and sin, on grace and repentance, on the Act of God and the Word of God. We hasten to say, however, that all this theological discussion is conducted in the most delightfully undress fashion. The reader will hardly know that he is being indoctrinated, so fresh and human and attractive are both style and thought.

The Spiritual Pilgrimage of St. Paul, by the Rev. Frank H. Ballard, M.A. (S.C.M.; 4s. net), contains the substance of some lectures delivered at Summer Schools. It is therefore cast in an easy and popular style, though based on sound scholarship and careful study. The subject is treated in two main parts. First there is a study of the religious experience of St. Paul as a Jew, a Christian convert, and a missionary. In part two there are discussions of various practical problems and difficulties which the Apostle encountered in his work. No attempt is made to give a comprehensive survey, the problems selected being intended rather as illustrations of the spirit in which St. Paul faced his life and work. The book makes pleasant reading and paints a portrait of St. Paul which is at once lovable and inspiring.

A quite admirable book on *Child Life and Religion* has been written by Miss Ilse Forest (Williams & Norgate; 4s. 6d. net). It is not so much a treatment of religious education as a study of small, pre-school children and their thinking, and a discussion of some principles of psychology and teaching, with special reference to religious education. What concept of God can a pre-school child develop? How can we help him? What kind of idea of the other world can we give him? How can we teach him to pray? These and cognate questions are the subject of this essay. And in dealing with them Miss Forest mingles personal reminiscences, reports of actual experiences of parents, and discussions of the psychology of the child. No teacher or parent could read this excellent book without receiving both encouragement and enlightenment.

Man's Place in the Physical Universe.

By the Reverend J. H. Morrison, M.A., Aberdeen.

There is an impression abroad in our time that the discoveries of modern science are so revolutionary that the conditions of human life and thought have been fundamentally altered so that the wisdom and experience of the past are now of little value and we must hew out for ourselves new pathways to reality. Now, so far as concerns man's daily life, these changes are obviously superficial. We still breathe and eat and sleep as did the patriarchs. When modern science shall have shown us how to live without food and to dispense with the necessity of dying, it will be time enough to speak of the conditions of human life being fundamentally altered. To this the Christian preacher might be disposed to add that so long as man needs his daily bread he may be presumed to need also the bread of life.

It will, however, be confidently affirmed that there has been a revolution in human thought, so that we have far grander conceptions of the universe than our fathers had. There has been a significant displacement of the centre of gravity, so to speak. Man is no longer to be thought of as occupying the centre of the stage, but as playing a very insignificant part in the cosmic drama. The great globe itself, instead of being the fixed point around which the stars and planets wheel, is reduced to an infinitesimal speck and is counted as less than the dust in the balance. Doubtless we all accept this as true. Modern science has deeply impressed all our minds with the grandeur of the universe and the physical insignificance of man. But we may easily exaggerate the influence of these changes upon human thought. Do they involve a revolution in our religious thinking, as seems to be widely assumed? Two preliminary questions may be put in regard to points which do not appear to have been sufficiently considered.

(*a*) Do we really have a grander conception of the universe than had the thinkers of previous times? It may be doubted. Certainly it is not to be taken for granted. The discoveries of modern astronomy have indeed vastly enlarged the bounds of the universe on every side, but are our concepts proportionally enlarged? Impressions may be progressively deepened up to a certain point, but

beyond that the mind is simply stunned. You may pile Ossa on Pelion but it makes no difference. So it is with the interminable figures of astronomy. You may change your millions to billions but the change has little significance. The astronomers labour to help our weak infirmities and quicken our dull imaginations. Sir James Jeans[1] builds a model of the universe, starting with the earth's orbit as the size of the head of a pin and stretching outwards to a distance of four million miles on every side. But even on that scale who can take it in? We are told that space is perhaps between two and three million million million million miles in circumference, but the figures are meaningless. The impression would have been just the same if they had been increased or diminished a millionfold. The point is this—a point greatly overlooked—that the universe, as it has presented itself to men of every age, has always been, even without the aid of telescope and microscope, sufficiently grand to exercise human intellect and imagination to the full, and more. To the thoughtful and religious mind the world was always a big world, too big to be comprehended. The philosopher pondered the infinity of space; the Psalmist said with reverent awe, 'There is no end of his greatness.' Can we say more?

