

APOLOGETICS AND CATHOLIC DOCTRINE

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SECTION I. NATURAL APOLOGETICS

Chapter I. The Existence And The Nature Of God As Shown By Pure Reason

1. The Existence Of God

From truths naturally known, we prove the existence of a Living, Personal God, i.e., of a Being endowed with intelligence and free-will, the First or Originating Cause of all things distinct from Himself.¹

Brief Treatment Of The Proofs

I. Proof From Order And Law In Nature

Proof From Order In Nature (Usually called the proof from Design)

In the works of nature, as well as in the works of man, order or orderly arrangement is due to the activity of an intelligent designer.

1. Suppose you pay a visit to a bicycle factory. In one of the workshops you see a number of parts, sorted into different collections—a pile of steel tubing, a sheaf of spokes, wheel-rims, hubs, handlebars, pedals, boxes of nuts and screws and so forth. You return some hours later, let us say, and find that the entire assemblage of units has been transformed into a dozen new bicycles, each perfect in every detail: part has been fitted into part with deft adjustment, yielding a result which is a model of ordered arrangement. Could you possibly imagine such an achievement to have been the product of mere chance? No, you would recognize at once that it was the work of an intelligent mechanic.

Now turn from the bicycles to the human hand that helped to make them, and you will find a far more wonderful instance of order and ingenuity. Every movement of the human hand causes an interplay of finely wrought bones, a contraction or relaxation of pliant muscles, a straining or slackening of fibrous sinews. Its framework is composed of no less than nineteen bones, while eight more of various shapes ensure strength and flexibility in the wrist. Surely blind chance can have had no part in the formation of such a highly-complicated and intricate system of bones and muscles, of sinews and arteries, wherein the several units are working harmoniously for the production of each and every movement of the whole. And, if we exclude chance, the question immediately arises, whence has it come? Obviously not from man, for it has grown and developed with himself. Who then is the author of that wonderful piece of mechanism? Who is it that has caused it to grow to its present shape, to develop so many different tissues to attain to such efficiency? The answer springs to your lips. The Maker of the human hand and of the countless other marvels with which our world is filled is none other than the great Master-Worker, Almighty God.

2. The photographic camera consists of a case in which there is a circular opening for the admission of light, the light passes through the lens, and forms a picture on the sensitive plate. Parallel with this is the instance of the human eye, the eye-ball corresponding to the case of the camera, the pupil corresponding to the circular opening, the crystalline lens to the camera-lens, and the retina to the sensitive plate. In both examples, it will be observed, several distinct things are found united or fitted together to produce a single result, viz., a clear picture on the sensitive plate and on the retina. Could those distinct things have come together by chance? No, it is perfectly plain that such a combination could have been effected only by the intelligent operator. The camera was made by man: the human eye was made by a worker no less real, though invisible.²

How did the maker of the camera do his work? He collected the materials he required; he shaped, filed, and polished them with great care, and finally fitted them together. Though you may admire his skill, you are convinced that you yourself with proper training could imitate it. But what of the maker of the human eye? How did he do his work? In some most mysterious way which we are quite unable to understand, and which we recognize as far beyond the possibility of imitation, he caused a minute portion of flesh to multiply itself a million times over, and, in so doing, gradually to build up, shape, and perfect every part of the wonderful organ. He who could get a particle of matter to behave in that way is a worker whose intelligence and power it is impossible for our minds to measure. He is the Master of Nature: we call Him God.

I Proof From The Laws Of Nature

All nature is obedient to law. Astronomy, physics, and chemistry show that inanimate matter, from the stars of heaven to the smallest speck of dust, is, in all its movements and changes, subject, to fixed laws. The same holds for living things—plants, animals, and men: each species grows, develops, and acts in the same way. The entire universe is bound together into one vastly complicated whole, and is like a great, machine the parts of which are admirably fitted together. The orderly movement of the heavens, the marvelous structure of living things and their organs, such as the organs of sight and hearing, the wonderful instinct of the lower animals, as instanced in the work of insects and the nest-building of birds, the free activity of man, his great achievements in science, literature, and art—all these marvels are the gifts of nature and in conformity with its laws.

It is unthinkable that laws, producing effects so vast, and yet so orderly in their entirety and in their smallest detail, could have sprung from chance, or from any unintelligent cause we choose to name. They must have been imposed by a wise Lawgiver who so framed them and so directed them in their working as to achieve the ends he desired. That Lawgiver must be a being of vast intelligence. He must possess free-will for he has given that faculty to man. He must possess power beyond our capacity to measure, a power to which our minds can affix no limit.

The great Newton who discovered the laws of the motions of the heavenly bodies wrote as follows: "This most beautiful system of sun, planets and comets could nowise come into existence without the design and ownership of a Being at once intelligent and powerful.... This Being governs all things, not as if He were the soul of the world, but as the Lord of everything.... We admire Him for His perfections, we venerate Him and we worship Him for His Lordship."³

II Proof From Motion

Everyday experience shows us that things move. Nothing in the visible world can move entirely of itself, i. e., without help. No moving thing contains in itself the complete explanation of its movement. Consider the particular case of inanimate bodies. They move only as they are moved. They do not move themselves in any way. They get all their motion from without.

Let us apply these observations to the earth and to the heavenly bodies. That some of these bodies are in motion is manifest; the movement of the earth on its axis is a proved fact; its motion round the sun is likewise certain.

Ask yourself now how did the earth get its motion? Many physicists say that it got its motion from the sun, which, while spinning round, flung it off as a fragment. But whence did the sun get its motion? Some say that the sun got its motion from a larger body of which it once formed a part, while others assert that the sun with its motion is the result of a collision between two stars. But how did the motion of the larger body or the stars originate? Science gives no answer, and even though it did, the answer would leave us exactly where we were: we should still be as far as ever from a final and satisfactory explanation of the motion of the earth. The only real reply, which excludes all further inquiry, is that the motion is due immediately or ultimately to some unmoved source of motion, to the first mover.

There must exist, therefore, a being distinct from the world who gave it motion. That being is either the first mover or a being moved by some other. If that mover is moved by another, whence did that other derive his motion? The question as to the source of motion can be answered satisfactorily only when, at last, we reach a first mover who is not moved by any other.

That first mover we call God.

