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MIRACLES, HISTORY, AND NATURAL LAW

I

As long as the enemies of Christianity attack the possibility or actuality of miracles, so long must the Christian obey the injunction of Peter: Be ready always to give an answer—an apologetic—to every man that asketh you a reason. At this date miracles are still to be defended because they are still attacked. As a particularly clear example that this is true one may mention the Auburn Affirmation. This document, in addition to denying the full trustworthiness of the Holy Scripture, explicitly attacks the Virgin Birth, the miracles wrought during Christ's life, and the Resurrection. Undoubtedly other denominations also include men who repudiate miracles, and thus an apologetic is commanded by Scripture.

Adequately to defend any part of Christianity, the whole system of theology which Scripture reveals must be defended. In a war a general does not willingly abandon half of his positions to the enemy in order to protect a few central points. And in battles of ideas it is not only safer, but it is actually easier, not to say absolutely necessary, to defend the complete position. However, while Scripture has given us a system, a single lecture, like a single military operation, can at best drive at but one point. Therefore the question of miracles alone will be raised, and even so, only one phase of the subject will be discussed. This restricted phase can be indicated in a preliminary way by recalling an attitude frequently taken towards miracles and history. People will, for example, accept Tacitus or Suetonius as reliable history, and reject Matthew and Luke because these latter authors have included in their books accounts of miracles. Now miracles, so these people argue, are scientifically impossible; and hence the New Testament, or at least the miraculous parts of it, must be discounted without historical examination, because of *a priori* scientific impossibility.

No progress in discussion is to be expected, however, before the chief term is defined, for it is essential to the defence

of miracles to state at the very outset what they are, and only afterward proceed to an explanation of how they can have occurred.

Some of the modernistic attempts to explain miracles are no less than the most tawdry of intellectual dishonesty. The piety which defends Scripture by explaining the feeding of the five thousand on the ground that when the boy opened his lunch box the others were inspired by his example to open theirs, and thus a huge picnic resulted, is a piety which deserves contempt, not intellectual refutation. How people who propose such explanations can pose as religious and moral leaders is beyond honest understanding. Whatever a miracle may be this type of device does not explain it, because of its absurd distortion of the text. Average morality dictates either an open denial of the alleged event, or an attempt to explain what the narrative actually contains.

On the other hand, no charge of dishonesty can validly be made against one who in his attempt to explain and defend miracles uses this or that scientific theory. Even though the critic consider the scientific theory absurd, even though the Christian believe the defence to be inadequate, yet so long as the exegesis is reasonable, the motive of the theorizer may be pure. While this principle should be recognized as applying to all future possibilities, its truth is most easily seen by referring to well known instances.

II

Some Christians, but by no means all, consider a miracle to be the effect of a higher law replacing the action of a lower law. They use a familiar analogy. While the law of gravitation, they say, causes an unsupported body to fall to the earth, if a man exert energy and hold the body, it will not fall. His holding the body does not violate the law of gravitation but supersedes it. A higher law thus takes the place of a lower one. Similarly in the case of miracles, they say, no law of nature is violated, but higher, spiritual laws intervene or supervene. The illustration is unfortunate, because, of course, the law of gravitation is not superseded; it continues in operation whether the body falls or not; nevertheless the notion of an unknown law's replacing a well-known law has been frequently advanced.

St. Augustine adopted this type of explanation and uses it in several passages. In one place he states the matter very succinctly.¹

God, the Author and Creator of all natures, does nothing contrary to nature; for whatever is done by Him who appoints all natural order and measure and proportion must be natural in every case. . . . There is, however, no impropriety in saying that God does a thing contrary to nature, when it is contrary to what we know of nature."