Further, it should be noted that the grandeur of an impression depends not simply on the grandeur of the object making the impression, but equally upon the grandeur of the mind receiving it. The World War was on a scale incomparably greater than the Trojan War, but it does not follow that our modern war poetry is incomparably greater than Homer. The traveller to-day may easily range through wider lands and finer scenery than ever Wordsworth knew, but will his impressions be finer? It would be rash, therefore, to conclude that our conceptions of the universe have necessarily grown in grandeur with the advance of modern astronomy. After all, man's essential contacts with the universe change but little from age to age, and his impressions chiefly depend on the seeing eye and the hearing ear and the understanding heart. It will be time enough for us to boast of our grander conceptions of the universe when we produce poetry transcending the Nature Psalms.

(*b*) Has religious thought ever been geocentric? This is a question of some importance, for we are continually being told that a revolutionary change has taken place to which the religious mind is finding it difficult to adapt itself. Devout men, so it is said, were accustomed to think of the earth as central, with heaven immediately overhead and hell immediately below. Man was the centre of interest and the chief preoccupation both of God and the devil. But now that the immensity of the universe and the insignificance of the earth have become known, the religious man is overwhelmed and bewildered. Having been evicted from his central position and tumbled down from the pedestal of his own importance, he feels as if the fountains of the great deep had broken up and swept him far out upon strange seas. Such, as it appears to many, is the sad plight of the religious man of our time.

Now it must be firmly said that this picture is in large degree a travesty of the facts. The religious man never in any age conceived himself as central in the gross sense here supposed. If he spoke of heaven above and hell beneath, as indeed we all must if we are to use human language at all, yet he conceived both the height and the depth as unfathomable. Earth, so far from being central, was but the footstool of God's throne. Its inhabitants were as grasshoppers in His sight, all the nations as a drop in a bucket. Language was strained to the breaking-point to express man's insignificance in the sight of God. On this point the philosophers spoke in the same terms as the prophets. They conceived of God as infinitely removed above the material world, able indeed to come into touch with it only through an endless chain of intermediary beings, so utterly transcendent was He. The great sages of India express the same thought in their own way. Nothing that modern science can say of the insignificance of man in God's great world can equal, far less surpass, the language which religious men have consistently used. The Ptolemaic scheme, which regarded the earth as the fixed centre, was, doubtless, accepted in its day, and when challenged it was defended by many theologians as by other thinkers; but it never vitally affected religious thought. The fact is, the religious mind does not depend on astronomy for its thoughts about God and the world, and therefore it is difficult to see how the enlarged scientific outlook of to-day has undermined the foundations of religious belief, or rendered man's previous thoughts of God so totally inadequate as is supposed.

Let us now attempt a brief review of the discoveries which have recently been made bearing on man's place in the world of space and time, with some reflections upon the religious interpretation of them.

[1] *The Universe Around Us*, 85.

I. Man's Place in Time.

Modern science has enormously lengthened the vista both towards the past and towards the future. At one and the same time it has added ages to the life of man and yet has dwarfed these ages to insignificance in comparison with the inconceivable age of the universe. A simple illustration may give the proportions better, perhaps, than a recital of meaningless millions. Suppose I were to stand a mile from the seashore, holding in my hand the end of a line which came in from the sea. Then the origin of our universe might be represented by a point far out in the mist and roughly computed as thirty miles out at sea. The point, a mile away, where the line comes ashore would mark the birth of the sun and stars; a point six inches from my hand would mark the birth of the earth; the last inch would cover the whole span of life on the earth, while of this last inch only one-thousandth part would be needed to represent the whole history of the human race. That is to say, in proportion to the life of the universe man has been in existence only for the twinkling of an eye. For inconceivable ages before life appeared on the earth, the sidereal universe was what we should call a dead world. Our minds are naturally much occupied with the conception of organic evolution, and we are disposed to see in that the governing principle of cosmic history. It is a bold assumption considering that but yesterday, as the universe counts yesterday, there were no organisms to evolve. It might just as easily be argued that organic evolution is some mere by-product or passing ripple or freakish twist in the play of the universe, so recent is it and so strangely localized.