III Proof from Causality

A thing must exist before it can act: nothing therefore can make itself. If we see anything new come into existence, we are sure it must have been brought into existence by something else. That which is brought into existence is called an effect; and that which brings it into existence is called a cause.

If we find that the cause of any particular effect is itself an effect, our mind is not content: we feel that we have not yet arrived at a satisfactory explanation of the first effect. Take, for example, the electric light that suddenly springs up and floods your room at night-time. It is an effect. But what is its cause? The current. The current however is an effect of the moving dynamo. Now, if the moving dynamo is the last cause that we can name, we are still without a full and satisfactory explanation of the electric light. Why? Because the dynamo itself is an effect. Therefore, at the end of our series of questions we find ourselves in the presence of an effect that needs explanation quite as much as the effect from which we started.

Let us repeat in general or abstract form what we have been saying in the last paragraph:

In the world around us, the existence of any particular thing, which we will call A, is accounted for by something else, which we will call B. A is the effect; B is its cause. But suppose B itself to be the effect of C; C the effect of D; D the effect of E, and so on through a long series. If the last cause which we can set down—let us call it Z—has itself been produced by something else, then we are still without a true and satisfactory explanation of A. The complete and final explanation will be found only when we reach a cause which is not an effect a cause which has not derived its existence from something else. This cause which we designate the First Cause, accounts at once for the entire series of causes which we have been considering and of any other series which we choose to investigate. The First Cause therefore of all things in nature must necessarily be uncaused (if it were caused it would not be the first cause.) It was not brought into existence; thus, it must have existence of itself, it must be self-existent. The first cause, the self-existent source of all things, we call God.

IV Proof from Dependence

Everything in the visible world is subject to change and death. Plants, animals, and men come into being, and after a short time perish, while inanimate matter suffers endless changes. No particular thing in the universe has any grip on existence; its existence is an unfastened cloak that may slip from it at any instant: existence is no part of its nature. Everything in the world, therefore, is dependent, i. e., it does not exist of itself, but depends on something else for its existence.

Since dependent beings do, as a fact, exist, and go on existing, and since they do not exist of themselves, they must be held in existence by an independent or necessary being, i. e., by a being who is self-existent, a being to whose nature existence belongs.

Can the self-existent being be like matter, or electricity, or any other lifeless thing we care to name? No; to support in existence all things in the world, including living plants sentient animals, and rational men, the self-existent being must be a Living Power. He must be the Supreme Being who holds within Himself the source of His own existence.

We call Him God.

Note.—Grasp the significance of the truth that we are absolutely dependent on God for our existence. It is the foundation of all religion; it brings sharply before our mind the nothingness of man and the greatness and goodness of God. From it, springs the chief of all our duties, the duty of loving Him with our whole heart and soul as the Giver and ever-active Sustainer of our very life and being, and of acknowledging His supreme dominion over us and our total dependence on Him.

Fuller Treatment Of The Proofs Of God's Existence

First Principles.—Before giving our fuller treatment of the above proofs, we shall state the first principles on which they are based. First principles are the self-evident truths that serve as the basis of a science. Thus, in Euclid, the axioms are the first principles from which all the proposition A may ultimately be deduced. In our proofs, the First Principles are chiefly two, viz.:

- (1) That our reason and the evidence of our senses are trustworthy.
- (2) That anything which begins to exist must have been brought into existence by something distinct from itself (Principle of Causality).

We need not, and in fact we cannot, prove First Principles. They shine by their own light. Those who deny their validity put themselves beyond the pale of discussion.

I Proof From Order And Law In Nature

Proof from Order in Nature⁴

Order Explained by Examples.—The Photographic Camera.—The photographic camera is a familiar object nowadays. It consists of a small case into which are fitted a sensitive plate and at least one lens. The plate is a little sheet of glass on which is spread a chemical preparation: it is called "sensitive" or "sensitized," because it retains any picture made on it by light-rays. The lens is of glass or other transparent substance, and has the power of casting on a screen the image of any object placed in front of it. The camera is completely closed but for a small opening in one of the sides. Through this opening, the light-rays enter: they pass through the lens, and fall on the sensitive plate where they make the picture.

Without going into all details, we may note the following as the essentials of a satisfactory camera:

- (1) A case, blackened within.
- (2) A circular opening which can be altered in size so as to admit only the exact amount of light required.
- (3) A lens of a special curved shape.
- (4) A sensitive plate.
- (5) An arrangement by which the lens can be adjusted to a particular distance from the sensitive plate, so as to secure the proper focus, and save the picture from being blurred.

All these things were shaped and brought together for the purpose of producing a good picture. We have here an example of order or design, i.e., a combination or arrangement of different things in order to produce a single effect.

The Human Eye.—The human eye is similar in structure to the camera. Note the following points of resemblance:

- (1) The eye-ball corresponds to the case.
- (2) The pupil corresponds to the circular opening: it is of adjustable size, and can be altered according to the amount of light required.
- (3) The crystalline lens, corresponding to the lens of the camera.
- (4) The retina, corresponding to the sensitive plate.
- (5) An arrangement for focusing: in the camera, this is done by altering the distance between lens and plate; in the eye by altering the curvature of the crystalline lens.

Here again we have an example of order, because different things are combined to produce a single effect. Each contributes in its own measure towards the same end, viz., the formation of a clear picture on the retina.

Order Demands Intelligence.—How did the camera come to be made? You have your choice of just two answers, viz., that it was made by chance or by intelligence. Now, you know that it could not have been made by chance: such an explanation is so foolish that you would regard it as a jest. You need no help whatever to convince you that the camera was put together by an intelligent workman.

How did the human eye come to be made? By chance? No: that is an absurd reply. The human eye was made by some intelligent being.

The Maker of the Human Eye Possesses Power and Intelligence without Limit.—Make the following supposition: Suppose that all the parts of a camera lay scattered about the table, and suppose you saw them rise up and move towards one another and fit themselves together—would you say that this happened by chance? No; you would say that it was brought about by some intelligent, though invisible, worker, and you would add that he must indeed possess very wonderful powers.

Now take a step further. Suppose that the case, the lens, and the sensitive plate were all ground to the finest powder and mixed thoroughly together; suppose that the minute fragments of each part sought one another out, and fastened themselves together again; and suppose that each part thus completed took up its proper place so as to give us a perfect camera—would you say that this was due to chance? No, but you would protest that here there was need of a worker, still more intelligent, still more powerful.

