Aristotle, to alarm the hierarchy of Rome, and to threaten the existence of every opinion not founded upon experience, observation and reason.

The earth was no longer considered a universe, governed by the caprices of some revengeful Deity, who had made the stars out of what he had left after completing the world, and had stuck them in the sky simply to adorn the night.

I have said this much concerning astronomy because it was the first splendid step forward! The first sublime blow that shattered the lance and shivered the shield of superstition; the first real help that man received from heaven; because it was the first great lever placed beneath the altar of a false religion; the first revelation of the infinite to man; the first authoritative declaration, that the universe is gov-

erned by law; the first science that gave the lie direct to the cosmogony of barbarism, because it is the sublimest victory that the reason has achieved.

In speaking of astronomy, I have confined myself to the discoveries made since the revival of learning. Long ago, on the banks of the Ganges, ages before Copernicus lived, Aryabhata taught that the earth is a sphere, and revolves on its own axis. This, however, does not detract from the glory of the great German. The discovery of the Hindu had been lost in the midnight of Europe—in the age of faith, and Copernicus was as much a discoverer as though Aryabhata had never lived.

In this short address there is no time to speak of other sciences, and to point out the particular evidence furnished by each, to establish the dominion of law, nor to more than mention the name of Descartes, the first who undertook to give an explanation of the celestial motions, or who formed the vast and philosophic conception of reducing all the phenomena of the universe to the same law; of Montaigne, one of the heroes of common sense; of Galvani, whose experiments gave the telegraph to the world; of Voltaire, who contributed more than any other of the sons of men to the destruction of religious intolerance; of Auguste Comte, whose genius erected to itself a monument that still touches the stars; of Guttenberg, Watt, Stephenson, Arkwright, all soldiers of science, in the grand army of the dead kings.

The glory of science is, that it is freeing the soul—breaking the mental manacles—getting the brain out of bondage—giving courage to thought—filling the world with mercy, justice and joy.

Science found agriculture plowing with a stick—reaping with a sickle—commerce at the mercy of the treacherous

waves and the inconstant winds—a world without books—without schools—man denying the authority of reason—employing his ingenuity in the manufacture of instruments of torture, in building inquisitions and cathedrals. It found the land filled with monks—persecuting Protestants, and the burners of men. It found a world full of fear; ignorance, upon its knees; credulity, the greatest virtue; women treated like beasts of burden; cruelty the only means of reformation. It found the world at the mercy of disease and famine; men trying to read their fates in the stars, and to tell their fortunes by signs and wonders; generals, thinking to conquer their enemies by making the sign of the cross, or by telling a rosary. It found all history full of petty and ridiculous falsehood, and the Almighty was supposed to spend most of his time, turning sticks into snakes, drowning boys for swimming on Sunday, and killing little children for the purpose of converting their parents. It found the earth filled with slaves and tyrants, the people in all countries downtrodden, half naked, half starved, without hope, and without reason in the world.

Such was the condition of man when the morning of science dawned upon his brain, and before he had heard the sublime declaration that the universe is governed by law.

For the change that has taken place we are indebted solely to science; the only lever capable of raising mankind. Abject faith is barbarism; reason is civilization. To obey is slavish; to act from a sense of obligation perceived by the reason is noble. Ignorance worships mystery; reason explains it; the one grovels, the other soars.

No wonder that fable is the enemy of knowledge. A man with a false diamond shuns the society of lapidaries, and it is upon this principle that superstition abhors science.

We are not honoring some butcher called a soldier—some wily politician called a statesman—some robber called a king, nor some malicious metaphysician called a saint. We are honoring the grand HUMBOLDT, whose victories were all achieved in the arena of thought; who destroyed prejudice, ignorance and error—not men; who shed light—not blood, and who contributed to the knowledge, the wealth, and the happiness of all mankind.

His life was pure, his aims lofty, his learning varied and profound, and his achievements vast.

We honor him because he has ennobled our race, because he has contributed as much as any man living or dead to the real prosperity of the world. We honor him because he honored us—because he labored for others—because he was the most learned man of the most learned nation—because he left a legacy of glory to every human being. For these reasons he is honored throughout the world. Millions are doing homage to his genius at this moment, and millions are pronouncing his name with reverence and recounting what he accomplished.

We associate the name of Humboldt with oceans, continents, mountains, and volcanoes—with the great palms—the wide deserts—the snow-lipped craters of the Andes—with primeval forests, and European capitals—with wildernesses and universities—with savages and savans—with the lonely rivers of unpeopled wastes—with cliffs and crags, and peaks, and pampas, and steppes—with the progress of the world—with every science known to man, and with every star glittering in the immensity of space.

Humboldt adopted none of the soul shrinking creeds of his day; wasted none of his time in the stupidities, inanities and contradictions of theological metaphysics; he did not

endeavor to harmonize the astronomy and geology of a barbarous people with the science of the nineteenth century. Never, for one moment, did he abandon the sublime standard of truth; he investigated, he studied, he thought, he separated the gold from the dross in the crucible of his grand brain. He was never found on his knees before the altar of superstition. He stood erect by the grand tranquil column of Reason. He was an admirer, a lover, an adorer of Nature, and at the age of ninety, bowed by the weight of nearly a century, covered with the insignia of honor, loved by a nation, respected by a world, with kings for his servants, he laid his weary head upon her bosom—upon the bosom of the universal Mother—and with her loving arms around him, sank into that sweet slumber called Death.

The angel of history added another name to the starry scroll of the immortals.

The world is his monument; upon the eternal granite of her hills he inscribed his name, and there upon the everlasting stone his genius wrote this, the sublimest of truths,

“THE UNIVERSE IS GOVERNED BY LAW!”

CHARLES BRADLAUGH



CHARLES BRADLAUGH, an English radical politician, secularist, and socialist, was born at London, Sept. 26, 1833, and died there Jan. 30, 1901. His early schooling he received at elementary schools in the East End of London, and at fifteen began to speak before street audiences, and at nineteen was a lecturer on Free Thought. After a brief career in the army in Ireland, he became a lawyer's clerk in 1853, and for a number of years subsequently lectured in various places, scoring many platform successes, in spite of his hard, reckless, aggressive treatment of the themes which he handled. He edited successively "The Investigator" and "The National Reformer," and in 1868 sought to enter Parliament. After several unsuccessful contests for the borough of Northampton, he was at length returned by that town in 1880, but his difficulties were by no means passed. He claimed the right to take his seat by affirmation, instead of by taking the oath of allegiance, and the House at once passed a resolution barring his right of entrance by either method. In February, 1882, he appeared before the House of Commons, and, taking out a Testament from his pocket, administered the oath to himself. After successive exclusions, ejections, and reëlections, he was in 1886 permitted to take his seat, and in 1888 moved and carried a bill allowing members entering Parliament, if they wished, to affirm instead of taking the oath. Bradlaugh's extreme views moderated perceptibly after his entrance to Parliament. During his last illness the House of Commons voted to expunge its resolution, of June 22, 1880, denying Bradlaugh's right to affirm or take the oath. He published, in 1872, "The Impeachment of the House of Brunswick," and, in 1882, "The True Story of My Parliamentary Struggle."

AT THE BAR OF THE HOUSE OF COMMONS

MR. SPEAKER,—I have again to ask the indulgence of the House while I submit to it a few words in favor of my claim to do that which the law requires me to do. Perhaps the House will pardon me if I supply an omission, I feel unintentionally made, on the part of the honorable member for Chatham [Mr. John Gorst].

In some words which have just fallen from him I understood him to say that he would use a formal statement made