On first sight this passage may be interpreted to mean that the colloquial use of the term nature is mistaken; that, in fact, instead of trying to fit miraculous events into nature as commonly understood, we should reverse the process and redefine nature as that which God does, no matter how far removed the resulting definition may be from ordinary usage. But that St. Augustine's view of nature was not thus far removed from the common notion is seen in another passage.² While the statements are a little vague, it seems that St. Augustine considers a miracle chiefly as an unusual acceleration of natural processes. For example, the rain which waters the vine becomes juice which then turns to wine. So Christ at Cana turned water into wine, paralleling the natural process in a much shorter time. Likewise Aaron's rod which budded is essentially similar to the sawed-off section of the trunk of a tree which lying in the yard put forth little shoots. These illustrations seem to indicate that St. Augustine took nature in a fairly ordinary sense. What he would have said about the floating of the axe head, it is difficult to guess; but at any rate the emphasis falls on the speed of well-known natural processes.

Perhaps in the case of the axe head he might have had recourse, as others do, not to the speed of a process, but to a higher unknown law. Perhaps the illustrations in *De Trinitate* are not to be pressed, and the prima facie interpretation of the first and obviously definitive statement must be accepted. In other words, it is not so much our ignorance of how to accelerate the laws we know, as it is our ignorance of definitely different laws, which causes events to appear miraculous to us. Now, although St. Augustine was a thoroughly sincere Christian, a student may need to be cautioned against accepting uncritically

¹ *Reply to Faustus the Manichaean*, xxvi 3, Cf. *De Civ. Dei*. x 12, and xxi 8.

² *De Trinitate* iii, 5, 6.

the notion of a higher law's replacing a lower one. The value of the theory as a defence for Scriptural miracles depends on the type of law called higher. Perhaps St. Augustine was in general correct, but others have used the notion of a higher law to the disservice of Christianity. Schleiermacher and Ritschl accepted a higher law as the explanation of miracles, but the higher law they had in mind was merely the subjective religious emotion of the percipient. If a given event provoked the necessary wonder, or brought home the needed religious lesson, it was a miracle for the person so affected. The same event was also not a miracle because it did not produce the proper emotion in another person. Certainly, the greatest liberty should be allowed in the defence of miracles; something which at first is unfamiliar and queer may lead to acceptable results; nevertheless this particular interpretation does not seem to do justice to the principles of grammatico-historica exegesis.

III

With these concrete illustrations as guides and warnings before the mind, it is possible to state the general principle which applies to all theories of miracles. That is, it is possible to state exactly what the Christian is obliged to explain.

Now to state exactly is to define; and there are two general types of definition. Some definitions are denotative, others are connotative; and at least some classes may be defined in both ways. A denotative definition is one which mentions each object in the class to be defined; a connotative definition is one which indicates a class of objects by means of a quality which each member of the class possesses but which is not possessed by any object outside that class. One could define *American citizen* connotatively, somewhat as follows: an American citizen is any human being born in the United States, or born abroad of parents who are citizens, or who has been naturalized by the proper process. Everyone who satisfies this condition is a citizen, and everyone who does not satisfy the statement is not a citizen. To define American citizens denotatively it would be necessary to mention them all by name. Although awkward to do so here, it is theoretically possible. The connotation, then, is a common quality, or complex of qualities; denotation is an enumeration.

Now the definition of miracle, if one is to envisage clearly the primary matter of defence, must be a denotative definition. In fact, it must be left an open question whether a connotative definition is possible. But if possible, it is not the primary matter of defence. The Christian is primarily interested in the historical or phenomenal event—the passing of the Red Sea, the fire which consumed Elijah's sacrifice and the rain which followed, the resurrection of Christ's body from the grave, the blinding of Elymas—these are what the Christian is chiefly interested in defending.

Nearly all the attacks on miracles have been based on a connotative definition, and the discussion which ensues sometimes illustrates the danger which this type of definition can bring with it. In one such discussion a certain gentleman in attacking the possibility of miracles had so defined miracle as to involve a certain view of nature; then when the Christian protested that the actual events recorded in Scripture need not be interpreted as had been done, but could much more plausibly be interpreted in another way, the non-Christian replied to the effect that in that case the two of them were both agreed that miracles, as he understood them, were impossible. This, of course, was true, but the implications imposed by the non-Christian on the agreement constituted a fallacy. What logically should have followed was an investigation, on the part of the non-Christian, of the historical evidence concerning the events recorded in Scripture. The new definition had made them possible; evidence might show them to be actual. But the non-Christian had no thought of considering the evidence. He still contented himself with the verbal agreement that miracles, connotatively defined, *i.e.* as he understood them, were impossible, and he failed to see that miracles denotatively defined, *i.e.* as recorded in Scripture might be actual events.