But we are not done with our suppositions. There is one more which we must make. Suppose you saw just a single tiny speck of dust on the table before you; suppose that, having grown to twice its size, it broke up into two particles, and that each of these two particles, having doubled its size, broke up into two others; suppose that this process of growth and division went on, and that, during its progress, the particles managed to build up the case, lens and plate; suppose, in other words, that you saw one and the same minute fragment of matter produce such widely different things as the case with its blackened sides, the transparent lens with its mathematically accurate curvature, the sensitive plate with its chemical dressing, the aperture with its light-control, and last of all, the mechanism for focusing. What would you say to such a supposition? You would be tempted at once to stamp it as utterly improbable. You would protest, and with good reason, that only an all-powerful being could get a single speck of dust to behave as we have described, to make it multiply itself, and, while so doing, form unerringly, and piece together, an ingenious mechanism.

But is there really any improbability in the occurrence of which we have just spoken? No; the very eyes with which you have been reading this page are witnesses against you. Each of them began as a single particle of matter: the hidden worker acted upon it, made it multiply itself millions of times and made it develop such utterly distinct things as the eye-ball, the retina, the crystalline lens with its controlling muscles, the contractile pupil, along with other parts equally marvelous which it is unnecessary to mention. That hidden worker is a being whose power and intelligence our minds cannot measure.

The Maker of the Human Eye is God.—He who has made the human eye is a spirit; He is a spirit because He is an active intelligent and invisible being. He is one to whom nothing is hard or impossible. We call Him God.

Further Evidence For This Conclusion

God's Wisdom and Power.—1. The human eye, as we have explained grows from a single particle of matter; but the entire body with its

flesh, blood, bone, muscle, its various limbs and organs, grows in precisely the same way. It begins as a single living cell which multiplies itself, and gradually forms every part. That living cell small as it is, is far more wonderful than any machine that man has ever made. You can show how a watch does its work; you can show how the movement of the spring passes from one part to another, until finally it is communicated to the hands; but you cannot show how the living cell does its work: it is wrapt round with mystery—why? Because the mind that made it is too deep for us to fathom. But the mystery lies not only in the manner in which the cell works but in the results which it produces. As fruit, flowers, foliage, bark, stem and roots come from a single seed, so the wonderful powers of man, his sight, his hearing, his other senses come from the living cell. The more intricate and ingenious a machine is, the greater testimony it is to the cleverness of its maker: but there is no machine in the world that can be compared with the living cell which builds up a man capable himself of making machines and of attaining to eminence in art and science.

The power displayed in the development of the living cell is on a par with the wisdom. It is a power exerted, not through hands and muscles, but by a mere act of the will. God commands the development to take place, and nature obeys Him.⁵

2. We have proved God's existence from a few special instances of order, but we could have argued with equal success from anything whatever in the visible world: the very stones you tread under foot are made up of molecules each one of which, when studied scientifically, is found to possess a structure that could have been given to it only by a wise architect: it is as clearly the work of intelligence as is the house in which you live.

We read that in olden times a certain man was accused of denying the existence of God. Stooping down, he picked up a straw from the ground: "If I had no other evidence before me but this straw," he said, "I should be compelled to believe that there is a God." He meant that wisdom alone could have devised the special tubular shape in virtue of which a very small quantity of matter supports an ear of corn, and allows it to toss and away freely with the breeze.

Proof from Law in Nature⁶

All Nature is Obedient to Law.⁷—That the universe is obedient to law is a truth which forms the very basis of all physical science:

(1) Inanimate matter is subject to law.—(a) In Astronomy, the laws of Kepler and Newton have exhibited the heavens as forming so exact a mechanical system that seemingly irregular occurrences, such as eclipses and the return of comets, can be predicted with certainty. (b) In Physics, the laws of sound, heat, light, and electricity, work so perfectly that results can be calculated in advance with mathematical accuracy. (c) In Chemistry, substances are found to have definite attractions and affinities and to combine according to fixed laws. In all other branches and sub-divisions of physical science the same regularity is observed. Everywhere, like agents in like circumstances produce the same effects.

(2) Animate matter is subject to law.—(a) All living things are subject to fixed laws of nutrition, growth, and reproduction. Plants, animals, and men develop from a single living cell. In the higher forms of life, in man, for instance, that cell multiplies itself many times, gradually building up a great complexity of organs, such as the eye, the ear, the heart and lungs. (b) Every living thing possesses the capacity to repair its worn parts. (c) Among the lower animals, every individual of the same species is endowed with the same set of useful appetites and tendencies in connection with the quest for food, the defense of life the propagation of its kind, and the care of its offspring. (d) The same holds for man, who, in addition, possesses inclinations in keeping with his rational nature. Impelled by the desire for truth and the love of beauty, his mind builds up many wonderful sciences, and produces all the marvels of literature and art. In its movements it is subject to certain laws, the laws of thought just as the seed, developing into stem, leaf, and flower, is subject to the laws of growth.

(3) Animate matter is subject to, and served by, the laws of inanimate matter.—(a) All living things are subject to the laws of inanimate matter. Nutrition, growth, and many other processes take place in accordance with the laws of chemistry. The laws of gravitation and energy are as valid for the living as for the non-living. The tree, for instance, which stores up the energy of the sun's rays, returns it later on when its withered branches burn on the hearth. (b) Animate matter is served by the laws of inanimate matter. Examples: Gravitation has so placed the earth in relation to the sun that it receives the moderate quantity of light and heat necessary for the support of organic life.... The air contains in every 100 parts nearly 79 of nitrogen and 21 of oxygen gas, together with .04 of carbonic acid, a minute proportion of ammonia and other constituents, and a variable quantity of watery vapor. In pure nitrogen, man would suffocate; in pure oxygen, big body would burn out rapidly like a piece of tinder; without carbonic acid plant life would be impossible.... The plant exhales oxygen and inhales carbonic acid; the animal exhales carbonic acid, and inhales oxygen: thus, each ministers to the life of the other.... The water, drawn by evaporation from the sea, drifts in clouds, and descends in rain on the mountains, thus feeding the wells, the streams and rivers, so necessary for living things.... Bodies contract with a fall of temperature, and yet water expands when its temperature falls below 4 Centigrade. Hence, ice is lighter than water, and forms a surface-covering which, being of low conductivity, prevents the rapid congealing of the entire body of water and the destruction of living things beneath.

