



LETTER LXXVI.

System of the Monads of Wolff.

BEFORE I attempt to make you sensible of the truth of the principle, that all bodies, of themselves, always preserve the same state of rest, or motion, I must remark, that if we consult experience only on the subject, without thoroughly investigating it by the powers of reasoning, we would be disposed to draw the directly opposite conclusion, and to maintain, That bodies always have a propensity to be continually changing their state; as we see nothing in the whole universe, but a perpetual change in the state of bodies. But we have just shewn what are the causes which produce these changes, and we are assured, that they are not to be found in the bodies whose state is changed, but out of them.

The principle, then, which we have established, is so far from being contradicted by experience, that it is, on the contrary, confirmed by it. You will easily judge from this, how several great philosophers, misled by an experience not accurately understood, have fallen into the error of maintaining, That all bodies are endowed with powers, disposing them continually to change their state.

It is thus that *Wolff* has reasoned. He says: 1. Experience shews us all bodies perpetually changing their state; 2. Whatever is capable of changing the state of bodies, is called force; 3. All bodies, therefore,

fore, are endowed with a force capable of changing their state; 4. Every body, therefore, is making a continual effort to change; 5. Now, this force belongs to body, only so far as it contains matter; 6. It is, therefore, a property of matter to be continually changing it's own state; 7. Matter is a compound of a multitude of parts, denominated the elements of matter; therefore, 8. As the compound can have nothing but what is founded in the nature of it's elements, every elementary part must be endowed with the power of changing it's own state.

These elements are simple beings; for if they were composed of parts, they would be no longer elements, but their parts would be so. Now, a simple being is likewise denominated *monad*; every monad, therefore, has the power of continually changing it's state. Such is the foundation of the system of monads, which you may have heard mentioned, though it does not now make such a noise as it formerly did. I have marked by figures the several propositions on which it is established, for the purpose of making a more distinct reference, in the reflections I mean to make upon them.

I have nothing to say respecting the first and second; but the third is very equivocal, and altogether false, in the sense in which it is taken. Without meaning to say, that the forces which change the state of bodies, proceed from some spirit, I readily agree, that the force, by which the state of every body is changed, subsists in body, but, it being always understood, that it subsists in another body, and never



in that which undergoes the change of state; which has rather the contrary quality, that of persevering in the same state. In so far, then, as these forces subsist in bodies, it ought to be said, that these bodies, as long as they have certain connections with each other, may be capable of supplying forces by which the state of another body is changed. It follows, that the fourth proposition must be absolutely false; and the result, from all that went before, rather is, that every body is endowed with the power of remaining in the same state, which is directly the opposite of the conclusion which these philosophers have drawn.

And I must here remark, that it is rather absurd to give the name of *force* to that quality of bodies by which they remain in their state; for if we are to understand by the term *force* every thing that is capable of changing the state of bodies, the quality by which they persevere in their state, is rather the opposite of a force. It is, therefore, by an abuse of language, that certain authors give the name of force to the *inertia*, which is that quality, and which they denominate the *inert force*.

But, not to wrangle about terms, though this abuse may lead to very gross errors, I return to the system of monads: and as proposition 4, is false, those that follow, which are successively founded upon it, must, of necessity, be so too. It is false, then, likewise, that the elements of matter, or monads, if such there be, are possessed of the power of changing their state. The truth is rather to be founded in the opposite quality,

quality, that of persevering in the same state; and thereby the whole system of monads is completely subverted.

These philosophers attempted to reduce the elements of matter to the class of *beings*, which comprehends spirits and souls, endowed, beyond the power of contradiction, with the faculty of changing their state; for, while I am writing, my soul continually represents other objects to itself, and these changes depend entirely on my will: I am thoroughly convinced of it, and not the less so, that I am master of my own thoughts; whereas the changes which take place in bodies, are the effect of an extraneous force.

Add to this, the infinite difference between the state of body, capable only of one velocity and of one direction, and the thoughts of spirit, and you will be entirely convinced of the falsehood of the sentiments of the materialists, who pretend that spirit is only a modification of matter. These gentlemen have no knowledge of the real nature of bodies.

15th November, 1760.

LETTER LXXVII.

Origin and Nature of Powers.

IT is, undoubtedly, very surprizing, that, if every body has a natural disposition to preserve itself in the same state, and even to oppose all change, all the bodies in the universe should, nevertheless, be



continually changing their state. We are well assured, that this change can be produced only by a force not resident in the body whose state is changed. Where, then, must we look for those powers, which produce the incessant changes that take place in all the bodies of the universe; and which are, nevertheless, foreign to body?

Must we then suppose, besides these existing bodies, particular beings which contain those powers? Or, are the powers themselves particular substances existing in the world? We know but of two kinds of beings in it, the one which comprehends all bodies, and the other all intellectual beings, namely, the spirits and souls of men, and those of animals. Must we establish, then, in the world, besides body and spirits, a third species of beings, under the name of power, or force? Or, are they spirits which incessantly change the state of bodies?

Both of these labour under too many difficulties to be hastily adopted. Though it cannot be denied, that the souls of men, and of beasts, have the power of producing changes in their bodies, it were, however, absurd to maintain, that the motion of a ball, on the billiard table, was retarded and destroyed by some spirit; or that gravity was produced by a spirit continually pressing bodies downward; and that the heavenly bodies, which, in their motion, change both direction and velocity, were subjected to the action of spirits, according to the system of certain ancient philosophers, who assigned to each of the heavenly bodies, a spirit, or angel, who directed its course.

Now,

Now, on reasoning with solidity, respecting the phenomena of the universe, it must be admitted, that, if we except animated bodies, that is, those of men and beasts, every change of state which befalls other bodies, is produced by merely corporeal causes, in which spirits have no share. The whole question, then, is reduced to this, Whether the forces which change the state of bodies, exist separately, and constitute a particular species of beings, or whether they exist in the bodies?

This last opinion appears, at first sight, very unaccountable; for if all bodies have the power of preserving themselves in the same state, how can it be possible they should contain powers that have a tendency to change it? You will not be surprized to hear, that the origin of force has, in all ages, been a stumbling-block to philosophers. They have all considered it as the greatest mystery in nature, and as likely to remain for ever impenetrable. I hope, however, I shall be able to present you with a solution, so clear of this pretended mystery, that all the difficulties which have hitherto appeared insurmountable, shall wholly vanish.

I say, then, that however strange it may appear, this faculty of bodies, by which they are disposed to preserve themselves in the same state, is capable of supplying powers which may change that of others. I do not say, that a body ever changes its own state, but that it may become capable of changing that of another. In order to enable you to get to the bottom of this mystery, respecting the origin of force,

it



it will be sufficient to consider two bodies, as if no others existed.

Let the body A (*plate III. fig. 4.*) be at rest, and let the body B have received a motion in the direction B A, with a certain velocity. This being laid down, the body A is disposed to continue always at rest; and the body B to continue its motion along the straight line B A, always with the same velocity, and both the one and the other in virtue of its *inertia*. The body B will, at length, then come to touch the body A. What will be the consequence? As long as the body A remains at rest, the body B could not continue its motion, without passing through the body A, that is, without penetrating it; it is impossible, then, that each body should preserve itself in its state, without the one's penetrating the other. But this penetration is impossible; impenetrability being a property common to all bodies.

It being impossible, then, that both the one and the other should preserve its state, the body A must absolutely begin to move, to make way for the body B, that it may continue its motion; or, that the body B, having come close to the body A, must have its motion destroyed; or, the state of both must be changed, as much as is necessary, to put them in a condition to continue, afterward, each in his proper state, without mutual penetration.

Either the one body, therefore, or the other, or both, must absolutely undergo a change of their state, and the cause of this change, infallibly exists in the impenetrability of the bodies themselves; since
every

every cause, capable of changing the state of bodies, is demonstrated *force*, it is then, of necessity, the impenetrability of the bodies themselves, which produces the force, by which this change is effected.

In fact, as impenetrability implies the impossibility, that bodies should mutually penetrate, each of them opposes itself to all penetration, even in the minutest parts; and to oppose itself to penetration, is nothing else, but to exert the force necessary to prevent it. As often, then, as two or more bodies cannot preserve themselves in their state, without mutual penetration, their impenetrability always exerts the force necessary to change it, as far as is requisite, to prevent the slightest degree of penetration.

The impenetrability of bodies, therefore, contains the real origin of the forces, which are continually changing their state in this world: and this is the true solution of the great mystery, which has perplexed philosophers so grievously.

18th November, 1760.

LETTER. LXXVIII.

The same Subject. Principle of the least possible Action.

YOU have now made very considerable progress in the knowledge of nature, from the explanation of the real origin of the powers capable of changing the state of bodies; and you are, at present, in a condition easily to comprehend, why all those



those of this world are subject to an incessant change of state, from rest to motion, or from motion to rest.

First, we are certain, that the world is filled with matter. Here below, it is evident, that the space which separates the gross bodies sensible to feeling, is occupied by the air, and that, when we make a vacuum in any space, the ether instantly succeeds, and it, likewise, fills the space in which the heavenly bodies move. All space being thus full, it is impossible that a body in motion should continue it a single instant, without meeting others, through which it must pass, if they were not impenetrable. And, as this impenetrability of bodies exerts always, and universally, a force which prevents all penetration, it must be continually changing the state of bodies; it is not at all surprizing, then, that we should observe perpetual changes in the state of bodies, though every one has a tendency to preserve itself in the same state.

If they could penetrate each other freely, nothing would prevent any one from remaining perseveringly in it's state; but being impenetrable, there must thence, necessarily, result force sufficient to prevent all penetration; and no more results than what is precisely needful.

While they can continue in the same state, without any injury to impenetrability, they then exert no force, and bodies remain in their state; it is only to prevent penetration, that impenetrability becomes active, and supplies a force sufficient to oppose it.

When,

When, therefore, a small force suffices to prevent penetration, impenetrability exerts that, and no more; but when a great force is necessary for this purpose, impenetrability is ever in a condition to supply it.

Thus, though impenetrability supplies these powers, it is impossible to say, that it is endowed with a determinate force; it is rather in a condition to supply all kinds of force, great or small, according to circumstances; it is even an inexhaustible source of them. As long as bodies are endowed with impenetrability, this is a source which cannot be dried up; this force absolutely must be exerted, or bodies must mutually penetrate, which is contrary to nature.

It ought, likewise, to be remarked, that this force is never the effect of the impenetrability of a single body; it results always from that of all bodies at once, for if one of the bodies was penetrable, the penetration would take place, without any need of a power to effect a change in their state. When, therefore, two bodies come into contact, and when they cannot continue in their state without penetrating each other, the impenetrability of both acts equally; and it is by their joint operation, that the force necessary to prevent the penetration is supplied: we then say, that they act upon each other, and that the force, resulting from their impenetrability, produces this effect. This force acts upon both of them; for as they have a tendency toward mutual penetration, it repels both the one and the other, and thus prevents their penetration.

It



It is certain, then, that bodies may act upon each other; and we speak so frequently of this action, as when two billiard balls clash, it is said, the one acts upon the other, that you must be well acquainted with this mode of expression. But it must be carefully remarked, that, in general, bodies do not act upon each other, but in so far as their state becomes contrary to impenetrability; from whence results a force capable of changing it, precisely so much as is necessary to prevent any penetration; so that a small force would not have been sufficient to produce this effect.

It is very true, that a greater force would, likewise, prevent the penetration; but when the change produced in the state of bodies is sufficient to prevent mutual penetration, the impenetrability acts no farther, and there results from it the least force that is capable of preventing the penetration. Since, then, the force is the smallest, the effect which it produces, that is, the change of state which it operates, in order to prevent penetration, will be proportional; and, consequently, when two or more bodies come into contact, so that no one could continue in its state without penetrating the others, a mutual action must take place, which is always the smallest that was capable of preventing penetration.

You will find here, therefore, beyond all expectation, the foundation of the system of the late Mr. *de Maupertuis*, so much cried up by some, and so violently attacked by others. His principle is, that of the

the least possible action; by which he means, that, in all the changes which happen in nature, the cause which produces them, is the least that can be.

From the manner in which I have endeavoured to unfold this principle to you, it is evident, that it is perfectly founded in the very nature of body, and that those who deny it, are much in the wrong, though still less than those who would turn it into ridicule. You will already, perhaps, have remarked, that certain persons, no great friends to Mr. *de Maupertuis*, take every opportunity of laughing at the principle of *the least possible action*, as well as at the hole continued down to the centre of the earth; but, fortunately, truth suffers nothing by their pleasantries.