But it may be said, the future is big with promise. Man stands at the dawning of his day and has practically a limitless prospect before him. It is somewhat pathetic to find many who have given up belief in personal immortality cherishing high hopes of the practical immortality of the race, and finding in that their inspiration. What ground is there, we may ask, for this expectation? Sir James Jeans speaks of the possibility of life continuing to exist on the earth for a million million years. This surely amounts to racial immortality. But one or two things should be noted. Jeans does not speak of upward progress through all these illimitable years, but only of the possibility of existence, a very different thing. It may naturally be expected that the race, like the individual, will grow old—perhaps has begun to grow old already. The upward evolution may have reached its height; physical conditions may henceforth involve a retrograde movement. History gives no guarantee against it. A man may have climbed up a hundred steps of a stair in the dark, but that does not prove that there are still a hundred steps above him. He may have reached the top, and at the next step he might even stumble over the parapet and fall headlong.

Besides, it should be noted that Sir James Jeans, in making his tentative prediction, expressly bars accidents, a highly important qualification. Indeed, we can all safely predict the future, bar accidents. In this case there are various possibilities of accident, some of which the astronomer mentions. The birth of the earth, it seems, came catastrophically through the partial disruption of the sun, a unique event which could not have been predicted. Its dissolution may come in some similar way. Stars have been seen to flare up and go out; our sun, for all we know, might at any moment share the same fate. Again, there is a danger, which Jeans says 'cannot be so lightly dismissed,' arising from the fact that the sun appears to be perilously near a certain unstable limit of size, below which it would rapidly shrink till life was impossible on the earth. Still further, according to a well-supported theory, the whole universe is expanding with inconceivable rapidity, like a soap bubble blown out, and nobody has the least idea what may happen next. So it would appear that the astronomer's prediction about the future of the world and of our human race is very much on a par with the prediction, which we all may confidently make, that 'Mr. Jones will live to be a centenarian, if nothing happens to him in the meantime.'

Returning, however, from the paths of prophecy, and even granting to the human race all the long future on the earth that is hoped for, we shall do well to remind ourselves that man appears on the stage of time only to pass. It should never be forgotten that organic evolution, whatever its ultimate significance may prove to be, is from the purely natural standpoint only a sectional and temporary movement which is embraced within the sweep of a wider and far more enduring cosmic movement in an opposite direction. The cosmic movement, so far as can be discerned, is a devolution, a running down, a constant wastage which can only have one inevitable end. 'Energy cannot run downhill for ever, and, like the clock-weight, it must touch bottom at last. And so the universe cannot go on for ever; sooner or later the time

must come when its last erg of energy has reached the lowest rung of the ladder of descending availability, and at this moment the active life of the universe must cease.'[1] Elsewhere Jeans says impressively: 'Science knows of no change except the change of growing older, and of no progress except progress to the grave.'[2]

By this cosmic movement, then, man and all his works are inevitably destined to be swallowed up. No matter how high he may attain or what civilizations he may build, all are doomed to a common grave. Jeans has compared the whole movement of biological evolution to 'a sailor who runs up the rigging in a sinking vessel.'[3] For incalculable ages ere man appeared upon the scene this cosmic movement was in progress, and for incalculable ages after he has disappeared it will roll on its way. Whitehead forecasts a time when 'the physical world, as we at present know it, will be represented by a ripple barely to be distinguished from nonentity.'[4]

What is man to think of this immense time-series, in which his own appearance is but as a single tick of the clock? He would seem to be driven to either one or other of two conclusions. On the one hand, this mighty universe may be a dreary and meaningless piece of mechanism, an interminable display of spinning-tops and flash-lamps, the everlasting contemplation of which would bring the weariness of death even to the most childish mind. If you choose to judge in that way and to emphasize the physical insignificance of man, then the retort is obvious that if man is insignificant the whole drama of the universe is beneath contempt. The other alternative is that the universe has a higher aspect and a hidden meaning which explains the whole. Through all the long ages ere ever man appeared upon this earthly scene, when as yet the world seemed to the natural eye to be dead, something worth while was going on. Could we but see the whole process in all its aspects we should find it a divine drama having an eternal value. This at least is the faith which the noblest of our race have dared to cherish, that the long time-series finds its meaning in that which is beyond time, and that the physical universe is but

> the table-land whence life upsprings
> Aspiring to be immortality.[5]

[1] Jeans, *The Universe Around Us*, 320.
[2] *The Stars in their Courses*, 152. [3] *Eos*, 69.
[4] *The Making of Religion*, 160.
[5] Browning, *The Ring and the Book*, vi. 1927.