(4) The whole universe, we may say in conclusion, is guided by law. Everywhere there is order. Everywhere there is admirable arrangement. Everywhere there are fixed modes of action.

The Laws of Nature could not have been produced by chance or by a cause acting blindly, which is but another name for chance.—Is it necessary to refute the absurdity that chance could have generated a law? Law is the exact opposite of chance. Fixity is the characteristic of law; variability, the characteristic of chance: (1) Four rods of equal length, flung aimlessly from the hand, may fall into the exact form of a square. It is barely conceivable that this may happen once or twice; it is utterly inconceivable that it should happen a hundred times in unbroken succession; but what should be thought of the conceivability of its never happening otherwise?⁸ Yet this last must be realized in order to give us the basis of a law. (2) If the generation by chance of such a simple law be impossible, how can we measure the absurdity of supposing that chance could have produced the vast complexity of laws that rule the universe, the laws whose operation guides the course of planets, and accounts for the growth and reproduction of living things, the instinct and tendencies of animals the work of bees, the nest-building of birds, the activity of the mind of man?

The Laws of Nature have been Imposed by a Lawgiver.—(1) The arguments by which we have shown that the laws of nature are not due to chance avail, also, to prove that those laws cannot be due to any unintelligent cause we choose to name. Therefore, they must be due to some great intelligence distinct from matter. They must have been ordained and imposed by a Lawgiver. And, as the statesman frames his legislation for a definite purpose, so, also the Lawgiver of the universe imposed His laws to achieve the ends He desired. The orderly arrangement produced by His laws was intentional. It was in accordance with His preconceived plan or design.

(2) Observe how the necessity for an intelligent author of the Laws of Nature is enforced by considerations such as the following:

(a) Great intelligence and skillful workmanship are required to construct a steam-engine that can feed itself with fuel and water. But indefinitely greater would be the intelligence and power which could make the iron-ore come, of itself, out of the bowels of the earth, smelt and temper itself, form and fit together all the parts of the engine, make the engine lay in its store of water and coal, kindle its furnace, and repair its worn parts. Yet this is an everyday process of nature in the case of living organisms. And, as intelligence is needed to guide the hands of the mechanic who builds the engine, much more is it needed to combine and direct the lifeless forces of nature in producing more marvelous results.

(b) The lower animals in the work which they do, often exhibit instances of wonderful order. They perform with great skill a series of actions for the achievement of a definite purpose. Take the following example: There is a kind of sand-wasp⁹ which prepares a worm as food for its larvae by cutting as with a surgical lance and paralyzing all the more-nerve centers, so as to deprive the worm of movement but not of life. The sand-wasp then lays its eggs beside the worm and covers all with clay. It has got its surgical skill without instruction or practice. It lives for but one season. It has not been taught by its parents, for it has never seen them. It does not teach its offspring, for it dies before they emerge from the earth. It has not got its skill by heredity. For what does heredity mean in such a case? It means that some ancestor of the insect, having accidentally struck the worm in nine or ten nerve centers, managed somehow or other to transmit to all its descendants a facility for achieving the same success. But it is mere folly to say that this chance act of the ancestor rather than any other chance act should become a fixed habit in all its progeny. And could the original success have been due to chance? Where the number of points that might have been struck was infinitely great, the chance of striking the nerve centers alone was zero. But perhaps the insect gets its skill by reasoning? No: (1) because reasoning does not give dexterity; (2) because it is impossible that each insect of the same tribe—and all are equally expert—should discover by independent reasoning exactly the same process; (3) because, when the insect is confronted with the slightest novel difficulty, it acts like a creature without reason and is powerless to solve it. Therefore, the intelligence which the sand-wasp exhibits does not reside in the insect itself but in the mind of God: it was He who planned the work: it is He who moves the insect to perform it.¹⁰

(c) Man is as much a product of nature as the bee or the flower. The elaborate works of civilization, the arts and sciences, and all the accumulated knowledge of centuries, are as certainly due to the working of nature's laws or forces, as the honey-cell of the bee or the perfume of the flower. Is it for a moment conceivable that those laws were not directed by intelligence, that man and all his achievements could have sprung from a source, blind and lifeless, and, therefore totally inadequate to account for them?

The Lawgiver is God.—(1) As the carpenter is distinct from the table he makes, the architect from the house he designs, as every cause is distinct from its effect, so the Lawgiver of the universe must be distinct from the universe and its laws. (2) A scientist of exceptional talent, aided by perfect apparatus for research, succeeds after many years of study in understanding, more or less imperfectly, the working of one or two of those laws. Must not, then, the Author of them all be a Being of vast intelligence? (3) That Being must possess free-will. Else, how does man by a law of his nature come to possess such a faculty? And why should the laws of nature be precisely as they are—we see no reason why they might not be otherwise—except from the act of a Being free to choose as He pleases? The Being who possesses these perfections we call God.

II Proof From Motion

The Existence of Motion in things around us is proved by innumerable instances.

In the Visible World Nothing moves entirely of itself, i.e. without help.¹¹ You can divide all things in the world into two classes, viz., things animate and things inanimate, or, things with life and things without life.

(1) No lifeless thing moves without help. This obvious truth can be illustrated by a thousand examples. The marbles with which a child plays are propelled by his fingers: the stone falling through the air is being pulled down by gravity: the steamer gliding through the water gets its motion from the engine—and so on for instances without number. If then you see any quantity of inanimate matter in motion—any quantity be it ever so great or ever so small—you are certain that it must have got help from without.

(2) No animate or living thing moves without help. This, at first sight, is not so clear, yet a little reflection will show that it is true. (a) Living things move themselves but can do so only by receiving help from outside. Both animals and plants require food; it is the source of their energy; without it they would cease to be living things. (b) Life, or the principle of life, is not like the movement of a particle of matter; life is not energy, but a director of energy. The total energy of a plant or animal during the whole course of its existence (including the store of energy which it may possess at death) is exactly equivalent to the energy which it has absorbed from without; and this equality remains, no matter how the energy may have been expended. (c) The principle of life never begins its work, until it is stimulated from outside. One illustration will suffice: take, for instance, the grain of corn in the earth; the living principle in that grain will remain inactive, unless the proper conditions of warmth, moisture, etc., are present.