22d Nov. 1760.

LETTER LXXIX.

On the Question, Are there any other Species of Powers?

THE origin of powers, founded on the impenetrability of bodies, which I have been endeavouring to explain, is by no means inconsistent with the opinion of those who maintain, that the souls of men, and those of beasts, have the power of acting on their bodies. There is nothing to hinder the existence of two kinds of power, which produce all the changes that take place in the world; the one corporeal, which derives its origin from the impenetrability



netrability of bodies : and the other spiritual, which the souls of animals exercise over their bodies : but this last power operates only upon animated bodies ; and the Creator has so clearly distinguished it from the other, that it is not permitted, in philosophy, to confound them.

But this distinction greatly embarrasses those, who consider attraction as an inherent quality of bodies ; for, if they act upon each other, only to maintain their impenetrability, attraction cannot be referred to this case. Two distant bodies may preserve each its state, without at all interesting their impenetrability, and without there being any reason, of consequence, why the one should act upon the other, even by attracting it.

Attraction, therefore, ought to be referred to a third species of power, which should be neither corporeal nor spiritual. But it is always contrary to the rules of a rational philosophy to introduce a new species of powers, before their existence is incontrovertibly demonstrated. It would have been necessary, therefore, for this effect, to have proved, beyond contradiction, that the powers by which bodies mutually attract, could not derive their origin from the subtle matter which surrounds them ; but this impossibility is not yet demonstrated. It would appear, on the contrary, that the Creator has expressly filled the whole space of the heavens with a subtle matter, to give birth to these powers, which impel bodies toward each other, conformably to the law, before established, respecting their impenetrability.

In fact, the subtle matter might very well have a motion such as that a body in it should not be able to preserve its state, without being penetrated by it ; and then this force must be derived, as well from the impenetrability of the subtle matter, as from that of the body itself.

Were there a single case in the world, in which two bodies attracted each other, while the intermediate space was not filled with a subtle matter, the reality of attraction might very well be admitted ; but as no such case exists, we have, consequently, reason to doubt, nay, even to reject it. We know, then, but two sources of all the powers which produce these changes, the impenetrability of body, and the action of spirit.

The disciples of *Wolff* reject, likewise, this law, and maintain, That no spirit, or immaterial substance, can act upon a body ; and they are very much embarrassed, when it is alleged, that, according to them, God himself, who is a spirit, could not have the power of acting upon bodies, which favours strongly of atheism. They are, accordingly, reduced to this feeble reply, that it is by *infinity* God is able to act upon body ; but if it be impossible for a spirit, as a spirit, to act upon a body, this impotence necessarily recoils on God himself. And who can deny, that our soul acts upon our body ? I am to such a degree master of my members, that I can put them in action as I please. The same thing may be affirmed, likewise, of the brute creation ; and as, according to the system of *Descartes*, at which we have good

Vol. I. X reason



reason to smile, beasts are mere machines, without any feeling, like a watch, as the Wolfians would have it, men too are merely machines.

These same philosophers, in their speculations, go, likewise, so far as to deny the first species of powers, of which they know nothing. For, not being able to comprehend how one body acts upon another, they boldly deny it's action, and maintain, that all the changes which befall a body, are produced by it's own powers.

They are the philosophers whom I formerly mentioned, as denying the first principle of mechanics, respecting the preservation of the same state, which is sufficient to subvert their whole system. The error into which they have fallen, as I have already remarked, arises from their reasoning inconclusively respecting the phenomena which bodies present to us. They concluded precipitately, from observing almost all bodies continually changing their state, that they contained in themselves the powers, by which they incessantly exert themselves to change it, whereas they ought to have drawn the directly opposite conclusion.

It is thus, that, by considering objects in a superficial manner, we hurry into the grossest errors. I have already pointed out the defects of this reasoning; but, once fallen into error, they have abandoned themselves to the most absurd ideas. They, first, ascribed these internal powers to the primary elements of matter, which, according to them, are continual efforts to change their state, and concluded from

from it, that all the changes to which every element is subjected, are produced by it's own power, and that two elements, or simple beings, cannot act upon each other. This being laid down, it was necessary to divest spirits, as simple beings, of all power of acting upon body, excepting, however, the Supreme Being; and then, as bodies are composed of simple beings, they were under the necessity of denying, also, that bodies could act upon each other.

It was in vain to object to them, the case of bodies which clash, and the change of their state, which results from it. Obstinately prepossessed in favour of the solidity of their reasoning, they scorned to abandon it: they chose rather to affirm, that every body, from it's own nature, produces the change which befalls it, and that the collision has nothing to do with it; that it is a mere illusion which makes us believe the collision to be the cause of it; and they go off in triumph at the sublimity of a philosophy, so far beyond the comprehension of the vulgar. You are now in a condition to estimate it, according to it's real importance.

25th November, 1760.

L E T T E R LXXX.

Of the Nature of Spirits.

I FLATTER myself, that you are now convinced of the solidity of the reasonings, on which I have established the knowledge of bodies, and that of the powers



powers which change the state of them. The whole is founded on experiments the most decisive, and on principles dictated by reason. They involve no absurdity, nor are they contradicted by other principles, equally certain. It is not long since any successful progress was made in researches of this kind. Such strange ideas were, formerly, entertained respecting the nature of bodies, that all kinds of powers were ascribed to them, of which some must necessarily destroy the others.

Certain philosophers have even gone so far, as to imagine, that matter itself might be endowed with the faculty of thought. These gentlemen, known by the name of *materialists*, maintain, that our souls, and all spirits, in general, are material; or rather, they deny the existence of souls and spirits. But when once we have got into the right road to the knowledge of bodies; the *inertia*, by virtue of which they continue in their state; and *impenetrability*, that quality by which they are subjected to powers capable of changing it; all those phantoms of powers, to which I alluded, vanish away, and nothing appears a more glaring absurdity than to affirm, that matter is capable of thought. To think, to judge, to reason, to possess mental feeling, to reflect and will, are qualities incompatible with the nature of bodies; and beings invested with them, must be of a different nature. Such are souls and spirits; and He who possesses those qualities in the highest degree, is God.

There is, then, an infinite difference between body and spirit. Extension, *inertia*, and impenetrability, qualities

qualities which exclude all thought, are the properties of body: but spirit is endowed with the faculty of thinking, of judging, of reasoning, of feeling, of reflecting, of willing, or of determining, in favour of one object preferably to another. There is here neither extension, nor *inertia*, nor impenetrability; these material qualities are infinitely remote from spirit.

It is asked, What is a spirit? I acknowledge my ignorance in respect of this, and I reply, That we cannot tell what it is, as we know nothing of the nature of spirit.

But it is not the less certain, that this world contains two kinds of beings; beings *corporeal* or *material*, and beings *immaterial* or *spiritual*, which are of a nature entirely different, as they manifest themselves to us by properties which have no relation to each other. These two species of beings are, nevertheless, most intimately united, and upon their union, principally, depend all the wonders of the world, which are the delight of intelligent beings, and lead them to glorify their CREATOR.

It is certain, that spirits constitute the principal part of the world, and that bodies are introduced into it merely to serve them. For this reason it is, that the souls of animals are in an union so intimate with their bodies. Not only do the souls perceive all the impressions made upon their bodies; but they have the power of acting upon these bodies, and of producing in them corresponding changes: and thus



they exercise an active influence over the rest of the world.

This union of the soul with the body, undoubtedly, is, and ever will be, the greatest mystery of the divine Omnipotence, a mystery which we shall never be able to unfold. We are perfectly sensible, that the human soul cannot act immediately on all the parts of the body; as soon as a certain nerve is cut, I can no longer fold my hand: from which it may be concluded, that the soul has power only over the extremities of the nerves, which all terminate and unite in a portion of the brain, the place of which the most skilful anatomist is unable exactly to assign. To this, then, the power of the soul is restricted. But that of God, being unlimited, extends to the whole universe, and exerts itself by means which far exceed our comprehension.

19th November, 1760.

LETTER LXXXI.

Of the Union between the Soul and the Body.

AS spirits and bodies are beings, or substances, of a nature totally different, the world contains, then, two kinds of substances, the one *spiritual*, and the other *corporeal*, or *material*. The strict union which subsists between them merits a very particular attention.

This

This union of soul and body, in every animal, is a most wonderful phenomenon. It is reduced to two things, the one, that the soul feels, or perceives, all the changes which befall it's body, by means of the senses, which, as you know perfectly well, are five in number, namely, seeing, hearing, smelling, tasting, and touching. By these, then, the soul takes cognizance of every thing that passes, not only in it's own body, but out of it. Touching and tasting represent to it those objects only which are in immediate contact with the body; smelling, objects at a small distance; hearing extends to distances much more remote; and sight procures for us the knowledge of the most distant objects.

All this knowledge is acquired, only in so far as the objects make an impression on some one of our senses, but still, this is not sufficient, it is necessary, that the organ of such sense should be perfectly sound, and the nerves belonging to it must not be deranged. You will recollect, that, in order to see, the objects must be painted distinctly in the bottom of the eye, on the retina; but still, this representation is not the object of the soul; one may be blind, though it is perfectly well expressed. The retina is a contexture of nerves, the continuation of which extends to the brain; and if this continuation is interrupted by any injury done to this nerve, called the *optic nerve*, there will be no sight, however perfect the representation on the retina may be.

It is the same with respect to the other senses, all of which operate by means of nerves destined to convey



vey the impression made on the organ, employed in the sensation, up to it's first origin in the brain. There is, then, in the brain, a certain place where all the nerves terminate; there the soul resides, and there perceives the impressions made upon it by means of the senses.

From these impressions, the soul derives all the knowledge it has of things out of itself; thence it derives it's first ideas, and by their combination forms judgments, reflections, reasonings, and every thing necessary to perfect it's knowledge; such is the work of the soul, in which the body has no share. But the first impression comes to it from the senses, through the bodily organs: and the first faculty of the soul is to perceive, or to feel, what passes in that part of the brain, in which all the sensitive nerves terminate. This faculty is denominated *feeling*, or *sensation*, and the soul, nearly passive, does nothing, in the first instance, but receive the impressions which the body presents to it.

But it possesses, in it's turn, an active faculty, by means of which it has the power of influencing it's body, and of producing motions in it, at pleasure: in this consists it's power over the body. Thus I am able to move my hands and my feet by an act of my will; and, What motions are my fingers making; as I write this letter? My soul, however, cannot act immediately on any one of my fingers; in order to put a single one in motion, it is necessary that several muscles should be put in action, and this action, again, exerts itself by means of nerves terminating in

in the brain: if such a nerve be injured, to no purpose will I wish my finger to move; it will no longer obey the orders of my soul: thus the power of my soul extends only to a small portion of the brain, where all the nerves unite; sensation is likewise restricted to this place of the brain.

The soul, then, is united only with these extremities of the nerves, on which it has not only the power of acting, but by means of which it can view, as in a mirror, every thing that makes an impression on the organs of it's body. What wonderful address, to be able to conclude, from the slight changes which take place in the extremity of the nerves, that which occasioned them out of the body!

A tree, for example, produces on the retina, by it's rays, an image which is perfectly similar to it: but how feeble must the impression be which the nerves receive from it! It is this impression, however, continued along the nerves up to their origin, which excites in the soul the idea of that tree. Afterwards, the slightest impressions which the soul makes on the extremities of the nerves, are instantly communicated to the muscles, which, put in action, oblige the member which it wills to move, exactly to obey it's orders.

Machines, which receive certain motions by the drawing of a string, present but a coarse mechanism, compared to our bodies and the bodies of animals. The works of the Creator infinitely surpass the productions of human skill.

2d December, 1760.

LETTER



LETTER LXXXII.

Different Systems, relative to this Subject.

IN order to elucidate the twofold union of soul and body, we may compare the soul to a man, who contemplates, in a dark room, the external objects, and from their images derives the knowledge of what is passing out of the room. The soul viewing, in like manner, if I may so express myself, the extremities of the nerves, which unite in a certain part of the brain, perceives all the impressions made upon the nerves, and arrives at the knowledge of the external objects, which have made these impressions on the organs of sense. Though we do not know wherein consists the resemblance of the impressions made on the extremities of the nerves, with the objects themselves which occasioned them, they are, however, very proper to supply the soul with a very just idea of them.

The action by which the soul, operating on the extremities of the nerves, can put in motion, at pleasure, the members of the body, may be compared to that of a player on puppets, who, by pulling a string, makes them strut about, and move their limbs as he pleases. This comparison is, however, very imperfect, for the union of the soul and body is infinitely more intimate.

