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PROFESSOR TYNDALL'S INAUGURAL ADDRESS.

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THE Inaugural Address delivered at Belfast, on August 19, by Professor TYNDALL, President of the British Association, has probably come like a thunder-clap to thousands who have read it or heard of it. For here is one of the strongest, one of the most generally acknowledged, representatives of science, the chief, indeed, of the highest scientific society in the world, from the very throne of science—the presidential chair—speaking what will seem to multitudes no other than the most undisguised Materialism, which to them will also be the blankest Atheism. For it will seem the burden of the Address, that *matter alone is the mother and cause of all things*, and that beside it there is no other cause. No God, no human soul.

When so intelligent a journal as the *Spectator* thus interprets the Address in the issue immediately after its delivery, we may be sure that thousands of persons will thus interpret it also. And this word of Tyndall, coming from such a source, supported by such prestige and such authority, will make the hearts of many quail and sicken with fear and sadness. They will feel a great darkness falling on them. The same doctrine they will no doubt have often heard before, but not from such a quarter, with such distinctness, and coming with such terrible weight. They have

thought of it hitherto as the craze of individual and eccentric scientists, but now it comes as the testimony of the whole spirit of science, past and present, spoken through the mouthpiece of one of her latest and greatest sons. And the thought cannot but whisper itself: "Is it, then, really true, or, if not true, is science going to be all-powerful and make it seem true, and so make it ultimately prevail? If so, then hope and faith must fade. Religion will have no place. Prayer and preaching will cease. All the various creeds through which we believe and about which we contend will equally vanish. Religious societies will be dissolved, and the whole spirit of our civilisation must be changed, so that it is terrible to think what the future ages may be."

We cannot wonder that already the tocsin of alarm has resounded from many a pulpit. We may be sure that for months, perhaps years to come, there will be heard from thousands of pulpits protests, arguments, denunciations, pleadings, intended to lay the terrible ghosts which this memorable Address has raised.

But what is it that Dr Tyndall has really said to cause such sensation and such fear? He has simply said out boldly what science has been really saying, though often with timid, hesitating speech, for many a year, we may say for many an age. It is this: that *matter, as we become more and more acquainted with it, shows itself to us as capable, by its own inherent laws and forces, of developing into all the forms and causing all the phenomena in the universe that we witness or experience.* And so with matter given to begin with, existing it may be in its crudest form, but still with all its inherent laws and forces, there is no need of any other Being, any Creator, any God to mould it, for it will infallibly mould itself. It is but the same thought with a wider extension which Laplace uttered: "I ask no more than the laws of motion, heat, and gravitation, and I will write you the nativity and biography of the solar system."

Yet do not let us be alarmed through mistaking the real force and bearing of this apparently most materialistic affirmation. Observe at the outset the expression, that matter being given with its inherent laws and forces, no other creator is necessary to mould it. Surely not, we, too, say, because the Creator, the eternal former and sustainer, is *in* the laws and forces: they are but the expression of his action. It is not, then, against the idea of God Himself that the hostility of science, as represented by the President of the British Association, is directed, but against a form of thought in which men in general have clothed God and presented him to their minds. They have thought of Him under the image of a Great Artificer, one who, using matter as his raw material, worked it up by his power and skill into the forms which we behold. It is this thought of an Almighty Artificer, separate from matter, that science cannot tolerate. But the destruction of this form of thought, instead of plunging us into the darkness of Atheism, opens upon us the light of true Theism. It leaves us free to form another far grander and worthier thought of God, that of the *In-dwelling, all-forming, and all-sustaining Spirit of the Universe*, which it is clear that Dr Tyndall recognises under what he calls a Cosmical life—that is, a life of the Universe.

The truth is, that this conception of God as the Great Artificer has been inadequate and erroneous from the beginning. We can now see that it was an idol, because not the highest conception that we can form, though perhaps inevitable to the times of ignorance at which God has winked. And science, like a young Abraham, has sought from its very youth to break the idol in pieces. This is why science has seemed so Atheistic in its tendencies. The legend of Abraham preserved in the Koran is, that when he was a young man he went into one of the temples of his people in their absence and broke

in pieces all the idols except the biggest there. Abraham's hostile feeling towards the idols was known. He was arrested and brought before the Assembly. "Hast thou done this unto our gods, O Abraham?" they inquired. "Nay, that biggest of them has done the deed: ask them, if they can speak." For a time the people were confounded with his reply, but soon recovered to say to one another, "Burn him, and avenge your gods." The young Abraham, science, conceived from the first a hostility to the idol of an artificer God set up in the temple of man's mind, and sought to destroy it. Dr Tyndall's Address is partly a history of these endeavours of science to break in pieces the idol. He tells how in the infancy of Greek science Democritus, the laughing philosopher, declared his uncompromising antagonism to those who deduced the phenomena of nature from the gods. Empedocles, who probably met death in his zeal for science in the burning crater of Etna, and then Epicurus, followed in the footsteps of Democritus. In the century before Christ the Roman poet Lucretius boldly announced the doctrine that Nature was sufficient for herself. "If," said he, "you will apprehend and keep in mind these things, Nature, free at once and rid of her high lords (the gods and demons), is seen to do all things spontaneously of herself without the meddling of the gods." Whilst science slept, during the Middle Ages, the voice of protest was not heard; but when she awoke again, in the era of the Reformation, Giordano Bruno, once an Italian monk, again raised the old witness, and declared that the infinity of forms under which matter appears were not imposed upon it by an external artificer. "*By its own intrinsic force and virtue,*" he said, "it brings these forms forth. Matter is not the mere naked, empty capacity which philosophers have pictured it, but the universal mother who brings forth all things as the fruit of her womb." And the devotees of the

idol, an artificer god, which he sought to break in pieces, said, "Burn him, and avenge your god." And the Venetian Inquisitors did burn him at the stake.