"But," you will say, "what of our free-will?" Using the word 'motion' in a broader sense to mean more than the movement of something material, cannot we say, and must we not say, that our will moves itself?" Yes, but it never moves itself without help. The will cannot choose between two courses, unless those courses have been laid before it by the intellect. "But what of the intellect? Does it not conceive ideas unaided?" No; it cannot take its first step, until it gets information from one or other of the five senses; and the senses themselves would remain forever passive, unless stimulated or affected by things distinct from them.¹²

There would be no motion in the world but for help given by someone who is outside the world.—Since nothing in the world moves of itself, since everything requires help of some kind for its motion it follows that there must be some Being outside the world who gave it its first motion.

Suppose that there are five children who are willing to obey you strictly: suppose you get each to promise not to speak until spoken to; and suppose you lock all five in a room by themselves: then, no word would ever be spoken in that room, unless someone from outside were first to speak to the occupants. It is so with the motion we see in the world; as the silence in the room would never have been broken but for the voice from without, so the motion in the world could never have existed but for the motion given by some Being outside the world.

So far we have been thinking of the world as it is today, with its great number of living as well as lifeless things; but it is the teaching of Science, that at some time in the distant past the earth was a fiery globe revolving then, as now, round the Sun, but with no life on its surface. How did it get this motion? Scientists say it got it from the Sun. The Sun while spinning round flung off several fragments: these fragments are the planets of which the earth is one. But how did the Sun get its spinning or rotating motion? It got it from a larger moving mass of which it once formed part—or as some assert, the Sun with its motion was produced by a collision between two stars. But, again, how account for the motion of the larger mass, or of the stars. There is no answer from Science: and, even if there were, it would merely tell us of another moving body or bodies whose motion would equally need explanation. Here then is the problem: the universe was formed from a quantity of moving matter; who gave that matter its motion? Someone who is outside the universe, and is no part of the universe. Someone who is truly called the First Mover.

The First Mover is God.—If you suppose that he who gave the world its motion was Himself moved by a second being, the second by a third, and so on indefinitely, you make a supposition which leads nowhere, because it would still remain true that there must be some being who is the fountain-head of all that motion, there would still be a First Mover. The hands of a watch are moved by one of the wheels, that wheel is moved by another and so on. But it is quite absurd to think that we can do without the mainspring by merely increasing the number of wheels indefinitely.¹³

The First Mover cannot be a lump of inert matter; if he were, his motion would have been derived from without; he could not have been the First Mover.

He is not like us: he is not united to a body; if he were, his knowledge would depend on external stimulus, and he would not be the First Mover. He must be a Being whose knowledge had no beginning, whose mind was never in darkness.

He Himself is the source of all His activity. He is a Spirit, the Lord and Master of the universe: His name is God.

Note.—According to the capacity of the pupils, the teacher might explain that in God the mind knowing is not distinct from the object known that the mind knowing is God himself, and the object known is likewise God himself; and that through His self-knowledge He has a perfect knowledge of His creatures. This identity in God of the mind knowing and the object known enables us to understand how His knowledge never had a beginning.

III Proof From Causality

The only full and satisfactory explanation of the universe is found, as we shall see, in the existence of a First Cause, to whom all things and all changes, all facts and events are directly or indirectly due.

Take anything you please in the world about you—let us call it A—and try to account for its existence. You discover that it has been produced by B; that B has been produced by C; and C by D. Now, if the last cause named by you in this or any other such series be itself an effect, you are still without a true and full explanation of A, and you will not find that explanation until you arrive at a first cause, a cause which is not an effect, a cause which has not derived its existence from anything else, a cause which is uncaused and self-existent.

If it be objected that A may be caused by B, B by C, and C by A, thus moving in a circle, as it were, no answer: (1) If A has been caused by B, and B by C, it follows that A has been caused by C. But if A has been caused by C, then C cannot have been caused by A. (2) If A is caused by B, then B must have existed before A; if B has been caused by C, then C must have existed before B. Therefore C existed before A, and could not have been caused by it.

The series of effects and causes, A, B, C, etc., leads us therefore to a First Cause which is uncaused. Being uncaused, it was never brought into existence by anything else; it always existed; it has existence of itself; it is self-existent. It is idle to inquire why it exists, for it exists of its very nature." The First Cause is thus self-explanatory, accounting not only for itself but for A and B and C, and for each and every member in any other such series which we choose to set forth.

Now, since there is nothing in the visible world about which we cannot ask the question, why it exists, it follows that the independent being who is the explanation and cause of all things in nature must himself be distinct from all and superior to all.

Each individual thing in the visible world, as we have seen, needs an explanation, and finds it, directly or ultimately, in the existence of a first cause. But the universe in its entirety likewise needs an explanation: it is not self-explanatory; it is not, the full explanation of all that takes place within it.—The universe is made up of a certain number of constituents; the action of any one of them (X) may be explained by its properties and by the influence exerted on it by all the others, the action of the second (Y) may be explained in a similar way, and so on, yet this leaves still unexplained why the constituent X existed at all, and why it had Y, Z, K, etc., acting upon it, and not a totally different set of influencing companions. Hence the universe considered as a whole, is not self-explanatory: it needs an explanation just as much as the smallest thing in it. It points beyond itself; it points to an uncaused being outside nature, a being that contains its own explanation, and is the final explanation of everything else, the first and sufficient cause of all things.

Since this being is the author of the order of the universe, the author of the intelligence and free-will of man, he himself in some super-eminent way, must possess intelligence and free-will, for the cause must be sufficient to account for the effect.

This First Cause, this Self-existent and Intelligent Being we call God.