II. Man's Place in Space.

It is common knowledge that our conceptions of the magnitude and structure of the world have been immensely enlarged in recent years. We have reached the stage when we no longer speak of the universe in the singular, but violating the proper meaning of the word we speak of 'universes' in the plural. The whole of the heavenly host visible to our eyes is now known as 'the galactic universe,' far away beyond the bounds of which there can be dimly discerned patches of light which must be taken to be other starry worlds comparable in size to our own. Two millions of these 'universes' may be seen through the largest telescope, and their distance is so immense that light is calculated to take anything from a million to one hundred and forty million years to reach us. If we had not long accustomed ourselves to take every pronouncement of science for absolute truth, we might perhaps be disposed to shake our heads over some of these inconceivable distances. To assert that a tiny vibration, quivering at the rate of five hundred million million times per second and setting out to travel with the record-breaking speed of one hundred and eighty-six thousand miles per second, keeps on going with undiminished energy for a hundred million years before it strikes our eye, is certainly a pretty tall order. It inevitably suggests that we are clumsily trying to express in figures something which in its mysteriousness is utterly beyond our powers of measurement. Already we are warned not to take these figures too literally. Light has been found to possess the properties of a corpuscle as well as of a vibration, concepts which we have no means of reconciling. At the other end of the scale in dealing with the construction of the atom, the physicist, after telling us that 'the electron revolves around its nucleus several thousand million million times every second with a speed of hundreds of miles a second,' is compelled to assume that in addition it performs occasional jumps in no time at all. This, of course, is a contradiction in terms, and to avoid it we are now invited to accept the theory that the electron has in reality no definite position in space at all. It is quite an open question whether there may not some day come a similar revolutionary theory in astronomy, a new way of explaining those minute experiences of light which we call stars and nebulæ, which may dispense with some of these inconceivable velocities and millions of light-years.

But, apart from that, there is no need for us meantime to let these figures run away with us

and throw us off our bearings. Many writers of our day have got into the habit of speaking disparagingly, not to say contemptuously, of the utter insignificance of man and of his earthly home, 'an atom clinging to a grain of sand.' But what are the facts? If modern science has revealed man's physical minuteness in proportion to the infinitely great, it has at the same time revealed his physical greatness in comparison with the infinitely minute. The radius of space is reckoned to be somewhere in the region of a million million million miles, but at the other end of the scale we find Bertrand Russell calculating that Planck's constant, *h*, which is mathematically expressed as $6{\cdot}55 \times 10^{27}$ erg × second, is a million million million times smaller than the smallest dot that we can see. One does not need to be a mathematician to observe that these dreadful millions cancel each other out, and the net result is that man is left in the matter of physical magnitude pretty much where he was before. Any one who in this respect suffers from an inferiority complex should compare himself with Planck's constant, when his enormous bulk will at once become apparent!

Similar to the idea of man's physical insignificance is the current idea of his remoteness from the centre of the universe. The earth is merely a satellite of the sun, which itself is only one of the three hundred thousand million stars in the Milky Way, all of which when taken together form but a single unit of the two million universes which can be seen scattered far and wide in space. What, then, is man? How remote from the centre of things! How impossible to think that he has any vital part to play! These calculations are having an influence on the modern mind far beyond the realm of physics. They tend to a disparagement of human life, to moral indifference, to pessimism. There are, of course, considerations drawn from other fields of thought which must be taken account of. Physics is not everything. But confining our view meantime to this one field we may venture to point out that this insistence on our remoteness from the centre is quite without foundation. The answer which modern physics, when strictly interpreted, would give to the question is twofold. First, we have no means of knowing whether we are at the centre or not; and, second, we can confidently affirm that we are as near the centre as anybody else. These are simple deductions from the doctrine of relativity which reigns supreme in the physical science of to-day.