Now it may prove necessary, before an adequate defence of miracles is developed, to give a connotative definition. Most Christians have thought so. To be sure, some theory is needed, for to offer no theory is to abandon Christianity to the attacks of its enemies. But even if connotative definition prove absolutely indispensable, the primary interest always remains centred in the events enumerated in Scripture.

From a non-Christian point of view, however, the enumeration is not so important as the connotation of some of these

events. It is claimed that some events recorded in Scripture are inconsistent with natural law, and since they are scientifically impossible no further study of them would prove fruitful. Thus a philosophic or scientific analysis must precede historical research because it is argued that while historical or archæological investigation of Tacitus and Suetonius may add to their credibility, one might as well search for the pot of gold at the end of the rainbow as to waste time on Matthew and miracles. David Hume, an exponent of this type of view, who has done as much as anyone to attack miracles, has favoured us with an exact definition—a definition, it must be added, which many Christians accept. In his *Enquiry*, in the chapter on *Miracles*, Hume wrote, “A miracle may be accurately defined, a transgression of a law of nature by a particular volition of the Deity. . . .” Not only is this the definition of one bitterly opposed to Christianity, it is also essentially the definition accepted by the greatest defender of Christianity which the twentieth century has yet produced: J. Gresham Machen. In *The Christian View of Man*¹ Machen writes: “A miracle is an event in the external world that is wrought by the immediate power of God.” While this definition does not contain explicitly the phrase “transgression of a law of nature”, the notion is apparently implicit in the word “immediately”, for by this word it is indicated that an external event occurs without physical causation. This impression is confirmed by Machen’s rejection, on the following pages, of St. Augustine’s view that a miracle violates, not nature, but only what we know of nature.

IV

In the light of this definition it is seen that many events recorded in Scripture may be colloquially called miraculous without being miracles. Not even Hume can quarrel with the so-called miracles, the striking nature of which is caused by a coincidence of several factors. For example, the Egyptian army was pressing after escaping Israelites, and as it hemmed them in between the mountains and the sea, the wind “just happened” to blow the waters back, the Israelites crossed, and as the Egyptians followed, the wind “just happened” to stop blowing. Events of this type are not contemplated in Hume’s definition. To be sure, Hume and the Christian would give

¹ p. 117.

opposite answers to the question whether in the escape of the Israelites they were the objects of divine providence or the beneficiaries of a lucky coincidence; and this problem of a basic world view is more important than this restricted discussion, but Hume and the Christian can agree not to discuss providence just now and to confine attention to miracles as technically understood.

The only miraculous events which can be used as evidences against Christianity are those alleged to violate the laws of nature. Now, in any such discussion, not only must the term miracle be defined, but the definition must be understood in the same sense by both parties. In the definition as Hume gave it, the phrase *a law of nature*, if not strictly ambiguous, at least stands in need of a twofold clarification. In the first place both he who attacks Christianity and he who defends it must know exactly what particular law of nature, if any, is supposed to be broken; and second, there must be agreement as to the general significance of natural law. The reasons which force consideration of these two points are the same. Obviously one cannot assert that an event breaks a law of nature unless he knows the law in question and recognizes its scope and significance. In pursuit of these grounds of agreement, reflection will show that the phrase *a law of nature* is subject to misunderstanding. In view of the fact that science is constantly reviewing and modifying its results, and that several of the statements recognized as natural laws in Hume's day are at this date rejected, caution should dictate the substitution of the more accurate phrase *a law of physics*. At least the laws of physics, or of some other positive science, are, at any given date, the only formulae which have any empirical claim to be called laws of nature. No other laws are known, and the question of miracles must be made to remain within the sphere of what is known. The objector, who asserts that miracles are impossible, is under obligation to state definitely what law makes miracles impossible; certainly one who brands the Christian an obscurantist would not want his own position to remain vague and obscure.