The soul is not so indifferent, in respect of feeling, as the man placed in the dark room; it is much more deeply

deeply interested in what is going on. There are sensations highly agreeable to it, and others very disagreeable, and even painful. What more disagreeable than acute pain, though it proceed but from a bad tooth? This, however, is no more than a nerve irritated in a certain manner, and yet it excites, in the soul, pain intolerable.

In whatever light we consider the strict union of soul and body, which constitutes the essence of a living man, it must ever remain an inexplicable mystery; and, in all ages, philosophers have taken fruitless pains, in the hope of arriving at a satisfactory solution. Various systems have been devised in this view.

The first is, that by which a real influence is established of body on soul, and of soul on body; so that the body, by means of the senses, supplies the soul with its first perceptions of external things; and that the soul, by acting immediately on the nerves, in their origin, excites in the body the motion of its members; though it is, at the same time, acknowledged, that the manner of this mutual influence is absolutely unknown to us. We must, undoubtedly, have recourse to the omnipotence of God, who has given to every soul, a power over the portion of matter containing the extremities of the nerves of the body, so that the power of every soul is restricted to a small part of the body, whereas the power of God extends to all the bodies of the universe. This system seems the most conformable to truth, though we are very far from pretending to have a particular knowledge of it.

The



The other two systems are the invention of philosophers, who boldly deny the possibility of a real influence of spirit upon bodies; though they are under the necessity of allowing it to the Supreme Being. According to them, the body cannot supply the soul with the first ideas of external things, nor the soul produce any motion in the body.

One of these two systems was the invention of *Descartes*; it goes by the name of *the system of occasional causes*. According to this philosopher, when the organs of sense are excited by exterior bodies, God immediately impresses on the soul, at the same instant, the ideas of these bodies; and when the soul wills, that any member of this body should move, still it is God, who immediately impresses, on that member, the motion desired, but all the while, the soul is in no manner of connection with its body. It was, therefore, altogether unnecessary, that the body should be a machine of such admirable construction, as the dullest mass would have answered the purpose equally well.

This system, accordingly, soon lost much of its credit, when the celebrated *Leibnitz* substituted, in its place, that of the pre-established harmony, which you have, no doubt, frequently heard mentioned in conversation.

According to this system of *pre-established harmony*, the soul and the body are two substances out of all connection, and exercising no manner of influence on each other. The soul is a spiritual substance, which, from its own nature, receives, or assumes, all its ideas,

ideas, its thoughts, its perceptions, without the body's having the least share in the matter; and the body is a machine most ingeniously constructed, like a clock, which produces all its motions, in succession, without any manner of influence on the part of the soul. But God, having foreseen, from the beginning, all the resolutions, which every soul would at every instant form, arranged the machine of the body, so as that its motions should, at every instant, harmonize with the resolutions of the soul. Thus, when I at this moment raise my hand, *Leibnitz* says, that God having foreseen my soul would will, at this moment, my hand to be raised, disposed the machine of my body in such a manner, that, in virtue of its proper organization, my hand should necessarily rise at the same instant; and, in like manner, that all the motions of the members of the body are performed in virtue of their proper organization, which has been, from the beginning, so disposed, as to be at all times in harmony with the determinations of the soul.

6th December, 1760.

L E T T E R LXXXIII.

*Examination of the System of pre-established Harmony.
An Objection to it.*

THERE was a time, when the system of pre-established harmony had acquired such a high reputation over all Germany, that to dare to call it in



in question was to incur the imputation of ignorance, or bigotry. The supporters of this system boasted, that, by means of it, the omnipotence and omniscience of the Supreme Being were set in their clearest light, and that it was impossible for any one, who believed in these exalted perfections of God, to entertain a doubt of the truth of this sublime system.

In fact, say they, we see, that poor, pitiful mortals, are capable of constructing machines so ingeniously, as to fill the vulgar spectator with astonishment: how much stronger reason, then, have we to admit, that God having known, from all eternity, all that my soul would wish and desire, at every instant, should have been able to construct such a machine, which, at every instant, should produce motions conformable to the determinations of my soul? Now, this machine is precisely my body, which is united to my soul, only by this harmony; so that if the organization of my body were deranged to such a degree, as to be no longer in harmony with my soul, this body would no more belong to me, than the body of a rhinoceros in the heart of Africa: and if, in the case of a derangement of my body, God should adjust that of a rhinoceros, so that its motions were in such harmony with the determinations of my soul, as to raise its paw at the moment I willed it; this body would then be mine, and would belong to my soul, as my present body now belongs to it, without having undergone itself, on that account, any change whatever.

Mr. *Leibnitz* himself has compared the soul and the
body

body to two clocks, which continually indicate the same hour. A clown who should see this beautiful harmony of these two clocks, would undoubtedly conclude, that they acted upon each other, but he would be under a mistake, for the one performs its motions independently of the other. The soul and the body are likewise two machines totally independent, the one being spiritual, the other material; but their operations are always in a harmony so complete, that we are induced to believe them to belong to each other, and that the one has a real influence upon the other, which is, however, a mere illusion.

In order to form a judgment of this system, I remark, first, That it cannot be denied to be possible for God to create a machine which should be always in harmony with the operations of my soul; but it appears to me that my body belongs to me by other rights than such a harmony, however beautiful it may be: and, I believe, you will not be disposed hastily to adopt a system which is founded on this principle alone, that no spirit can act upon a body; and that, reciprocally, a body cannot act upon, or supply ideas to, a spirit. This principle is, besides, destitute of all proof, the chimeras of its partisans, respecting simple beings, having been completely refuted. And if God, who is a spirit, has the power of acting upon bodies, it is not absolutely impossible that a spirit, such as the human soul, should be able likewise to act upon a body. Accordingly, we do not pretend to say, that our soul acts upon all bodies, but only upon a small particle of matter, with
respect



respect to which it has received the power of God himself, though to exercise it in a manner which we are utterly unable to comprehend.

Farther, the system of pre-established harmony labours under other great difficulties. According to it the soul derives all its knowledge from its own proper fund, without any contribution on the part of the body and the senses. Thus, when I read in the Gazette that the Pope is dead, and I come to the knowledge of the Pope's death, the Gazette and my reading have nothing to do with the communication of this knowledge, as these circumstances respect only my body and my senses, which have no manner of connection with my soul. But, conformably to this system, my soul derives, at the same time, from its own proper fund, the ideas which it has of this same Pope. It concludes, he must absolutely be dead, and this knowledge comes to it with the reading of the Gazette, so that I imagine the reading of the Gazette furnished me with this knowledge, though I really derived it from the proper fund of my soul.

But this idea is perfectly absurd. How was it possible for me so boldly to assert, that the Pope must necessarily have died at the moment mentioned in the Gazette, and that, only from the idea which I had of the Pope's condition and health, though, perhaps, I knew nothing about him, while I am infinitely better acquainted with my own situation, without knowing, however, what shall befall me tomorrow.

In like manner when you do me the honour to
read

read these letters, and derive the knowledge of some truth from them, it is your soul which extracts that truth from its own proper fund, without my contributing at all to it by my letters. The reading of them serves only to maintain the harmony which the Creator meant to establish between the soul and the body. It is only a formality, altogether superfluous, with respect to the knowledge itself. I shall, nevertheless, continue to tender you my instructions.

9th December, 1760.

LETTER LXXXIV.

Another Objection.

THERE is another objection to be made to the system of pre-established harmony; namely, that it is utterly destructive of human liberty. In fact, if the bodies of men are machines, similar to a watch, all their actions are a necessary consequence of their construction. Thus, when a thief steals my purse, the motion made by his hands is an effect as necessary of the machine of his body, as the motion of the hand of my clock, now pointing to nine. You will readily comprehend what must be the conclusion. As it would be unjust, nay, ridiculous, to think of being angry at the clock, and of chastising it, because it pointed to nine, it would be equally so, with respect to the thief, whom it would be absurd to punish for having stolen my purse.

VOL. I.

Y

.Of



Of this we had a well-known example in the reign of his late Majesty, when Mr. *Wolff* taught at Halle the system of the pre-established harmony. The King informed himself of this doctrine, which was then making a prodigious noise; and one of his Court having suggested to him that, according to Mr. *Wolff's* doctrines, soldiers were mere machines, and that when one deserted, it was a necessary consequence of his particular structure, and therefore ought not to subject him to punishment, as would be the case, were a machine an object of punishment, for having performed such and such a motion; the King was so provoked at this representation, that he gave orders to banish *Wolff* from Halle, with certification, that if he was found there at the end of twenty-four hours, he should be hanged up. The philosopher upon this took refuge at Marburg, where I conversed with him soon after.

But the partisans of this system have always maintained that the pre-established harmony by no means encroached on human liberty. They admit that the exterior actions of men are necessary effects of the organization of the body, and that, in this respect, they take place as necessarily as the motions of a watch: but that the mental determination enjoyed perfect liberty: that these may be deserving of punishment, though the corporeal action was necessary: that the criminality of an action consists less in the act, or motions of the body, than in the resolution or intention of the soul, which remains entirely free. Let us conceive, say they, the soul of a thief, determining

mining, at a certain time, to commit a robbery: God having foreseen this intention, has provided it with a body, organized in such a manner as to produce, precisely at the same time, the motions requisite for the commission of this robbery: the action, say they, is itself the necessary effect of the organization of the body, but that the intention of the thief is a free act of his soul, which is not, on that account, less culpable and less punishable.

Notwithstanding this reasoning, the supporters of the system of pre-established harmony will always find themselves very much embarrassed to maintain the liberty of the determinations of the soul. For, according to them, the soul is itself similar to a machine, though of a nature totally different from that of the body; the representations produced in it are occasioned by those which precede, and these again by others anterior to them, and so on, so that they follow each other as necessarily as the motions of a machine. In fact, say they, men act always from certain motives, founded on the representations of the soul, which succeed each other, conformably to its fate.

You will recollect that, according to this system, the soul derives no one idea from the body, not being in any real connection with it; but all from its own proper fund. Present ideas flow from those which preceded, and are a necessary consequence of them; so that the soul is nothing less than master of its own ideas, which generate its resolutions, and which are therefore as little under its power: and, conse-



consequently, all its actions are founded on its present state, that on the immediately preceding, and so on, are a necessary effect of the first state in which it was created, over which it certainly could have no power, and, of consequence, could not be free. In depriving men of their liberty, all their actions become necessary, and can no longer be considered as either right or criminal.

No one of those philosophers has hitherto been able to remove these difficulties; and their adversaries have a right to object to them, that this opinion is subversive of all morality, and makes every crime which men commit to recoil on God himself, which is, undoubtedly, the grossest impiety. We must not, however, load them with the imputation of such consequences, though they flow very naturally from their principles. The article of liberty is a stumbling block in philosophy; and it is extremely difficult to steer clear of the dangers which press on all sides.*

13th December, 1760.

* The King of Prussia (Frederick II.) though no believer in the pre-established harmony, hastened to do justice to *Wolff*, the moment he mounted the throne. The original cause of his persecution was the resentment of an ecclesiastic, jealous of *Wolff*, as *Voetius* was of *Descartes*. The pride of men of this description has long endeavoured to subject thought itself to their opinions or to their interest; but the world begins to entertain for them the horror and the contempt which they deserve.*

Besides, these objections respecting liberty are not peculiar to

* So, because one Prussian theologian was jealous, and a bigot, according to Mr. *Condorcet*, he permits himself to brand the whole order with the imputation of these odious qualities. The impartial Reader will judge whether it is not as possible for a philosopher and a free-thinker to be uncautious and illiberal, as for an ecclesiastic.—E. E.

the

LETTER LXXXV.

Of the Liberty of Spirits; and a Reply to Objections against Liberty.

THE greatest difficulties on the subject of liberty, even those which appear insurmountable, arise from want of distinguishing, with sufficient attention, between the nature of spirit and that of body. The Wolfian philosophers even go so far as to put spirits, and the elements of body, on the same footing, and give to both the one and the other the name of *monads*, the nature of which, according to them, consists in the power of changing their state; from whence result all the changes in bodies, and all the representations and actions of spirits.

Since, then, in this system, the actual state of bodies and of spirits derives its determination from that which immediately preceded; and as the actions of spirits are derived, like those of bodies, from their preceding state, it is evident, that liberty is no more an attribute of spirit than it is of body. As to body, it is impossible to conceive the least shadow of liberty in it; for liberty always supposes the power of committing, of admitting, or of suspending an action,

the system of pre-established harmony, but common to all. It is certain that in such and such circumstances I will perform such an action, and yet I shall have the power of acting otherwise. This action will *infallibly* take place but not *necessarily*. This is the real difficulty.—F. E.