No experiment in physics has been more disconcerting, and at the same time more influential, than the Michelson-Morley experiment. Through it we have received decisive proof of the impossibility of detecting absolute motion. The earth and the sun are in motion relatively to each other, but what their absolute motion is we cannot tell. So with all the movements of the heavenly bodies. Which of them is really moving and which, if any, is at rest we have no means of determining, and it seems as if we shall never know. No explanation of the Michelson-Morley experiment has been offered. It seems unaccountable that if we are really moving we should be unable to detect the movement with instruments which are admittedly fine enough to detect it. If any one chooses to say that the simple reason is that the earth is standing still, physical science would have no means of disproving the assertion. It might conceivably be that the total resultant of the combined relative motions of planets and stars and systems is to leave the earth motionless. Einstein himself has said that all the sidereal phenomena could be explained on the Ptolemaic hypothesis, only the Copernican theory is a simpler and to our minds more reasonable explanation. What the full truth is, the sum-total and absolute resultant of all this mighty maze of relative motions, we are completely debarred from knowing. It should be emphasized that when we say we have no knowledge of absolute motion, we mean that we have no knowledge whatsoever, and are therefore not entitled to make assertions of any kind on the subject. Whether we are near the centre or far away from it, in what direction we are moving or whether we are moving at all, regarding all these things we must be content in present circumstances to confess our total ignorance. To speak, therefore, of the earth as located in some remote and obscure corner of the universe is simply pure imagination unsupported by any fact of science.

Further, Einstein's theory regarding the nature of space, which at present holds the field in physics, maintains that space is in some sense spherical, or rather that it resembles in some degree the surface of a sphere. In other words, just as a two-dimensional being could be conceived as moving for ever over the surface of a sphere without coming to the end of it, so to us, three-dimensional beings, space is boundless, though not infinite. Taking, then, this image of the surface of a sphere as the best available guide to our thought, we are at once reminded that the surface of a sphere has no centre. Every single point on the surface is equally related to every other point. On the surface of the globe

we mark lines of latitude and longitude, and we distinguish the poles from the equator, but on a perfect sphere distinctions of that sort would be purely arbitrary. Space, then, in so far as it is known to physics, is built on strictly democratic principles. No point is more central than another, none more remote. Thus we again reach the conclusion that to speak of the earth as in any physical sense remote is sheer fancy. We can affirm in contradiction that the universe knows of no spot more central than just where we are.

We might go further, and point out, still using the image of the sphere as our guide, that every point on the surface is equally in contact with the atmosphere which surrounds it. The whole diameter of the globe may separate Melbourne from London, but Melbourne is just in as immediate contact as London is with the upper air. So must we conceive that every single point in space is equally in touch with that which is not—space. Thus, in any sense vital to religion or human thought, physical science would teach us to dismiss from our minds all paralysing ideas of man's physical insignificance or remoteness from the centre.

III. Some Relections.

In conclusion, some reflections, suggested by this discussion, may briefly be touched on.

1. Man can only view the universe from the standpoint at which he finds himself. If by the exercise of his imagination he strives to place himself at some viewpoint which he regards as more central or absolute, he will assuredly find that his position is as relative as before. In the very nature of things, being as he is an integral part of the universe, 'man can never reach the absolute or divine point of view, even if he can dimly perceive that there must be such a one.'[1] It is sometimes ignorantly supposed that the science of to-day brings us to such a viewpoint, but this is earnestly repudiated by those who are best entitled to speak in the name of science. Sir James Jeans speaks of 'a growing conviction that the ultimate realities of the universe are at present quite beyond the reach of science, and may be—and probably are—for ever beyond the comprehension of the human mind. It is *a priori* probable that only the artist can understand the full significance of the picture he has painted, and that this will remain for ever impossible for a few specks of paint on the canvas.'[2] We, of course, as physical science knows us, are these 'few specks of paint.'

In the circumstances, then, it is futile to dream of getting away from ourselves to some absolute or cosmocentric point of view. There is a legitimate sense in which all our thinking must be geocentric, or rather egocentric. Whitehead has impressively shown how it belongs to the very being and essence of every single atom that it reflects, or as he would say 'prehends,' the whole universe in its own unique way. In like manner we are what we are because we occupy a certain given position and viewpoint in the universe. So we are brought back to ourselves. We cannot stand apart and view the drama of existence as from the outside. We are involved in it, and we have to deal with its problem as that problem is presented to us here and now. The near and the immediate is after all the thing of prime importance. There are stars so distant that they affect us not at all; they might perish and we should never know. Mighty worlds, doubtless, but they touch us less than a mote in the eye. We shall only deceive ourselves and suffer irreparable loss if in the delusive pursuit of some absolute standpoint we should in any wise belittle or fail to deal effectively with the situation as it lies to our hand.