If this be true with respect to the particular law of physics involved, it is much more pertinent with respect to the scope and significance of law in general. Therefore, before any comparison is made between miracles and known laws, the method

by which the physicist obtains his laws must be studied, for it is only in this manner that their proper application can be determined.

V

It is common knowledge that the physicist performs experiments and bases his laws on the observed results. The first point now to be noted is one painfully familiar to every experimenter. Regardless of the most painstaking procedure every observed result is inexact. The existence of error in physical experimentation is no peculiar fault of the apparatus used; on the contrary it is inherent in the meaning or at least in the performing of an experiment. To be explicit, errors arise from the presence of what the psychologists call thresholds. There are three such, the upper threshold, the difference threshold, and the lower threshold. The last would be illustrated if we could have a piano or harp with a few octaves still lower than the ordinary instruments. Running down the scale one note after another, one could hear every note until the string struck vibrated at a rate of, say, less than sixteen vibrations a second. Deeper strings might vibrate, but the human ear could not hear them. The upper threshold could be similarly illustrated on the other end of this enlarged piano. The difference threshold exists because it is impossible to distinguish two tones whose vibrations differ by only one or two a second. If the tones differ by five or six vibrations a second, they can be recognized as different tones. The upper threshold need not be mentioned, but the lower and difference thresholds each have a contribution to make to the subject.

The error caused by the difference threshold in physics occurs when the experimenter must measure two lines, such as the strings of a piano, so nearly equal in length that their difference cannot be perceived. Nor will micrometers eliminate this difficulty. Fine instruments will, to be sure, decrease the amount of error, but so long as the experimenter remains a human being with ordinary sense processes, his results will continue to include this type of error.

The only method of determining the size of the error is to repeat the experiment many many times, and after the scientist does this, he adds up his list of results and computes their average. The amount the individual readings diverge from this average, the scientist records as variable error. For

example, the length of the string is thirty-nine inches plus or minus three one-hundred-and-twenty-eighths.

The existence of this error, without which a statement of experimental results would be scientifically useless, means that the scientist has not found and cannot find what common opinion calls the real length of the string. For this reason, no matter how carefully the experiment may be performed, it gives the physicist only an equivocal answer to his immediate question. The significance of this situation lies in the fact that when the scientist comes to formulate his law, the empirical data, while they exclude many mathematical formulae, none the less open up a wide range of choice. The observations fix the limits within which the law must be formulated, but they do not discover to us any one law. Hence the definite mathematical law stated in the physics books is not so much discovered, as it is made or chosen by the physicist. When the results of an experiment are transferred to a graph, the average with its error indicates not a point but a region, and through the many regions obtained by many experiments, an infinity of curves may be passed. The one curve or law which the scientist may announce to the world is therefore not forced on him by the data, but it is the result of his choice. He may choose a law for personal, or aesthetic, or moral reasons, but he chooses the law rather than discovers it.

VI

In order to see the connection between this line of argument and miracles, it must be noted in the next place that the miracles which are integral parts of Christianity, for example the resurrection of Christ from the grave, generally lie outside the range of experiment. The resurrection of Christ is not a matter of experimental science because it is an historical event which occurred once for all in the fairly distant past and cannot be repeated. Miracles are events of history, just as the defeat of Napoleon at Waterloo; and laboratory science has just as much and just as little to do with the one as with the other. Even if the optimistic claims of some philosophers should prove true that science some day will be able to reconstruct and predict history, it is patent that laboratory methods are not now so well developed. And, as previously indicated, the whole discussion must be rigidly confined to what is known and must not be

permitted to diverge into dreamy speculations however plausible. Therefore, before crediting any claim that miracles are impossible in particular before agreeing to any so-called scientific proof that Christ did not rise from the dead, it would be well to require the claimant to prove, by the same methods of proof, that Napoleon was actually defeated at Waterloo, or even that it is possible for him to have been defeated. Of course no surprise is occasioned by the simple assertion that it is possible that Napoleon was defeated, or that it is impossible that Wellington was defeated, but certainly any laboratory experiment designed to prove this possibility and impossibility would indeed be a matter of curiosity.