Y 3

and



and this is directly opposite to all that passes in body. Would it not, then, be ridiculous to expect that a watch should point to any other hour than what it actually does, and to think of punishing it on that account? Would it not be absurd to fly into a passion at a puppet, because, after several other gestures, it had turned it's back to us?

All the changes which take place in bodies, and which are all reducible to their state of rest, or of motion, are the necessary consequence of the powers which act upon them; and their action once admitted, no changes in bodies can take place, but precisely such as do take place: what respects body, therefore, is an object of neither praise nor blame. However ingeniously a piece of mechanism may be constructed, the commendation which we bestow upon it reverts to the artist; the machine itself has no interest in what passes; the artist, too, is alone responsible for the defects of a clumsy and awkward machine; the machine itself is perfectly innocent. While, therefore, the enquiry is restricted to bodies, they are clearly in no respect responsible; no reward, no punishment can possibly attach to them; all the changes and motions produced in them, are the necessary consequences of their structure.

But spirits are of a very different nature, and their actions depend on principles directly opposite. Liberty, entirely excluded from the nature of body, is the essential portion of spirit, to such a degree, that without liberty, a spirit could not exist; and this it is which renders it responsible for it's actions. This property

property is as essential to spirit as extension or impenetrability is to body; and as it would be impossible for the divine Omnipotence itself to divest body of these qualities, it would be equally impossible for it to divest spirits of liberty. A spirit without liberty, would no longer be a spirit, as a body without extension would no longer be a body.

It has in all ages been a subject of eager enquiry among philosophers, How God could have permitted sin to enter into the world? Had they reflected that the souls of men are beings necessarily free, from their very nature, the controversy would have been easily settled.

The objections commonly made to human liberty are these: A spirit, it is said, or a man, is never determined to an action, but from motives; and after having carefully weighed the reasons on both sides, he finally decides in favour of that which he deems the preferable. Hence they conclude that motives determine the actions of men, just as the motion of a ball on the billiard table is determined by the stroke impressed upon it, and that the actions of men are no more free than the motion of the ball. But it must be considered that the motives which engage a man to undertake any enterprize, refer very differently to the soul, from what the stroke does to the ball. The stroke produces it's effect necessarily; but a motive, however powerful, prevents not the action from being voluntary. I had very powerful motives to undertake a journey to Magdeburg: a regard to my promise; the prospect of enjoying the felicity of



paying my respects to your Highness; but I am perfectly sensible, at the same time, that I was not forced to it: and that it was entirely in my own power to take that journey, or to have remained at Berlin. But a body, impelled by any power, necessarily obeys, and it cannot be affirmed that it was at liberty to obey, or not, as it pleased.

The motive which determines a spirit to regulate its resolves, is of a nature wholly different from a *cause* or *force* acting upon body. Here, the effect is produced necessarily; and there, the effect remains always voluntary, and the soul has power over it. On this is founded the *imputability* of the actions of a spirit, which makes it responsible for them, and which is the true foundation of right and wrong. As soon as we have settled this infinite difference between spirit and body, the question respecting liberty presents very little difficulty.

16th December, 1760.

L E T T E R LXXXVI.

The same Subject continued.

THE difference which I have just established between the *motives*, conformably to which spirits act, and the *causes* or *powers* which act on bodies, discovers to us the true foundation of liberty.

Imagine a puppet so artfully constructed with wheels and springs, as to be able to approach my pocket,

pocket, and to pick out my watch, without my perceiving it. This action being a necessary consequence of the organization of the machine, could not be considered as a robbery; and I should render myself ridiculous if I got into a passion at it, and insisted on having the machine hanged. Every one would say that the puppet was innocent, and incapable of committing a blameable action; it would be, besides, equally indifferent to the puppet to be hanged, or placed on a throne. But if the artist had contrived this machine on purpose to steal, and to enrich himself by such means, however much I might admire the ingenuity displayed on the mechanism, I should reckon myself obliged to bring him to justice as a thief. It follows, then, that even in this case the criminality reverts upon an intelligent being, or a spirit, and that spirits alone are responsible for their actions.

Let every man examine his own actions, and he will always find that he was not forced into them, though he might be induced by motives. If his actions are commendable, he is perfectly conscious of meriting the praises bestowed upon him. However he might be deceived in his other judgments, he cannot in this case; the sentiment of his liberty is so intimately connected with that liberty itself, that they are inseparable. It is possible to entertain a doubt where the liberty of another is concerned, but it is impossible ever to be deceived respecting one's own. A clown, for example, on seeing the puppet above described, might easily imagine it to be a real thief,



thief, and that it likewise was a free agent: in this he would be mistaken; but with respect to his own liberty, it is impossible for him to mistake; as he deems himself free, he is so in fact. It might likewise happen, that the clown in question, undeceived as to the puppet, should afterwards consider a dexterous thief as a machine, destitute of all sentiment, and of liberty: here he would fall into the opposite error, but as to his own actions, he will never be mistaken.

It would, therefore, be ridiculous to affirm, that it might be possible for a watch to imagine that its hand turned freely, and to believe that it now points to nine, because it pleases to do so, but could point to any other hour, if it thought proper: the watch would undoubtedly deceive itself. But the whole supposition is manifestly absurd. You must first ascribe to the watch sentiment and imagination, and accordingly suppose it a spirit or soul, which necessarily implies liberty; and afterwards consider it as a mere machine, divested of liberty, which is a manifest contradiction.

Another objection, however, is started against liberty, founded on the divine *prescience*. God, it is said, forefaw, from all eternity, every resolution which I should form, and every action which I should do, during every instant of my life. If God forefaw I should just now continue to write, that I should, by and by, lay down my pen, and rise to take a walk, my action would be no longer free, for I am under the necessity of writing, of laying down the pen,

pen, and of rising to walk; and it would be impossible for me to act otherwise, as it was impossible God should be deceived in what he foresees?

The reply is obvious. Because God forefaw, from all eternity, that I should perform, on such a day, such an action, it does not follow that I shall perform it, because God forefaw it. For it is evident that it ought not to be alleged, in the cause supposed, That I go on to write, *because* God forefaw I should go on to write; but, on the contrary, as I judge it proper to go on to write, God forefaw that I would do so. Thus the prescience of God by no means encroaches on my liberty; and all my actions remain equally at liberty, whether God forefaw them or not.

Some, however, in the view of supporting liberty, have gone so far as to deny the divine prescience; but you will have little difficulty in detecting the falsehood of this opinion. Is it so surprising that the Supreme Being, who is acquainted with all my propensities, should be able to foresee the effect which every motive will produce on my soul, and, consequently, all the resolutions which I shall form, in conformity to these effects, when simple mortals, such as we are, frequently exercise a similar prescience? You can easily imagine to yourself a man extremely covetous, who has a fair opportunity of making a considerable advantage. You know, for certain, he will not fail to avail himself of it. Your knowledge of this, however, has no influence upon the man; he goes into it with the full determination of his own mind, as if you had never spent a thought upon him.



him. Now, as God is infinitely better acquainted with men, and all their dispositions, it is not to be doubted that he could have foreseen their actions, in all situations. The presence of God, with respect to the free actions of spirits, is, nevertheless, founded on another principle than that of the changes which *must* take place in the corporeal world, where all is under the power of necessity. This distinction shall be the subject of my next letter.

20th December, 1760.

—•••—
LETTER LXXXVII.

Influence of the Liberty of Spirits upon Events.

IF the world contained bodies only, and if the changes which take place in it, were necessary consequences of the laws of motion, conformably to the powers with which they act upon each other, all events would be necessary, and would depend on the first arrangement which the Creator had established of the bodies of the universe; so that this arrangement, once established, it should be impossible for other events afterwards to take place, than those which happen in the actual order of things. The world would, undoubtedly, be in this case, a mere machine, similar to a watch, which, once wound up, afterwards produces all the motions by which we measure time.

Imagine to yourself a musical clock; such a clock, once regulated, all the motions which it performs,
and

and the airs which it plays, are produced in virtue of its construction, without any fresh application of the hand of the master, and, in that case, we say it is done mechanically. If the artist touches it, by changing the notch, or the cylinder, which regulates the airs, or by winding it up, it is an external action, which, not being founded on the organization of the machine, no longer appertains to it. And if God, as Lord of the universe, should change immediately any thing in the course of successive events, this change would no longer appertain to the machine: it would then be a *miracle*.

A miracle, consequently, is an immediate effect of the divine Omnipotence, which could not have taken place, had God left the machine of the universe freely to take its course. Such would be the state of the universe, if it contained bodies only; in that case it might be said, that all events take place in it from an absolute necessity, each of them being a necessary effect of the structure of the universe; unless it pleased God to work miracles.

The same thing would happen, on admitting the system of pre-established harmony, though it allows the existence of spirits; for, according to this system, spirits do not act upon bodies, but these perform all their motions and actions only in virtue of their structure, once established; so that when I raise my arm, this motion is an effect as necessary of the organization of my body, as that of the wheels in a watch. My soul, in no respect, contributes to it; it



is God who, from the beginning, arranged the matter, so that the action of my body must necessarily result from it, at a certain time, and raise the arm at the instant that my soul willed it. Thus, my soul has no influence upon my body, any more than upon those of other men and of animals: and, consequently, according to this system, the universe is merely corporeal, and events are a necessary effect of the primitive organization which God has established in the universe.

But, if we allow to the souls of men and of animals the power of producing motion in their bodies, which their organization alone would not have produced, the system of the universe is not a mere machine, and events do not necessarily take place as in the preceding case.

The universe will present events of two kinds; the one, those over which spirits have no manner of influence, which are corporeal, or dependant on the machine, as the motion and phenomena of the heavenly bodies; these take place as necessarily as those of a watch, and depend entirely on the primitive establishment of the universe. The others depend on the soul, united to the body of men and animals, and are no longer necessary, as the preceding, but result from the liberty, as from the will, of these spiritual beings.

These two kinds of events distinguish the universe from a mere machine, and raise it to a rank infinitely more worthy of the almighty Creator, who formed it.

it. The government of this universe will likewise ever inspire us with the most sublime idea of the sovereign wisdom and goodness of God.

It is certain, therefore, that liberty, which is absolutely essential to spirits, has a very great influence on the events of the world. You have only to consider the fatal consequences of these wars, which all result from human actions, determined by their will, or their caprice.

It is likewise certain, at the same time, that the events which take place do not depend only on the will of men and animals. Their power is very limited, being restricted to a small portion of the brain, in which all the nerves terminate: and this action is confined to the communication of an impression of a certain motion on the members, which may afterwards operate on other bodies, and these again on others, so that the slightest motion of my body may have a very great influence on a multitude of events.

Man, however, though master of the first motion of his body, which occasions these events, is not so of the consequences of his action. These depend on so many circumstances, that the most sagacious mind is incapable of foreseeing them: accordingly, we every day see the best concerted projects failing. But it is here that we must acknowledge the government and providence of God, who, having from all eternity foreseen all the counsels, the projects, and the voluntary actions of men, arranged the corporeal world in such a manner, that it brings about, at all times, circumstances which cause these enterprises to fail



fail or to succeed, according as his infinite wisdom judges to be most fit. God thus remains absolute sovereign of all events, notwithstanding the liberty of men, all whose actions, though free, are, from the beginning, part of the plan which God intended to execute, when he created this universe.

This reflection plunges us into an abyss of wonder and adoration at the infinite perfections of the Creator; while we consider that there is nothing so mean in itself as not to be, from the beginning of the world, an object worthy of entering into the original plan which God proposed to himself.

23d December, 1760.

—*—

LETTER LXXXVIII.

Of Events, natural, supernatural, and moral.

IN common life, we carefully distinguish events produced by corporeal causes from those in which men and animals co-operate. Those of the former description are denominated *natural events*, or produced by natural causes; such are the phenomena of the heavenly bodies, eclipses, tempests, whirlwinds, earthquakes, &c. These are called natural phenomena, because it is understood that neither men nor animals are active in the production of them.

If we see a tree torn up by the roots, through the violence of the wind, we call it a natural effect: but if it were done by the strength of man, or the pro-

boscis

boscis of an elephant, no one would call this a natural effect. When our plains are deluged by an inundation, or destroyed by the hail, we say the cause of this calamity was natural; but if the mischief were done by the invasion of an enemy, we would no longer deem the cause of it to be natural.