Note.—(1) The student should observe that a physical cause, that is, a cause whose operation comes under the observation of the senses, can never fully account for its effect. Let us take an example:—Suppose we are asked to account for the letters we see in this printed page. The physical causes of those letters are the metal type, the ink, the absorbent nature of the paper, the printer's hands and eyes. But, clearly, these

causes do not explain how the page came to be printed. The real cause is not physical. It is the free-will of the printer. Note how the example applies to the motion we observe in the world around us: the physicist explains the motion of the train by the motion in the piston of the engine; the motion in the piston by the expansion of steam; the expansion of steam by the heat from the coal; the energy in the coal, which is nothing more than compressed vegetable matter, by the sun's heat and light; the sun's heat and light, by the motion of the nebula out of which it was evolved. Therefore, as far as a complete explanation is concerned, we find ourselves, at the end of a long series of physical causes, just where we were at the beginning. The motion of the nebula requires explanation just as much as the motion of the train. Thus we are driven once more to find the ultimate explanation of all physical phenomena in the will of some all-powerful Being distinct from the world.¹⁵

Note.—(2) The Existence of a First Cause is demanded by the Law of the Dissipation of Energy.—Men of science agree that the two following principles belong to the fundamental laws of physics.¹⁶

(a) The amount of energy in the universe is constant."

(b) Energy existing as uniformly diffused heat is not available for useful work.

Every student of physical science knows that a portion of the energy employed in doing work appears as heat, which tends to diffuse itself uniformly. The amount of energy thus converted into diffused heat is constantly increasing, and as no useful work can be extracted from it, it is justly described as the growing waste-heap of the universe. Hence, even if the sum of energy in the universe be constant, the amount available for useful work is continually diminishing. The universe, therefore, will finally arrive at a state of rest, in which all work, and hence, all life such as we know it, will be impossible.

But the useful energy of the universe, which is thus constantly diminishing, was evidently finite at all times, and hence can only have been diminishing for a finite time. Wherefore it follows that the useful energy of the universe had a beginning. With Lord Kelvin, we may compare the universe to a lighted candle: "Regarding the universe," he says, "as a candle that has been lit, we become absolutely certain that it has not been burning from eternity, and that a time must come when it will cease to burn." Or, we may compare it to a clock which is going. The movement of a clock is due to a spring which is slowly uncoiling. There is no mechanism within the clock to rewind the spring. At some point in the future it will stop. At some point in the past it was wound up by the hand of a man, or by some agency distinct from itself. It is so with the universe. As surely as the springs of its energy approach at every instant the final stage of complete relaxation, so surely were they, at some instant in the past, wound up by some extrinsic agency, by the hand

IV Proof From Dependence (Usually called the Proof from Contingence)¹⁸

The Meaning of "Dependence" and "Necessity."—Contrast these two statements:

"The sky is clear," "The whole is greater than the part."

The former is a dependent truth; the latter is an independent or necessary truth.

The former may be true at this moment, but need not be true; its truth depends on the fulfillment of a condition, viz., that there be no clouds or mist: it is therefore a dependent truth. The latter is true at this moment and must ever be true; its truth does not depend on the fulfillment of any condition: it is an independent or necessary truth.

(1) If a statement which is now true was not always true, we know at once that it is a dependent truth; the very fact that it is a temporary truth shows us that it is not a necessary truth. May we infer from this that every statement that is true for all time must be a necessary truth? No. We can suppose that the statement, "The sky is clear," was always true and always will be true; we can suppose it to be eternally true; but even so, our supposition will not make it an independent truth; it will remain a dependent truth, eternally dependent on other truths.

A dependent statement such as, "The sky is clear," no matter how long it may continue to be true, can lose its truth at any instant: our mind admits the possibility without hesitation; but an independent statement, such as, "The whole is greater than its part," can never cease to be true; our mind rejects the possibility as absurd and inconceivable. A dependent statement is always reversible; it is subject to death, as it were; it is a perishable truth; while an independent statement is a truth which is irreversible, deathless, imperishable and necessary.

(2) The nature of anything is shown to us in its definition; the definition tells us what precisely the thing is, or how it is constituted. We define "the whole" as "the sum of two or more parts." The very nature of "the whole," therefore, compels us to assert that "the whole is greater than its part." The assertion is really contained in the meaning of "the whole."

Now look at the other statement, "the sky is clear." We may define the sky as "the visible region above the earth." It is obvious that the nature of what we call "the sky" does not compel us to assert that "the sky is clear." Such an assertion would not follow from our definition of "the sky."

It is the nature of "the whole" to be greater than its part.¹⁹ It is not the nature of "the sky" to be clear. The truth that "the whole is greater than its part" is true of itself; it does not lean for help on any other truth. The truth that "the sky is clear" is not true of itself; it needs outside help to make it true.

(3) An independent statement explains itself: it shines by its own light; it does not force us to look elsewhere for the reason why it is true. A dependent statement is the opposite of all this: it does not account for itself; it shines by a borrowed light; it leaves us dissatisfied, and sends us farther afield until we find a self-explanatory truth.

Now, as a truth may be either dependent or independent, so too an existing thing may be either dependent or independent. An existing thing is dependent:

(1) if it exists for but a time; or

(2) if existence does not belong to its nature; or

(3) if it compels us to look outside it for the reason of its existence.

If, therefore, any one of these three conditions has been verified, the thing derives its existence from without.

Everything in the World is Dependent.—(1) Everything in this world about us is subject to change and death. Plants, animals and men come

into existence and pass away. Inanimate matter suffers endless variations; new substances are being constantly built up and broken down.²⁰ All these things are obviously dependent, because their existence is merely temporary; but even though their existence were everlasting, it would still be, as we shall see, a dependent existence.

If we were asked to give the list of things that make up the nature of man or, in other words, if we were asked to set down all those things which constitute a man, we should not mention "existence" as one of them. The description of a man remains precisely the same whether he exists or not, or whether he exists everlastingly or not, and this is true of any particular thing in the world we choose to name. Existence, therefore, does not belong to the nature of man, nor to the nature of anything else in the world." Hence we say that everything in the visible world is dependent or contingent, i.e., that it need not exist. Not merely is there no necessity for its coming into existence, but there is no necessity for its continuing in existence.²¹ Nothing in the world exists necessarily. Nothing in the world has any grip on existence.

(2) If we examine the world at any stage of its history, we shall arrive at the same conclusion. Go back, if you will, to the remote age when, according to scientists, nothing existed but the fiery nebula out of which all things around us today are supposed to have been evolved. Here again you find a merely dependent thing: (a) it existed but for a time; (b) it was composed of a definite number of particles linked together in definite ways, and the fact that it possessed such a particular arrangement and no other shows its dependence on something outside itself; it needs explanation quite as much as the blast-furnace in one of our factories.—Existence does not belong to its nature.