In fact, it is to be doubted whether any strictly scientific disproof of miracles has ever been attempted. At any rate, such an attempt would suffer by an immense gap in the argument. It is a gap which cannot be bridged by assertion, but which requires a complete demonstration that an alleged historical event is really incompatible with a generally accepted mathematical formula. The difficulty of demonstrating such incompatibility is seen when much more ordinary events than miracles are examined. Mathematical formulae are extremely valuable, and science is highly desirable, but even in the case of ordinary phenomena the laws of physics do not describe the historical event which common opinion regards as nature itself. The law of the pendulum assumes that the mass of the bob is concentrated at a mathematical point, and that it swings on a tensionless string, from a frictionless point. No such pendulum has ever existed in the visible world. If, then, the swinging of the pendulum of a grandfather's clock occurs without being invalidated by a law of physics—a law well known and mathematically exact—why should the resurrection of Christ be adjudged impossible through a law entirely unknown and never even approximated? Rather, just as the law of the pendulum has its limits set by real occurrences, so this supposed law, if it ever is to be formulated, would have its limits set by the historical fact of Christ's resurrection from the grave.

More explicitly: any attempted scientific proof of the impossibility of miracles should show first that the resurrection of Christ is inconsistent with, say, the Newtonian law of inverse squares. The mere fact of such inconsistency would be sufficiently difficult to demonstrate; but if it were demonstrable

the Christian could still reply that the difference thresholds and the resulting error permit the choice of another law consistent with the resurrection.

However, the opponents of Christianity are not usually so obligingly exact as to mention a definite, particular law of physics. Ordinarily they rely on some more universal law. This leads to the consideration of the lower threshold.

The error and resultant sphere of choice caused by the existence of the lower threshold is much wider than that caused by the difference threshold. If one should measure the length of a string, the difference threshold would prevent one from determining the exact length of the string, but there is no question about the fact that it is a string which is being measured. In the case of the lower threshold, however, a scientist or a philosopher may ask and has asked: How do we know that every infinitesimal fraction of a region occupied by string is itself occupied by string? No experiment can show that lengths and volumes below the threshold of observation are filled with string. In other words, while the difference threshold leaves indeterminate the magnitude of the string, the lower threshold leaves indeterminate the existence of the string. Some have said the region in question is composed of atoms and void, others say point centres of force. But neither assertion is an empirical discovery, for the simple reason that it concerns the region below the range of experiment. In this region the matters from among which choice must be made instead of being particular, special laws of physics, are matters of basic world-views. And if the acceptance of some particular, limited law of physics is not determined by experiment, all the more a basic philosophy is not determined by experiment, but rather the experimentation is determined or at least guided by the basic principles.

VII

To explore the implications of these last words would carry the discussion far beyond the narrow limits originally set down. To be sure, a complete account of miracles involves the complete Christian view of the world as originally and providentially governed by the Sovereign God. This is the first of three phases without which the argument on miracles is defective. In the second place the full argument requires detailed historical and archaeological investigations to discover

what actually happened in the past. But the third and present phase of the argument aims only to defend the value of such historical study. As was said at the outset, an opponent of Christianity sometimes argues that the historical approach is condemned from the beginning because of *a priori* scientific impossibilities. Hence the conclusion of this restricted paper must lie in the suggestion that the miracles of Christianity are to be treated as the experimental data of physics are treated. The religious thinker either in choosing a particular law of physics, or even more so in choosing a fundamental world view, should first consult history, and after deciding by historical evidence what has happened, should then choose his laws within the limits of historical actuality. The non-Christian thinker, intent on repudiating miracles, proceeds by a reverse method. He chooses his law without regard to historical limits, and then tries to rewrite history to fit his law. But surely this method is not only the reverse of the Christian method, it is clearly the reverse of rational procedure as well.

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