If such an evil were to be produced by a miracle, or by the immediate power of God, we would say the cause of it was *supernatural*; but if the event were occasioned by men or animals, we would not, in that case, give it the name of either natural or supernatural. We would characterize such an event simply by the name of *action*, which denotes an effect that is neither natural nor supernatural. It might with greater propriety be denominated *moral*, as it depends on the liberty of an intelligent agent.

Thus, when *Quintus Curtius* gives us a detail of the actions of *Alexander the Great*, he communicates to us the knowledge of the events brought about by the voluntary determinations of that hero. Such an action always supposes freedom of resolution in a spiritual being; a power of determination which depends upon his will, and of which he is master. I say, of which he is master; for there is a great variety of motions, the production of which, were we to determine to will them ever so much, we should not, however, be obeyed, because over such movements we have no power.

I am not master even of all the motions performed in my own body; that of my heart and of my blood

VOL. I.

Z

is



is not subject to my power, or to the empire of my soul, as the action which I perform when I write this letter. There are other motions which partake of the nature of both these, such as respiration, which it is in my power to accelerate, or to retard to a certain degree, but of which I am by no means the absolute master.

Language is not sufficiently rich to express, by one appropriate term, all these different kinds of events. There are some produced by natural causes merely, and which are necessary consequences of the arrangement of bodies in the universe; and as these necessarily come to pass, the knowledge of this arrangement enables us to foretell a great number of them, such as the situation of the heavenly bodies, eclipses, and other phenomena depending on them, for any given time whatever. There are other events which depend only on the will of free and spiritual beings, as the actions of every man and of every animal. It is impossible for us to foresee any thing of these, in particular, unless by conjecture merely; and in this we are frequently very grossly mistaken. God alone possesses this knowledge in a supreme degree.

From these two kinds of events there arises a third, in which natural causes concur with such as are voluntary, and dependant on a being exercising its liberty. Of this the billiard table furnishes an example. The strokes impressed on the balls depend on the will of the players; but as soon as motion is communicated to them, the continuation of that motion,

motion, and their collision with each other, or with the cushion, are necessary consequences of the laws of motion.

In general, most of the events which take place on the earth, must be referred to this species, as there are scarcely any over which men and animals have not some influence. The cultivation and produce of our fields require, in the first instance, the voluntary exertions of men or beasts, but the sequel is an effect of causes purely natural. It is accordingly of importance to remark, that God acts in a manner totally different toward bodies and spirits. God has established, for bodies, laws of rest and motion, conformably to which all changes necessarily take place; as bodies are merely passive beings which preserve themselves in their state, or necessarily obey impressions made upon them by others, as I formerly explained; whereas spirits are susceptible of no force or constraint, but are governed of God by precepts and prohibitions.

With respect to bodies, the will of God is always perfectly accomplished; but with respect to spiritual beings, such as men, the contrary very often happens. When it is said to be the will of God that men should love one another, we mean by that expression a commandment which men ought to obey; but this is very far from being the case. God does not force men to it, for this would be contrary to the liberty which is essential to them; but He endeavours to engage men to the observance of this command-



commandment, by proposing to them motives the most powerful; but it always depends on the will of man, whether he is to obey or not. In this sense we are to understand the will of God, when it refers to the free actions of spiritual beings.

27th December, 1760.

—*—

LETTER LXXXIX.

Of the Question respecting the best World possible; and of the Origin of Evil.

YOU know well, that it has been made a question, Whether this world be the best possible? It cannot be doubted, that the world perfectly corresponds to the plan which God proposed to himself, when he created it.

As to bodies, and material productions, their arrangement and structure are such, that certainly they could not have been better. Please to recollect the wonderful structure of the eye, and you will see the necessity of admitting, that the conformation of all it's parts is perfectly adapted to fulfil the end in view, that of representing distinctly exterior objects. How much address is necessary to keep up the eye in that state, during the course of a whole life? The juices which compose it must be preserved from corruption; it was necessary to make provision, that they should be constantly renewed, and maintained in a suitable state.

A structure

A structure equally marvellous is observable in all the other parts of our bodies, in those of all animals, and even of the vilest insects. And the structure of these last, is so much the more admirable, on account of their smallness, that it should perfectly satisfy all the wants which are peculiar to each species. Let us examine only the sense of seeing in these insects, by which they distinguish objects so minute, and so near, as to escape our eyes, and this examination alone will fill us with astonishment.

We discover the same perfection in plants: every thing in them concurs to their formation, to their growth, and to the production of their flowers, of their fruits, or of their seeds. What a prodigy to behold a plant, a tree, spring from a small grain, cast into the earth, by the help of the nutritious juices with which the soil supplies it? The productions found in the bowels of the earth are no less wonderful: every part of nature is capable of exhausting our utmost powers of research, without permitting us to penetrate all the wonders of it's construction. Nay, we are utterly lost, while we reflect, how every substance, earth, water, air, and fire, concur in the production of all organized bodies; and, finally, how the arrangement of all the heavenly bodies is so admirably contrived, as perfectly to fulfil all these particular destinations.

After having reflected in this manner, it will be difficult for you to believe, that there should have been men who maintained, that the universe was the

Z 3

effect



effect of mere chance, without any design. But there always have been, and there still are, persons of this description; those, however, who have a solid knowledge of nature, and whom fear of the justice of God does not prevent from acknowledging Him, are convinced, with us, that there is a Supreme Being, who created the whole universe, and, from the remarks which I have just been suggesting to you, respecting bodies, every thing has been created in the highest perfection.

As to spirits, the wickedness of man seems to be an infringement of this perfection, as it is but too capable of introducing the greatest evils into the world, and these evils have, at all times, appeared incompatible with the sovereign goodness of God. This is the weapon usually employed by infidels against religion, and the existence of God. If God, say they, was the author of the world, He must also be the author of the evil which it contains, and of the crimes committed in it.

This question, respecting the origin of evil; the difficulty of explaining, How it can consist with the sovereign goodness of God, has always greatly perplexed philosophers and divines. Some have endeavoured to give a solution, but it has satisfied only themselves. Others have gone so far as to maintain, that God was, in fact, the author of moral evil, and of crimes; always protesting, at the same time, that this opinion ought to bring no imputation on the goodness and holiness of God. Others, finally, con-

sider

sider this question as a mystery which we cannot comprehend; and these last, undoubtedly, have embraced the preferable sentiment.

God is supremely good and holy; He is the author of the world, and that world swarms with crimes and calamities. These are three truths which it is, apparently, difficult to reconcile: but, in my opinion, a great part of the difficulty vanishes, as soon as we have formed a just idea of spirit, and of the liberty so essential to it, that God himself cannot divest it of this quality.

God having created spirits, and the souls of men, I remark, first, that spirits are beings infinitely more excellent than bodies; and, secondly, that, at the moment of creation, spirits were all good: for time is requisite to the formation of evil inclinations: there is, therefore, no difficulty in affirming, that God created spirits. But it being the essence of spirits to be free, and liberty not being capable of subsisting without a power to sin, to create a spirit possessed of the power of sinning, has nothing inconsistent with divine perfection, because a spirit could not be created destitute of that power.

God has, besides, done every thing to prevent crimes, by prescribing to spirits, precepts, the observance of which must always render them good and happy. There is no other method of treating spirits, which cannot be subject to any constraint; and if some of them have abused their liberty, and transgressed these commandments, they are respon-

Z 4

sible



fible for it, and worthy of punishment, without any impeachment of the Deity.

There remains only one objection more to be considered: namely, that it would have been better not to create such spirits, as God foresaw they must sink into criminality. But this far surpasses human understanding; for we know not, whether the plan of the world could subsist without them. We know, on the contrary, by experience, that the wickedness of some men frequently contributes to the correction and amendment of others, and thereby conducts them to happiness. This consideration, alone, is sufficient to justify the existence of evil spirits. And, as God has all power over the consequences of human wickedness, every one may rest assured, that in conforming to the commandments of God, all events which come to pass, however calamitous they may appear to him, are always under the direction of Providence, and, finally, terminate in his true happiness.

This providence of God, which extends to every individual, in particular, thus furnishes the most satisfactory solution of the question respecting the permission, and the origin, of evil.*

30th December, 1760.

* Mr. Euler concludes this letter, with the following short sentence: "This likewise is the foundation of all religion, the alone object of which is to promote the salvation of mankind." What reason could there be for suppressing a sentiment so natural, so much in place, and so inoffensive?—E. E.

LETTER

LETTER XC.

*Connection of the preceding Considerations with Religion.
Reply to the Objections of the philosophic Systems against Prayer.*

BEFORE I proceed farther in my lessons on philosophy and physics, I think it my duty to point out to you their connection with religion.*

I begin with considering an objection, which almost all the philosophic systems have started, against prayer. Religion prescribes this as our duty, with an assurance, that God will hear and answer our vows and prayers, provided they are conformable to the precepts which he has given us. Philosophy, on the other hand, instructs us, that all events take place in strict conformity to the course of nature, estab-

* I take the liberty, likewise, to restore the following passage, which M. de Condorcet, in his philosophic squeamishness, has thought unworthy of a place in his edition of the work.

"However extravagant and absurd the sentiments of certain philosophers may be, they are so obstinately prepossessed in favour of them, that they reject every religious opinion and doctrine, which is not conformable to their system of philosophy. From this source are derived most of the sects and heresies in religion. Several philosophic systems are really contradictory to religion; but in that case, divine truth ought, surely to be preferred to the reveries of men, if the pride of philosophers knew what it was to yield. Should sound philosophy sometimes seem in opposition to religion, that opposition is more apparent than real; and we must not suffer ourselves to be dazzled with the speciousness of objection."—E. E.

lished



lished from the beginning, and that our prayers can effect no change whatever; unless we pretend to expect, that God should be continually working miracles, in compliance with our prayers. This objection has the greater weight, that religion itself teaches the doctrine of God's having established the course of all events, and that nothing can come to pass, but what God foresaw from all eternity. Is it credible, say the objectors, that God should think of altering this settled course, in compliance with any prayers which men might address to him?

But I remark, first, that when God established the course of the universe, and arranged all the events which must come to pass in it, he paid attention to all the circumstances which should accompany each event; and particularly to the dispositions, to the desires, and prayers, of every intelligent being; and that the arrangement of all events was disposed, in perfect harmony, with all these circumstances. When, therefore, a man addresses to God a prayer worthy of being heard, it must not be imagined, that such a prayer came not to the knowledge of God till the moment it was formed. That prayer was already heard from all eternity; and if the Father of mercies deemed it worthy of being answered, He arranged the world expressly in favour of that prayer, so that the accomplishment should be a consequence of the natural course of events. It is thus that God answers the prayers of men, without working a miracle.

The establishment of the course of the universe,
fixed

fixed once for all, far from rendering prayer unnecessary, rather increases our confidence, by conveying to us this consolatory truth, That all our prayers have been already, from the beginning, presented at the feet of the throne of the Almighty, and that they have been admitted into the plan of the universe, as motives conformably to which events were to be regulated, in subserviency to the infinite wisdom of the Creator.

Can any one believe, that our condition would be better, if God had no knowledge of our prayers before we presented them, and that He should then be disposed to change, in our favour, the order of the course of nature? This might well be irreconcilable to his wisdom, and inconsistent with his adorable perfections. Would there not, then, be reason to say, that the world was a very imperfect work? that God was entirely disposed to be favourable to the wishes of men; but, not having foreseen them, was reduced to the necessity of, every instant, interrupting the course of nature, unless he were determined totally to disregard the wants of intelligent beings, which, nevertheless, constitute the principal part of the universe? For to what purpose create this material world, replenished with so many great wonders, if there were no intelligent beings, capable of admiring it, and of being elevated by it, to the adoration of God, and to the most intimate union with their Creator, in which, undoubtedly, their highest felicity consists?

Hence, it must, absolutely, be concluded, that in-
telligent



telligent beings, and their salvation, must have been the principal object, in subordination to which, God regulated the arrangement of this world; and we have every reason to rest assured, that all the events which take place in it, are in the most delightful harmony with the wants of all intelligent beings, to conduct them to their true happiness; but without constraint, because of their liberty, which is as essential to spirits, as extension is to body. There is, therefore, no ground for surprize, that there should be intelligent beings, which shall never reach felicity.

In this connection, of spirits with events, consists the divine Providence, of which every individual has the consolation of being a partaker; so that every man may rest assured, that, from all eternity, he entered into the plan of the universe. How ought this consideration to increase our confidence, and our joy in the providence of God, on which all religion is founded! You see then, that on this side religion and philosophy are by no means at variance.