(3) With scientists we may conceive the possibility that, amid all the transformations through which the world has passed, fundamental particles of some simple kind may have persisted fixed and unchanged, serving as the material out of which all else has been made.²³ But these particles, as scientists themselves admit, would be dependent things; (a) they would possess only a definite, limited power, a fact which would send our mind in quest of further explanation; (b) the power exerted by them would be described by scientists—to put their view in the simplest form—as a certain amount of activity;²⁴ but this activity would need explaining quite as much as the activity of our muscles.²⁵

Dependent Things are held in Existence by an Independent Being.—Since the visible world with all that it contains is dependent, it must be held in existence by some being distinct from it. If this being were dependent on a second and higher being, the second on a third, the third on a fourth, and so on endlessly, we should thus have an infinite series; but the entire series would be dependent quite as much as any member of it, and would not account for its continued existence. Therefore, no explanation of the continued existence of ourselves and all else in the world can be found, unless we admit the existence of an independent or necessary being, existing of itself, existing of its very nature.

Physical scientists are not in disagreement with us. Max Planck, one of the most eminent of them, expresses a common view in the following quotation (his word "absolute" is equivalent to "independent"; his words "accidental," "contingent" and "relative" have the same meaning as "dependent"):

"From the fact that in studying the happenings of nature we strive to eliminate the contingent and accidental, and to come finally to what is essential and necessary, it is clear that we always look for the basic thing behind the dependent thing, for what is absolute behind what is relative.... After all I have said, and in view of the experiences through which scientific progress has passed, we must admit that in no case can we rest assured that what is absolute²⁶ in science today will remain absolute for all time. Not only that, but we must admit as certain that the absolute can never finally be grasped by the researcher.²⁷ The absolute represents an ideal goal which is always ahead of us and which we can never reach."²⁸

The search of the physical scientist for the independent, self-existent being is doomed to failure, because his sphere of inquiry is restricted to the visible world, where he will never find anything but dependent things or activities like those with which we are familiar; his last word will take us no farther than the theory of the Indian sages who said that the earth is supported by an elephant, the elephant by a tortoise, and the tortoise by—²⁹ he will never reach the end of his inquiry, because he will never see the Absolute, i.e., God, in the microscope.

The Independent or Necessary Being is God.—The Independent or Necessary Being, the giver of dependent existence and the upholder of every dependently existing thing, from intelligent man down to the least material thing, must be a great living Power: we call Him God. Existence must belong to Him as truth belongs to the statement that "the whole is greater than its part." He must be self-existent. He must be one who cannot, without an absurdity, be divested of His existence. He must therefore, be identified with existence itself, a concept which excludes every demand for further explanation and sets our mind at rest.

Note.—(1) For the purpose of this argument, it would have been sufficient to show that there is at least one contingent being in the world. From that one contingent being we could have proved the existence of a Self-existent Being.

Note.—(2) To the beginner in these studies, the proofs from Motion, Causality and Dependence may seem to be much alike. It is therefore well to point out that each leads to a distinct notion of the Supreme Being:

The proof from Motion shows that He is not moved by any other being.

The proof from Causality shows that He is not produced by any other being.

The proof from Dependence shows that He exists necessarily; that He exists without the help of any other being.

In addition to the proofs for the existence of God set forth above, there are many others. Among them may be mentioned, in particular, the Aesthetic Argument, based on the perception of beauty in the universe, the Ethical Argument, based on the voice of conscience, and the Moral Argument or the Argument from the universal belief of mankind.

V The Nature Of God As Known From Reason

By the light of pure reason we may arrive at some knowledge of the Nature of God from the fact that He is the First Cause, eternal, self-existent.

We can show that, since by the mere act of His will, He can call things out of nothingness into actual existence, and annihilate them at His pleasure, He must be the Master of existence, subject to no deficiency and containing within Himself in some higher way every created perfection that can possibly exist; in other words, we can show that He must be infinitely perfect—infinitely perfect in Power and Knowledge

and Goodness and in the splendor of Beauty. But, to those who have been taught by Bethlehem and Calvary to know Him and love Him with a warm, personal love, our philosophic arguments must appear to be as chill and formal as the propositions of geometry. The Incarnation of the Son of God has given sight to us men who were groping in darkness; He who dwelt among us has thrown a light on the Divine Nature which does not shine from the ablest treatise on philosophy.

Endnotes

1. Attention is directed to footnote 47, where it is shown that the resurrection of Christ enables us to dispense with the philosophical proof for the existence of God given in this chapter.

2. Order is unity or uniformity amid variety. Order is present when several different things combine to produce a single effect or result. Examples: (1) A watch consists of the case, the dial, the hands, a multiplicity of wheels and other arrangements: each part contributes towards the production of a single result, viz., the convenient indication of the hour. (2) the human body consists of a great number of members and organs, yet all help, each in its own way, towards the well-being of the whole.

Order is the result of design. Design may, therefore, be defined as the planning of order.

3. Principa III, Sch. Gen.

4. Text of St. Thomas Aquinas.—We observe that some things which are without understanding such as natural bodies, operate for an end (as appears from the fact that always or more frequently they operate in the same way to arrive at what is best): whence it is clear that they attain this end not by chance but by intention. Now, these things which do not possess understanding operate for a purpose only in so far as they are directed by a being endowed with intelligence: just as an arrow is directed by the archer. Therefore, there is an intelligent Being, by whom all the things of nature are directed to their end. And this Being we call God." St. Thomas, Summa Til. I, q. 2, a. 2.

5. A remarkable instance of design appears in the set of organs for the reception, mastication, and digestion of our food. The mouth with its flexible muscles by which it opens and closes, receives the food; the tongue and palate register its agreeable or disagreeable taste; the teeth cut and crush it; the salivary glands pour out their juices to prepare it for digestion; the muscles of the throat draw down the masticated food through the alimentary canal to the stomach where the digestive juices convert it into such a form that it can bring nutrition to every part of the body. This admirable system of organs, all conducing to the achievement of a single purpose, viz., the preservation and strengthening of life, bears the unmistakable impress of design.