2. The impartial mind can hardly avoid the conclusion that the universe has meaning and eternal value. It certainly did not come into existence by chance. Mathematicians have calculated the odds against the world being the product of chance, and it works out, not at ten to one or a hundred to one, but at $10^{420,000,000,000}$ to one. This represents a number which, if written out in full, would be one followed by a line of nothings which would go thirty-five times round the globe. 'A preposterous number,' Eddington[3] calls it, amounting to practical certainty that the universe is no product of chance. If that be so, then we are impelled further to the belief that the design is as worthy in conception as it is immeasurable in duration and in size. We have seen that the life of our human race is but a single tick of the astronomical clock. For incalculable ages before life appeared, and for incalculable ages after life has disappeared, we are presented with the dismal spectacle of a dead universe rolling on its weary way. If this were the whole tale, then human life would be meaningless and man could only hold in supreme contempt the universe which had somehow strangely given him birth. The only alternative to complete pessimism is to rise to the faith that

[1] Gore, *The Philosophy of the Good Life*, 332.

[2] *The Universe Around Us*, 329–330.

[3] *The Nature of the Physical World*, 73.

the whole process has eternal significance and value. Accordingly, to quote Dean Inge, 'the thinkers of our day are more and more ready to recognize the existence of a kingdom of values, exalted above space and time, and independent of the problematical advances which may or may not be in store for the human race.'[1] This world of absolute values is the real world, whose radiance shines in all the goodness, truth, and beauty of this present world, and in whose glory man has been inspired to hope that he may share.

3. We are everywhere in immediate contact with this world of eternal values. There is no region of space remote from its presence and Divine activities. To conceive man as an exile banished to some remote corner is an unwarranted assumption. In full cognizance of all the revolutions in thought which have taken place since the days of Ptolemy, Sir Arthur Eddington still sets man at the centre of the stage. 'I do not think that the whole purpose of Creation has been staked on the one planet where we live; and in the long-run we cannot deem ourselves the only race that has been or will be gifted with the mystery of consciousness. But I feel inclined to claim that *at the present time* our race is supreme; and not one of the profusion of stars in their myriad clusters looks down on scenes comparable to those which are passing beneath the rays of the sun.'[2] We need not accept this verdict or make comparisons with other worlds. There is no centre of the stage that physics knows of; all is central, or equally related to the centre. But, on the other hand, it is folly for man to cringe before the physical vastness of the universe as if that had any power to come between him and the eternal.

In short, there is really nothing in the modern view of the physical universe which makes it more difficult than formerly to believe in man's spiritual destiny. The Christian hope has always been a daring, even an incredible, hope. But then the actual itself is incredible. The conditions of man's physical life and of the world in which he dwells, as presented by modern science, are incredible. Who could have believed that the terrific forces and velocities of atoms could be fitted together to make the quiet beauty of the countryside, or that we ourselves, compounded of these same forces and velocities, could so peacefully live and move and work and sleep? In such an extraordinary world as this, and with our limited knowledge, it is folly to reject anything as incredible. Rather may we have courage to believe that, as the actual would have been counted incredible if it had not been experienced, so there may be realms of being yet to be disclosed surpassing all human imagination.

[1] *Christian Ethics and Modern Problems*, 195.

[2] *The Nature of the Physical World*, 178.

Our Relationship to God and its Mediation through Christ.

By the Reverend G. K. MacBean, B.A., Penrith.

I.

When we speak of the relation between God and man, we are using a term which carries with it implications that need to be very carefully examined if we are to avoid grave error in the use we make of it. Thus a relation not only implies two—persons or objects—but it implies some connexion or affinity by virtue of which they are relatable at all. In a sense, of course, the coexistence of two objects in thought constitutes a connexion between them, but in practice the term is confined to connexions which exist apart from thought—if the philosophers will allow of such a thing. Of such connexions some may be purely fortuitous, as, for instance, that between next-door neighbours in the same street, or they may be what we are entitled to call natural or essential, because each of the two persons or objects possesses as part of its *essentia* the capacity of entering into relations with the other. Thus it is part of the *essentia* of an iron nail to be attracted by a magnet, and of a magnet to attract an iron nail. It is, on the other hand, no part of the *essentia* of a magnet to attract a wooden match-stick, nor of a match-stick to be so attracted. Or if the relation between a particular