3d January, 1761.

—*—*—*—
L E T T E R X C I .

The Liberty of intelligent Beings in Harmony with the Doctrines of the Christian Religion.

LIBERTY is a quality so essential to every spiritual being, that God himself cannot divest them of it, just as He cannot divest a body of it's extension,

tion, or of it's *inertia*, without entirely destroying, or annihilating it: to divest a spirit of liberty, therefore, would be the same thing as to annihilate it. This must be understood of the spirit, or soul itself, and not of the actions of the body, which the soul directs, in conformity to it's will. If you would prevent me from writing, you have but to bind my hands; to write is, undoubtedly, an exercise of liberty; but then, though you may say, that you have deprived me of the liberty of writing, you have only deprived my body of the faculty of obeying the dictates of my soul. Bind me ever so hard, you cannot extinguish in my spirit an inclination to write; all you can do is to prevent the execution of it.

We must always carefully distinguish between inclination, or the act of willing, and execution, which is performed by the ministration of the body. The act of willing cannot be restrained by any exterior power, not even by that of God, for liberty is independent of all exterior force. But there are means of acting on spirits, by motives which have a tendency, not to constrain, but to persuade. Let a man be firmly determined to engage in any enterprize, and let us suppose the execution of it prevented; without making any change in his intention, or will, it might be possible to suggest motives, which should engage him to abandon his purpose, without employing any manner of constraint: however powerful these motives may be, he is always master of his own will; it never can be said, that he was forced, or constrained, to it, at least the expression



would be improper ; for the proper term is *persuade*, which is so suitable to the nature, and the liberty, of intelligent beings, that it cannot be applied to any other. It would be very ridiculous, for example, in playing at billiards, to say, that I persuaded the ball to run into the hazard.

This sentiment, respecting the liberty of spirits, appears, however, to some persons, contrary to the goodness, or the power, of the Supreme Being. Liberty, from it's very nature, can submit to no degree of constraint, even on the part of God. But without exercising any constraint over spirits, God has an infinite variety of means of presenting them with persuasive motives ; and, I believe, that all possible cases are adapted by Providence to our condition, in such a manner, that the most abandoned wretches might derive from them the most powerful motives to conversion, if they would but listen to them : and that a miracle would not produce a better effect on these vicious spirits ; they might be affected by it, for a season, but would not become better. It is thus that God co-operates in our conversion, by furnishing us with motives the most efficacious, and by the circumstances and opportunities which his providence supplies.

If, for example, a man, who hears an awakening sermon, is affected by it, repents, and is converted ; the act of his soul is evidently his own work ; but the occasion of the sermon, which he was so happy as to hear, precisely at the time, when he was disposed to profit by it, was nothing less than his work ; the
divine

divine Providence over-ruled that circumstance, so salutary to him. In fact, without the opportunity, over which the man had no power, he would have persisted in a sinful course.

Hence, you will easily comprehend the meaning of such expressions as these : " Man can do nothing of himself ; all depends on divine grace ; it is God " that worketh to will and to do." The favourable circumstances which Providence supplies to men, are sufficient to elucidate these expressions, without having recourse to a secret force, which acts by constraint on human liberty ; as these circumstances are directed of God, in conformity to the most consummate wisdom, in the view of conducting every intelligent being to happiness and salvation, unless he wilfully rejects the means by which he might have attained true felicity.

6th January, 1761.

LETTER XCII.

Elucidation respecting the Nature of Spirits.

IN order more clearly to elucidate what I have just said respecting the difference between body and spirit ; for it is impossible to be too attentive to what constitutes that difference, as it extends so far, that spirit has nothing in common with body, nor body with spirit, I think it necessary to subjoin the following reflections.

Extension,



Extension, *inertia* and impenetrability, are the properties of body; Spirit is without extension, without *inertia*, without impenetrability. All philosophers are agreed, that extension cannot have place in respect of spirit. It is a self-evident truth, for every thing extended is divisible, and you can form the idea of it's parts; but a spirit is susceptible of no division; you can have no conception of it's half, or of it's third part. Every spirit is a complete being, to the exclusion of all parts; it cannot, then, be affirmed, that a spirit has length, breadth, or thickness. In a word, all that we conceive of extension, must be excluded from the idea of a spirit.

It would appear, therefore, that as spirits have no magnitude, they must resemble geometrical points, the definition of which is, that they have neither length, breadth, nor depth. Would it be a very accurate idea to represent to ourselves a spirit by a mathematical point? The scholastic philosophers have professed this opinion, and considered spirits as beings infinitely small, similar to the most subtile particles of dust, but endowed with an inconceivable activity and agility, by which they are enabled to transport themselves, in an instant, to the greatest distances. They maintained, that in virtue of this extreme minuteness, millions of spirits might be inclosed in the smallest space; they even made it a question, How many spirits could dance on the point of a needle?

The disciples of *Wolff* are nearly of the same opinion. According to them, all bodies are composed of particles extremely-minute, divested of all magnitude,

tude, and they give them the name of monads. A monad, then, is a substance destitute of all extension, and on dividing a body, till you come to particles so minute, as to be susceptible of no farther division, you have got to the Wolfian monad, which differs, therefore, from the most subtile particle of dust, only in this, that the minutest particles of dust are not, perhaps, sufficiently small, and that a farther division is still necessary to obtain real monads.

Now, according to Mr. *Wolff*, not only all bodies are composed of monads, but every spirit is merely a monad; and the Supreme Being, I tremble as I write it, is, likewise, a monad. This does not convey a very magnificent idea of God, of spirits, and of the souls of men. I cannot conceive, that my soul is nothing more than a being, similar to the last particles of a body, or that it is reduced almost to a point. It appears to me still less capable of being maintained, that several souls joined together, might form a body, a slip of paper, for example, to light a pipe of tobacco. But the supporters of this opinion, go upon this ground, that as a spirit has no magnitude, it must, of necessity, resemble a geometrical point. Let us examine the solidity of their reasoning.

I remark, first, that as a spirit is a being of a nature totally different from that of body, it is absurd to apply to it standards, which suppose magnitude, and that, consequently, it would be folly to ask, how many feet, or inches, long, a spirit is, or how many pounds, or ounces, it weighs? These questions are applicable only to things which have length, or



weight : and are as absurd as if, speaking of time, it were to be asked, how many feet long an hour was, or how many pounds it weighed ? I can always, confidently, affirm, that an hour is not equal to a line of 100 feet, or of ten feet, or of one foot, or any other standard of measure ; but it by no means follows, that an hour must be a geometrical point. An hour is of a nature entirely different, and it is impossible to apply to it any standard, which supposes a length, which may be expressed by feet, or inches.

The same thing holds good as to spirit. I can always boldly affirm, that a spirit is not ten feet, nor 100 feet, nor any other number of feet ; but it does not hence follow, that a spirit is a point, any more than that an hour must be one, because it cannot be measured by feet or inches. A spirit, then, is not a monad, or in any respect similar to the ultimate particles into which bodies may be divided ; and you are perfectly able to comprehend, that a spirit may have no extension, without being, on that account, a point, or a monad. We must, therefore, separate every idea of extension from that of spirit.

To ask, In what place does a spirit reside ? would be, for the same reason, likewise, an absurd question ; for to connect spirit with place, is to ascribe extension to it. No more can I say, in what place an *hour* is ; though assuredly an hour is something ; something, therefore, may exist, without being attached to a certain place. I can, in like manner, affirm, that my soul does not reside in my head, nor out of my head, nor in any particular place ; without it's
being

being deduced, as a consequence, that my soul has, therefore, no existence ; just as it may be with truth affirmed of the hour now passing, that it exists neither in my head, nor out of my head. A spirit exists, then, though not in a certain place ; but if our reflection turns on the power which a spirit has, of acting upon a body, the action is, most undoubtedly, performed in a certain place.

My soul, then, does not exist in a particular place, but it acts there, and as God possesses the power of acting upon all bodies, it is, in this respect, we say, He is every where, though his existence is attached to no place.

10th January, 1761.

L E T T E R X C I I I .

The Subject continued. Reflections on the State of Souls after Death.

YOU will, probably, be surprized at the sentiment which I have just now ventured to advance, that spirits, in virtue of their nature, are in no place. In thus affirming, I shall, perhaps, be in danger of passing for a man who denies the existence of spirits, and, consequently, that of God. But I have already demonstrated, that something may exist, and have a reality, without being attached to any one place. The example drawn from an hour, though feeble, removes the greatest difficulties, though
A a 2
there



there is an infinite difference between an hour and a spirit.

The idea which I form of spirits, appears to me incomparably more noble than that of those who consider them as geometrical points, and who reduce God himself to this class. What can be more shocking than to confound all spirits, and the Supreme Being among the rest, with the minutest particles into which a body is divisible, and to rank them in the same class with these particles, which it is not in the power of the learned term monad to ennoble?

To be in a certain place, is an attribute belonging only to corporeal things, and, as spirits are of a totally different nature, it is not a matter of surprize to say, that they are not to be found in any place, and I am under no apprehension of reproach, for the elucidations which I have submitted to you on this subject. It is thus I exalt the nature of spirits infinitely above that of bodies.

Every spirit is a being that thinks, reflects, reasons, deliberates, acts freely, and, in one word, that lives: whereas body has no other qualities but that of being extended, susceptible of motion, and impenetrable; from whence results this universal quality, that every body remains in the same state, as long as there is no necessity of mutual penetration, or of their undergoing some change; and in case of the necessity of their penetrating each other, if they continued to remain in their state, their impenetrability itself supplies the powers requisite to change their state,

state, as far as it is necessary to prevent all penetration.

In this consist all the changes which take place in bodies: all is passive, and necessarily befalls them in conformity to the laws of motion. There is, in body, neither intelligence, nor will, nor liberty: these are the supereminent qualities of spirits, while bodies are not even susceptible of them.

It is spirit, likewise, which produces, in the corporeal world, the principal events, the illustrious actions, of intelligent beings, which are all the effect of the influence which the souls of men exercise upon their bodies. This power, which every soul has over its body, cannot but be considered as a gift of God, who has established this wonderful union between soul and body. And as I find my soul in such an union with a certain particle of my body, concealed in the brain, it may be said, that the seat of my soul is in that spot, though, properly speaking, my soul resides no where, and is referable to that place of my body, only in virtue of its action, and of its power.

It is also the influence of the soul upon the body which constitutes its life, which continues as long as this union subsists, or as the organization of the body remains entire. Death, then, is nothing else but the dissolution of this union, and the soul has no need to be transported elsewhere; for, as it resides in no place, all places must be indifferent to it; and, consequently, if it should please God, after my death, to establish a new union between my soul, and



an organized body in the moon, I should instantly be in the moon, without the trouble of a long journey. And if, even now, God were to grant to my soul, a power over an organized body in the moon, I should be equally here, and in the moon; and this involves no manner of contradiction. It is body only which cannot be in two places at once; but there is nothing to prevent spirit, which has no relation to place, in virtue of it's nature, to act at the same time, on several bodies, situated in places very remote from each other; and, in this respect, it might be said, with truth, that it was in all these places at once.

This supplies us with a clear elucidation of the omnipresence of God: it is, that his power extends to the whole universe, and to all the bodies which it contains. It appears to me, of consequence, an improper expression, to say, that God exists every where, as the existence of a spirit has no relation to place. It is more consonant with propriety to say, God is every where present.

Let us now compare this idea with that of the Wolfians, who, representing Deity under the idea of a point, attach him to one fixed place, as, in fact, a point cannot be in several places at once; and how is it possible to reconcile the divine omnipotence, with the idea of a point?

Death being a dissolution of the union subsisting between the soul and body during life, we are enabled to form some idea of the state of the soul after death. As the soul, during life, derives all it's know-
ledge

ledge through the medium of the senses, being deprived, by death, of the information communicated through the senses, it no longer knows what is passing in the material world; this state might, in some respects, be compared to that of a man who should, all at once, become blind, deaf, dumb, and deprived of the use of all the other senses. Such a man would retain the knowledge which he had acquired, through the medium of sense, and might continue to reflect on ideas previously formed; his own actions, especially, might supply an ample store, and, finally, the faculty of reasoning might remain entire, as the body, in no respect whatever contributes to it's exercise.