6. In the proof from Order, we examined separate things, such as the human eye and the human hand we showed that each is the outcome of design; that each, therefore points to a Designer.

In the proof from Law, we assume with modern adversaries that all instances of orderly arrangement in the world are due to the operation of Nature's Laws. We prove against them that these Laws themselves give us no final explanation, but demand the existence of an Intelligent Lawgiver.

7. A law of nature, or physical law, may be merely a formal statement of what regularly occurs in nature, or it may denote the cause of such regularity. We use the expression in the latter sense: let us then define a law of nature as "the cause of a certain regularity observed in nature." It must not be inferred, however, that we claim any exact knowledge of the cause of each set of regularly occurring phenomena. That the cause exists we are certain, but as to its precise nature and mode of operation we need not profess to know anything.

8. We abstract for the moment from the rare interpositions to which according to the doctrine of miracles, the laws of nature are subject

9. The ammophila hirsuta.

10. Fabre, the chief authority on entomology, from whose work, "Souvenirs Entomologiques" (Paris: Delegrave) the above example is taken, says that the behavior of the larvae is still more astounding. While eating into the live worm, they take care to avoid the vital parts; were they to injure even one of these, the worm would die and they would perish for want of fresh food. This, says Fabre, is "the miracle of miracles."

Fabre was a Catholic and for a long time an indifferent one. Many years before his death he was touched by God's grace, in a spirit of great devotion and penance, he returned to the practice of his religion and continued faithful to the end. But even during his period of indifferentism, he did not deny God's existence. He never had anything, but scorn for the feeble and foolish attempts of other scientists to evade the truth that instinct points straight to God.

11. Our argument does not require us to specify the nature of the help. The help may be a true cause or a stimulus, or it may consist in the removal of an obstacle.

12. You may urge your objection still further and say: "An angel is not in any way dependent on bodily senses. The intellect of an angel therefore, can move itself, that is, it can obtain ideas without external help." No; the intellect of all angel could not perform its first act, unless it were affected in some way by an object distinct from it. Some one has to make the link between the mind of the angel and the first truth it knows.

13. But," you may say, "the series of wheels could be infinite." Very well, let us suppose so. But let us suppose also that the wheels have the gift of speech and can answer a question. Ask any one of them, "Are you the cause of the motion I see in you?" It will answer, "No," and all the members of the infinite series will give the same reply. We get an infinite number of "Noes" to an infinite number of questions. We must therefore look outside the infinite series for the source of that motion which we see flowing from member to member.

14. Just as it is idle to inquire why a circle is round, for it is round of its very nature.

15. We may bring out the point of this argument by means of a humorous illustration used for a somewhat different purpose by W. G. Ward in his work, "The Philosophy of Theism," vol II, p. 173. He supposes a "philosophical" mouse to be enclosed in a pianoforte. The mouse discovers that every sound of the instrument is produced by a vibration of the strings, and the vibration of the strings by taps of the hammers. "Thus far I have already prosecuted my researches," says the mouse. And he goes on with all the blithe optimism of the Atheist: "So much is evident even now, viz., that the sounds proceed not . . . from any external agency, but from the uniform operation of fixed laws. These laws may

be explored by intelligent mice, and to their exploration I shall devote my life." And so, the mouse arguing himself out of the old belief of his kind, becomes convinced that the piano-player has no existence.

16. These laws are generalizations from a number of observed facts.

17. Energy is the power of doing work. Any cause which changes or tends to change a body's state of rest or motion is termed a force. A force does work when it overcomes a resistance. Examples: The force exerted by a horse, in drawing a wagon, does work. The force exerted by a man in raising a weight, and the pressure of the steam in moving the piston of an engine, also do work. Cf. Chapter IV Objections B, 2.

18. This argument is a direct deduction from established physical laws: See Preston's "Heat," pp. 296-298. Addressed to Materialists, it is an "argumentum ad hominem," i.e., an argument based on their own admissions. They, in common with all physicists, regard the laws of energy as the very foundation of physical science. It has been suggested that there may be a means in nature for the sudden restoration of useful energy (cataclysmic theory). But this is merely a gratuitous assumption unsupported even by a scrap of scientific evidence.

19. Cf. footnote 36 of this chapter.

20. Consider, e.g., our planet alone: (1) The distribution of land and water is insensibly, but constantly changing; (2) the earth's rotatory motion is getting slower and slower, because the tide, the great bank of water piled up by the attraction of the moon, acts as a brake on it; (3) the motion of the earth round the sun is being retarded, because of friction with clouds of meteoric dust: the earth is, therefore, ever being drawn nearer to the sun. Enormous changes will result, after the lapse of ages, as a consequence of (2) and (3).

21. The point of the argument can be illustrated as follows:—Suppose that last year a sculptor gave you a full description of a statue he intended making, and that today you are looking at the successfully completed work. Your description of the statue, as it is now, would correspond exactly to the sculptor's description a year ago when the statue as yet had no existence. The description of the statue tells us the nature of the statue, and does not include the statement that "the statue must exist."

To borrow a term from chemistry, the description of a thing's nature may be called its formula. The formula shows us a possible being and nothing more; it shows us a being that can exist; it does not say that the being must exist. We can construct a great number of formulae corresponding to things actually existing, but we know that there must be an indefinitely greater number corresponding to things which, as a fact, have never existed and never will exist, and yet each one of these unknown formulae would fully describe the characteristics of a particular and possible being.

22. You may object that the soul of man is immortal, and therefore must go on existing forever without any help. No that is a false conclusion. The soul of man does not exist of itself; it does not exist without help; if it did, it would never have begun to exist; it would always have existed. But as long as it is kept in existence, it cannot fall to pieces like the body, because it is not made up of parts. Hence, when we say that it is immortal, we mean that it will last forever, unless He who holds it in existence withdraws His help.

23. Max Planck: "Where is Science Going?" p. 196. London: Allen & Unwin, 1933.

24. Electric activity "together with the elemental quantum of action." See Max Planck, *ibid.*

25. We might have ruled out the discussion of the nebula and fundamental atoms by simply asserting that the word "existence" will not be found in the description of either of them.

26. i.e., "deemed absolute," as the context makes clear.

27. i. e., the physical scientist.

28. *Op. cit.*, pp. 198, 199.