Taking up Tyndall's thought, we can now see that the whole progress of science has seemed to strengthen the protest and to give more strength to the doctrine of Lucretius and Bruno, that "matter, by its own intrinsic force and virtue, brings these forms (of nature) forth."

Newton's "Principia" went to show that, given, in matter, the force and law of gravitation and the laws of motion, there needed no artificer now to conduct the solar system. The nebular hypothesis of Kant and Laplace set forth that matter originally needed no artificer to mould it into worlds, if we suppose its particles scattered abroad in space endowed with repulsion and attraction. They would of themselves form rings, planets, satellites, and sun. Dalton's Chemistry showed that if we suppose a few kinds of primordial atoms of different magnitudes, or endowed with different forces and possessing certain laws of attractive affinity, no artificer is necessary to combine them into the innumerable compounds and endow them with the qualities with which we are familiar. Darwin's "Origin of Species" and "Descent of Man" suggested that, given certain organic forms of lowly type, no artificer was needed to construct all the countless forms of organic nature. For there were in these lowly forms *intrinsic force and virtue*, by which they develop into higher forms, and these into higher, until the ascidian becomes the man. Herbert Spencer, and now Tyndall, suggest that even in the inorganic forms of air, water, phosphorus, and a few other elements, there are intrinsic force and virtue to make them at some period or other of the world's history—Bastian says to make them now—of themselves combine and form organisms of low type, which develop, according to Darwin's idea, even into higher type; therefore these inorganic atoms possess

a latent life. Huxley would persuade us not only that these inorganic atoms come in organic forms to live, but that in the human brain they think and feel and will. Thus every line of scientific inquiry seems to have led to larger and larger belief in Bruno's intrinsic force and virtue of matter, making more and more needless the conception of a Supreme Artificer.

But we shall be mistaken if we suppose that this antagonism between matter and God—that is, God as the Artificer—has been felt only in the world of science. It has been felt, too, though with less open confession, in the world of religion. It has been felt, it may be, where ignorance was bliss. As long as science was unknown or ignored in the Church, as during the Middle Ages, religious minds could hold the belief in an artificer God without misgiving. But as soon as science began to creep into the Church, the paralysis of faith began. From that moment was acted over again the story which the Greek poets give us of the Theban Sphinx, the beautiful monster, half-maid, half-lion, who, sitting on a rock, proposed enigmas to the passers-by, and those who could not answer them destroyed.

Beautiful but terrible science became the Sphinx. She was always proposing to those who came near her the enigma, "How can matter, which seems to have force and virtue in it sufficient to account for all things, have any need for an artificer Creator?" And those who could not answer the question were lost as to their faith in God. This, we believe, is partly the explanation of the coldness and deadness that came upon our Churches, especially our Presbyterian Churches, during the last century. Ministers and people had become more educated, they had learnt something of the new science that was rising; and then they heard the enigma of the Sphinx and were troubled. Thenceforth it was a struggle with them to believe. They had lost the child-like faith of

their fathers. The old heartiness of prayer was gone. Ministers and people began to be shy of strictly religious topics, and to fall back on these ethical commonplaces of which they were more sure. And if this same coldness and deadness has lasted on in some of our churches till our own day, we suspect it has been because there the old conception of God as the Artificer has been maintained, whilst all the while the Sphinx has been putting the question which has made it unbelievable; and that it is chiefly where the new conception of the In-dwelling God has been introduced through the influence of men like Dr Channing, Martineau, and Theodore Parker, that the devotional life has been again quickened and deepened.

Truly, then, men like Tyndall and Huxley, Spencer and Darwin, with the terrible weapons of their materialism, do but break down an old and much battered idol which has long been the cause of dreadful doubts, even to its own devotees, and has set religion and science at bitter variance. But in breaking down the idol they are doing us the greatest service. They are letting in the light; they are leaving us face to face with a conception of God before hidden from us by our idol, but which presents him to us not only in a form which science will allow—before which, indeed, science and religion become one—but in a form which is immeasurably grander, more beautiful, and every way worthier of God than that which has been broken down. Let us clearly recognise that, when Tyndall claims for matter that it is sufficient for everything, he is not thinking of matter as that dead brute thing which the mass of men suppose it. To him, as to Herbert Spencer, matter is but the manifestation of a Great Entity, in itself unknown and unknowable. It is but the garment of what Tyndall calls the great cosmical life—the great life of the cosmos—the Universe. What is this Great Entity, what is this Great Cosmical Life, but the Eternal God Himself, of whom,

and through whom, and to whom are all things, who "besets us behind and before," and "in whom we live and move and have our being"? What is this conception suggested of the relation of God to the world but that of the Psalmist—"The heavens shall wax old as doth a garment, and as a vesture shalt thou change them"? And what is this doctrine of the unknown and unknowable life but that of Job? "Lo! these are parts of his ways, but how little a portion is heard of him! but the thunder of his power who can understand?"

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