Sleep, likewise, furnishes us with something like an example of this state, as the union between soul and body is then, in a great measure, interrupted; though the soul, even in sleep, ceases not from exerting it's activity, being employed in the production of what we call dreams. These dreams are usually very much disturbed, by the remains of the influence which the senses still exercise over the soul; and we know, by experience, that the more this influence is suspended, which is the case in very profound sleep, the more regular and connected, likewise, our dreams are. Thus, after death, we shall find ourselves in a more perfect state of dreaming, which nothing shall be able to discompose: it shall consist of representations, and reasonings, perfectly well kept up. And this, in my opinion, is nearly all we can say of it, at least, with any appearance of reason.



LETTER XCIV.

*Considerations on the Action of the Soul upon the Body,
and of the Body upon the Soul.*

AS the soul is the principal part of our being, it is of high importance, thoroughly to investigate it's operations. You will please to recollect, that the union between the soul and the body, contains a two-fold influence: by the one, the soul perceives and feels all that passes in a certain part of the brain; and by the other, it has the power of acting on that same portion of the brain, and of producing certain motions in it.

Anatomists have taken infinite pains to discover this part of the brain, which is justly called the seat of the soul; not that the soul actually resides there, for it is not confined to any place, but because the power of acting is attached to that spot. It may be said, that the soul is present there, but not that it exists there, or that it's existence is limited to it. This part of the brain is, undoubtedly, that in which all the nerves terminate; now, anatomists tell us, that this termination is in a certain portion of the brain, which they term the *callous body*. This, therefore, we may consider as the seat of the soul, and the Creator has bestowed, upon every soul, such a power over this callous membrane * of his body, that it not

* Since anatomists have given us a more exact and particular description of the brain, we have been obliged to relinquish this opinion:

only perceives all that passes there, but is, likewise, able to produce a reciprocal impression. Here, then, we observe a two-fold action: the one, by which the body acts upon the soul, and the other, by which the soul acts upon the body, but these actions are infinitely different from those which bodies exercise upon other bodies.

The soul, from it's union with the *corpus callosum*, finds itself intimately connected with the whole body, by means of the nerves, which are thence universally diffused. Now, the nerves are fibres so wonderfully constructed, and, to all appearance, filled with a fluid so subtle, that the slightest change which they undergo, at one extremity, is instantly communicated to the other extremity in the brain, where the seat of the soul is. And, reciprocally, the slightest impression made by the soul, on the extremities of the nerves, in the *corpus callosum*, is immediately transmitted through the whole extent of every nerve; and it is thus, that the muscles and members of our bodies are put in motion, and obey the commands of the soul.

This wonderful structure of the body, places it in a very close connection with all exterior objects, whether near or remote, which may act upon it, either by immediate contact, as in feeling and tasting; or by their exhalations, as in smelling. Bodies, at a

opinion: but their labours may, perhaps, one day inform us, what we are to understand by the origin of the nerves, and even, to a certain point, in what manner they transmit to the brain the impressions which they receive.—F. E.

great



great distance, act on the sense of hearing, when they make a noise, and exert in the air vibrations which strike our ears; they act, likewise, upon the sight, when they are illumined, and transmit into our eyes the rays of light, which consist, in like manner, in a certain vibration, caused in that medium, much more subtle than the air, which we call *Ether*. It is thus that bodies, both near and remote, may act upon the nerves of our body, and produce certain impressions in the *corpus callosum*, from which the soul derives its perceptions.

From every thing, therefore, which makes an impression on our nerves, there results a certain change in the brain, of which the soul has a perception, and, thereby, acquires the idea of the object which caused it. We have here, then, two things to be examined: the one is corporeal, or *material*, which is the impression, or the change produced in the *corpus callosum* of the brain; the other *spiritual*, namely, the perception, or the information, which the soul derives from it. It is, if I may so express myself, from the contemplation of what passes in the *corpus callosum*, that all our knowledge is derived.

You must permit me to enter into a more particular detail, on this important article. Let us, first, consider one single sense, say, that of smelling, which being the least complicated, seems the most proper to assist us in our researches. Suppose all the other senses annihilated, and that a rose was applied to the nose; its exhalations would, at once, excite a certain agitation in the nerves of the nose, which, thence

thence transmitted to the *corpus callosum*, will occasion there, likewise, some change, and in this consists the *material* circumstance, which is the subject of our investigation. This slight change, produced in the *corpus callosum*, is then perceived by the soul, and it thence acquires the idea of the smell of a rose: and this is the *spiritual* operation which takes place; but we cannot explain in what manner this is done, as it depends on the incomprehensible union which the Creator has established between the body and the soul.

It is certain, however, that upon this change, in the *corpus callosum*, there is excited in the soul the idea of the smell of a rose, or the contemplation of this change furnishes to the soul a certain idea, that of the smell of a rose, but nothing more: for, as the other senses are suspended, the soul can form no judgment of the nature of the object itself, which suggested this idea; the idea of the smell of a rose alone, was excited in the soul. Hence, we comprehend, that the soul does not form this idea of itself, for it would have remained unknown, but for the presence of a rose. But farther, the soul is not indifferent with respect to it; the perception of this idea is agreeable; the soul itself is, some how, interested in it. Accordingly, we say, that the soul feels the odour of the rose, and this perception we call *sensation*.

It is the same with all the other senses; every object, by which they are struck, excites in the *corpus callosum* a certain change, which the soul observes with a sensation, agreeable or disagreeable, and from which



which it derives the idea of the object which caused it. This idea is accompanied with a sensation, so much the stronger, and more intense, as the impression made on the *corpus callosum* is more lively. It is thus, that the soul, by contemplating the changes produced in the *corpus callosum* of the brain, acquires ideas, and is affected by them; and this is what we understand by the term *sensation*.

17th Jan. 1761.

LETTER XCV.

Of the Faculties of the Soul, and of Judgment.

HAD we no other sense but that of smelling, our knowledge would be very limited; we should, then, have no other sensation than that of odours, the diversity of which, were it ever so great, could not very much interest our soul; being restricted to this, that agreeable smells would procure some degree of pleasure, and such as are disagreeable, would excite some disgust.

But this very circumstance carries us forward to a most important inquiry: Whence is it, that one smell is agreeable, and another disgusting? It cannot be a matter of doubt, that agreeable smells excite, in the *corpus callosum*, a different agitation from that which is produced by the disagreeable; but how comes it, that one agitation, in the *corpus callosum*, can give pleasure to the soul, while another is offensive, and even,

even, frequently, becomes insupportable? The cause of this difference resides no longer in body, and matter; we must look for it, in the nature of the soul itself, which enjoys a certain pleasure in feeling certain agitations, while others excite uneasiness: and the real cause of this effect we do not know.

Hence we comprehend, that the soul does more than simply perceive what passes in the brain, or *corpus callosum*; it subjoins to sensation, a judgment respecting what it finds agreeable, or disgusting, and, consequently, exercises, beside the faculty of perceiving, another, and a different faculty, that of judging: and this judgment is wholly different from the simple idea of a smell.

The same consideration, of the sense of smelling only, discovers to us still other acts of the soul. When the smells are changed, when you apply to the nose a carnation after a rose, the soul has not only a perception of both smells, but, likewise, remarks a difference between them. Hence we conclude, that the soul still retains the preceding idea, to compare it with that which follows; in this consists *reminiscence*, or memory, by which we have the power of recalling ideas, antecedent and past. Now, the real source of memory is entirely concealed from us. We know well, that the body has much to do in it; for experience assures us, that disease, and various accidents, which befall the body, weaken, and frequently destroy, the memory: it is equally certain, at the same time, that the recollection of ideas is the proper work of the soul. A recollected idea is essentially

6

different



different from an idea excited by an object. I have a perfect recollection of the sun, which I saw to day, but this idea greatly differs from that which I had while I was looking at the sun.

Some authors pretend, that when we recall an idea, there happens in the brain an agitation similar to that which first produced it; but if this were the case, I should actually see the sun; it would no longer be a recollected idea. They admit, indeed, that the agitation which accompanies the recalled idea, is much weaker than that from which the original idea proceeded; but still I am not satisfied with this, for it would thence follow, that when I recal the idea of the sun, it would be much the same as when I see the moon, the light of which, you will please to remember, is about 200,000 times weaker than that of the sun. But actually to look at the moon, and simply to recollect the sun, are two things absolutely different.

We may say with truth, that the recollected ideas are the same with the actual ideas; but this identity respects only the soul; with regard to the body, the actual idea is accompanied with a certain agitation in the brain, whereas the recollected one is destitute of it. Accordingly, we say, that the idea which I feel, or which an object acting on my senses excites in my soul, is a sensation; but it can with no propriety be said, that a recollected idea is a sensation. To recollect, and to feel, always remain two things, absolutely different.

When, therefore, the soul compares two different smells,

smells, when it has the idea of the one from the presence of an object acting on the sense of smelling, and that of the other from recollection, it has, in fact, two ideas at once, the actual idea, and the recollected idea: and in pronouncing, whether of the two is more or less agreeable, or disagreeable, it exerts a particular faculty, distinct from that by which it only contemplates what is presented to it.

But the soul performs still other operations; when a succession of several different smells is presented to it; for while it is struck with each of these, in its turn, the preceding are recollected, and a notion is thereby acquired of past and present, and even of future, when new sensations are proposed, similar to those of which it has already had experience. It thence, likewise, derives the idea of succession, in as much as it undergoes several impressions successively, and hence results the idea of *duration*, and of *time*. Finally, on remarking the diversity of sensations, which succeed each other; it begins to reckon *one, two, three, &c.* though this should not go farther, from want of signs, or names, wherewith to mark numbers. For, supposing a man has just begun to exist, and who has hitherto experienced no sensations, but those of which I have been speaking; far from having created a language for himself, he only knows how to exert his first faculties, on the simple ideas which the sense of smelling presents to him.

You see, then, that the man in question, has already acquired the capacity of forming to himself ideas of diversity, of the present, of the past, and even



even of the future; afterwards, of succession, of the duration of time, and of number, or at least of the elements of these ideas. Some authors pretend, that such a man could not acquire the idea of the duration of time, without a succession of different sensations; but it appears to me, that the same sensation, the smell of the rose, for example, being continued for a considerable time together, he would be differently affected by it, than he would, if it were presently withdrawn. A very long duration, of the same sensation, would, at length, become tiresome, which would, necessarily, excite in him the idea of duration. It must certainly be allowed, that his soul would be sensible of a very different effect, if the sensation were continued long, than if it lasted only for a moment: and the soul will clearly perceive this difference; it will, accordingly, have some idea of duration, and of time, without any variation of the sensations.

These reflections which the soul makes, occasioned by its sensations, are what properly belong to its *spirituality*, the body furnishing only simple sensations. The perception of these sensations is, already, an act of the soul's spirituality; for a body can never acquire ideas.

20th January, 1761.

LETTER

LETTER XCVI.

Conviction of the Existence of what we perceive by the Senses. Of the Idealists, Egotists, and Materialists.

IN all the sensations which we experience, when one of our senses is struck by any object, it is a matter of high importance to remark, that the soul not only acquires an idea, conformed to the impression made on the nerves, but that it judges, at the same time, there must exist an exterior object, which furnished this idea. Though habit makes us consider this judgment as extremely natural, yet we have reason to be astonished at it, when we examine, more attentively, what then passes in our brain.

An example will place this in a clear light. I shall suppose you looking at the full moon, by night; the rays which enter into your eyes will, at once, paint on the retina, an image similar to the moon, for the minute particles of the retina are, by the rays, put into a vibration similar to that which agitates those of the moon. Now, the retina, being only a contexture of nerves, extremely subtle, you easily comprehend, that these nerves must hence undergo a certain agitation, which will be transmitted to the origin of the nerves in the brain. There will be excited, therefore, likewise, in that portion of the brain, a certain agitation, which is the real object that the soul contemplates, and from which it derives an article of knowledge, which is the idea of the moon.

VOL. I.

B b

Conse-



Consequently, the idea of the moon is nothing else, but the contemplation of this slight agitation, affecting the origin of the nerves.

The activity of the soul is so much attached to the spot in which the nerves terminate, that it absolutely knows nothing of the images painted on the bottom of the eye, and still less of the moon, whose rays have formed these images. The soul, however, does not satisfy itself with the mere speculation of the agitation in the brain, which supplies it immediately with the idea of the moon, it subjoins to this, the judgment, that there really exists, out of us, an object, which we call the moon. This judgment is reduced to the following reasoning.

There has taken place in my brain a certain agitation, a certain impression; I do not absolutely know by what cause it has been produced, as I know nothing even of the images, which are the immediate cause of it upon the retina; nevertheless, I boldly pronounce, that there is a body out of me, the moon, which supplied me with this sensation.

What a consequence? May it not be more probable, that this agitation, or this impression, is produced, in my brain, by some internal cause, such as the motion of the blood, or, perhaps, merely by chance? What right have I, then, to conclude, that the moon actually exists? If I conclude from it, that there is, at the bottom of my eye, a certain image, this might pass; as, in fact, this image is the immediate cause of the impression made on my brain; though it was sufficiently bold to hazard even this conclusion.

conclusion. But I go much farther, and, because there is a certain agitation in my brain, I proceed to conclude, that there exists, out of my body, nay, in the heavens, a body which is the first cause of such impression, and that this body is the moon.

In sleep, when we imagine we see the moon, the soul acquires the same idea: and, perhaps, a similar agitation is then produced in the brain, as the soul imagines that it then really sees the moon. It is, undoubtedly, certain, that, in this, we deceive ourselves: but what assurance have we, that our judgment is better founded when we are awake? Philosophers have lost their way, more than once, in endeavouring to solve this difficulty.

What I have just said, respecting the moon, takes place with regard to all the bodies which we see. The consequence is not apparent, that there must exist bodies out of us, because our brain undergoes certain agitations, or impressions. This applies even to our own limbs, and to our whole body, of which we know nothing but by means of the senses, and of the impressions which they make in the brain: if, then, these impressions, and the ideas which the soul derives from them, prove nothing as to the existence of body, that of our own body becomes equally doubtful.

You will not, therefore, be surprized, that there should be philosophers, who have openly denied the existence of bodies; and, in truth, it is not easy to refute them. They derive a very strong argument from dreams, in which we imagine, that we see so



many bodies, which have no existence. It is said, with truth, that then it is pure illusion; but what assurance have we, that we are not under the power of a similar illusion when awake? According to these philosophers, it is not an illusion: the soul, they admit, perceives a certain impression, an idea, but they boldly deny it to be a consequence, that bodies really exist, which correspond to those ideas. The supporters of this system are called *Idealists*, because they admit the *ideas* only of material things, and absolutely deny their existence. They may, likewise, be denominated *Spiritualists*, as they maintain, that no beings exist, except spirits.

And as we do not know other spirits, but by means of the senses, or of ideas, there are philosophers who go so far as to deny the existence of all spirits, their own soul excepted, of the existence of which every one is completely convinced. These are called *Egotists*, because they pretend that nothing exists but their own soul.

To them are opposed the philosophers, whom we denominate *Materialists*, who deny the existence of spirits, and maintain, that every thing which exists is matter, and that what we call our soul is only matter, extremely subtle, and thereby rendered capable of thought.

24th January, 1761.

LETTER

LETTER XCVII.

Refutation of the Idealists.

I WISH it were in my power to furnish you with the arms necessary to combat the Idealists and the Egotists, by demonstrating, that there is a real connection between our sensations and the objects themselves, which they represent; but the more I think of it, the more I feel my own incapacity.

It would be ridiculous to think of engaging with the Egotists: for a man who imagines he alone exists, and who does not believe in my existence, would act in contradiction to his own system, if he paid any attention to my reasoning, which, according to him, would be that of an imaginary being. It is, likewise, a hard task to confute the Idealists, nay, it is impossible to convince, of the existence of bodies, a man obstinately determined to deny it. Though no such philosophers existed, it would be highly interesting to be able to convince ourselves, that as often as our soul experiences sensations, it may be with certainty concluded, that bodies likewise exist; and that, when my soul is affected by the sensation of the moon, I may thence boldly infer the existence of the moon.

But the union which the Creator has established between the soul and the brain, is a mystery so unfathomable, that all our knowledge of it amounts

B b 3

only



only to this: Certain impressions made in the brain, where the seat of the soul is, excite in it certain ideas, or sensations; but the *how*, of this influence, is absolutely unknown to us. We ought to satisfy ourselves with knowing, that this influence subsists, which experience sufficiently confirms; and it is in vain to investigate *how* this is produced. Now, the same experience which proves it, informs us, likewise, that every sensation always disposes the soul to believe that there exists, out of it, some object which excited such sensation; and that sensation discovers to us several properties of the object.

It is, then, a most undoubted fact, that the soul always concludes, from any sensation whatever, the existence of a real object, out of us. This is so natural to us, from our earliest infancy, and so universally the case with all men, and even with animals, that it cannot, with any propriety, be called a prejudice. The dog that barks when he sees me, is certainly convinced that I exist; for my presence excites in him the idea of my person. The dog, then, is not an idealist. Even the meanest insects are assured that bodies exist, out of them, and they could not have this conviction, but by the sensations excited in their souls.

I believe, therefore, that sensations include much more than those philosophers are disposed to admit. They are not only simple perceptions of certain impressions made in the brain; they supply the soul not with ideas only, but they effectively represent

to

to it objects externally existing, though we cannot comprehend how this is done.

In fact, what resemblance can there be between the luminous idea of the moon, and the slight impression which its rays may produce in the brain, by means of nerves?

The idea, even in as far as the soul perceives it, has nothing material; it is an act of the soul, which is a spirit: it is not necessary, therefore, to look for a real relation between the impressions of the brain, and the ideas of the soul; it is enough for us to know, that certain impressions made in the brain, excite certain ideas in the soul, and that these ideas are representations of objects externally existing, of whose existence they give us the assurance.

Thus, when my brain excites in my soul the sensation of a tree, or of a house, I pronounce, without hesitation, that a tree, or a house, really exists, out of me, of which I know the place, the size, and other properties. Accordingly, we find neither man nor beast, who calls this truth in question. If a clown should take it into his head to conceive such a doubt; and should say, for example, he does not believe that his bailiff exists, though he stands in his presence, he would be taken for a madman, and with good reason; but when a philosopher advances such sentiments, he expects we should admire his knowledge and sagacity, which infinitely surpasses the apprehensions of the vulgar.

It appears to me, accordingly, abundantly certain,

B b 4

that



that such extravagant sentiments would never have been maintained, but from pride, and an affectation of singularity: and you will readily agree, that the common people have, in this respect, much more good sense than those learned gentlemen, who derive no other advantage from their researches, but that of bewildering themselves in a labyrinth of chimeras, unintelligible to the rest of mankind.*

Let it be established, then, as a certain rule, that every sensation not only excites in the soul an idea, but shews it, if I may so express myself, an external object, of whose existence it gives full assurance, without practising a deception. A very formidable objection, however, is started against this, arising from dreams, and the reveries of sick persons, in which the soul experiences a great variety of sensations of objects which no where exist. The only reflection I shall suggest on this subject is, that it must be very natural for us to judge that the objects, the sensations of which the soul experiences, really exist, as we judge after this manner even in sleep, though then we deceive ourselves; but it does not thence follow, that we likewise deceive ourselves when we are awake. In order to solve this objection, it is

* Mr. Euler seems here to be confounding two different questions, that of the existence of exterior objects, and that of a kind of real resemblance between these objects and the idea which we have of them. Barclay has, however, carefully distinguished them, and has clearly pointed out the difference. All we can at present do, is to refer the reader to the article *Existence*, in the *Encyclopedia*, the only work in which these questions have been treated with an exact analysis.—P. E.

necessary

necessary to know better the difference of the state of the man who is asleep, and of him who wakes; and none, perhaps, know this less than the learned, which must surely be a matter of some surprize to you.

27th January, 1761.

LETTER XCVIII.

The Faculty of Perceiving. Reminiscence, Memory, and Attention. Simple and compound Ideas.

YOU are by this time sensible, that objects, by acting upon our senses, excite in the soul sensations, from which we judge that they really exist, out of us. Though the impressions which occasion these sensations are made in the brain, they present, then, to the soul, a species of image similar to the object which the soul perceives, and which is called the *sensible idea*, because it is excited by the senses. Thus, on seeing a dog, the soul acquires the idea of it, and it is by means of the senses that the soul comes to the knowledge of external objects, and acquires sensible ideas of them, which are the foundation of all our attainments in knowledge.

This faculty of the soul, by which it acquires the knowledge of external things, is denominated the *faculty of perception*, and depends, no doubt, on the wonderful union which the Creator has established between the soul and the brain. Now, the soul has

still



still another faculty, that of recalling ideas already communicated by the senses; and this faculty is named *remembrance*, or *imagination*. Thus, having once seen an elephant, you will be able to recollect the idea of that animal, though it is no longer before you. There is, however, a mighty difference between actual and recollected ideas: the former make an impression much more lively and interesting than the latter, but the faculty of recalling ideas is the principal source of all our knowledge.

Did we lose the ideas of objects as soon as they cease to act upon our senses, we should never be able to make any reflection, any comparison; and our knowledge would be entirely confined to the things which we should feel at the moment, all preceding ideas being extinguished, as if we had never possessed them.

It is, therefore, a faculty essential to reasonable beings, and with which animals too are endowed, that of being able to recollect past ideas. You know the faculty of which I speak is *memory*. It by no means follows, however, that we have it always in our power to recall all our past ideas. How frequently do we exert ourselves in vain to recollect certain ideas which we formerly had? Sometimes we forget them entirely; but for the most part only partially.

If you should happen, for example, to forget the demonstration of the Pythagorean theorem; with all your efforts, perhaps, you should not be able to recollect it, but this would be only a partial forgetfulness;

fulness; for as soon as I had again drawn the figure, and put you into the train of the demonstration, you will presently recollect it, and this second demonstration will make on your mind quite a different impression from the first. We see, then, that the remembrance of ideas is not always in our power, though they may not be wholly extinguished; and a slight circumstance is frequently capable of reproducing them.

We must, therefore, carefully distinguish between sensible and recollected ideas. Sensible ideas are represented to us by the senses; but we ourselves form recollected ideas, on the model of the sensible, as far as we remember them.

The doctrine of ideas is of the last importance for the purpose of a thorough disquisition of the real sources of human knowledge. And first, ideas are distinguished into *simple* and *complex*. A simple idea is that in which the soul finds nothing to distinguish, and remarks no parts different from each other. Such is, for example, the idea of a smell, or of a spot on a substance of one colour; such is, likewise, that of a star, in which we perceive only one luminous point. A complex idea is a representation in which the soul is able to distinguish several different things. When, for instance, we look attentively at the moon, we discover several dark spots, surrounded by contours more luminous; we remark, also, her round figure, when she is full, and her horned figure, when waxing or waning. On viewing her through the
telescope,



telescope, there are many other particulars distinguishable.

How many different things do we not perceive in beholding a noble palace, or a fine garden? When you do me the honour to read this letter, you will discover in it the different traits of the characters, which you can with ease distinguish from each other. This, then, is a complex idea, as it contains a variety of simple ideas. Not only this letter, taken in whole, presents a complex idea, from it's consisting of a plurality of words; but every word, too, is a complex idea, being composed of several characters; nay, every character is one, from the singularity of the form which distinguishes it from others: but the elements or points which constitute every character, may be considered as simple ideas, in as much as you no longer perceive in them any diversity. A greater degree of attention will likewise discover some variety in these elements, on viewing them through a microscope.

There is a great difference, therefore, even in the manner of contemplating objects. When we observe them only slightly and transiently, we perceive very little variety; but, to an attentive consideration, every particular detail stands disclosed. A savage, on throwing his eyes over this letter, will take it for a piece of paper scribbled all over, and will distinguish only the black from the white, whereas an attentive reader observes in it the peculiar form of every character. Here, then, we have a new faculty of the soul,

soul, denominated *attention*, by which it acquires the simple ideas of the different things that meet in one object.

Attention requires address, the result of long and frequent exercise, to render it capable of distinguishing the different parts of an object. A clown and an architect, passing by a palace, will both receive the impression of the rays which enter into their eyes; but the architect will discover a thousand minute particulars, of which the clown has no perception. Attention alone produces this difference.

31st January, 1761.

L E T T E R XCIX.

Division of Ideas into clear and obscure, distinct and confused. Of Distraction.

IF we consider, in a slight manner only, a representation made to us by the senses, the idea which we acquire from it is very imperfect, and we say it is *obscure*: but the more attention that we employ to distinguish all it's parts, the more *perfect* or *distinct* our idea will become. In order to acquire a perfect or distinct idea of an object, it is not then sufficient that it should be represented in the brain, by impressions made upon the senses, the soul, too, must apply it's attention, which is properly an act of the soul, independent upon the body.

It is farther necessary that the representation in



the brain should be well expressed, and contain the different parts and qualities which characterize the object. This takes place when the object is presented to the senses in a suitable manner. When, for example, I see a piece of writing, at the distance of ten feet, I am unable to read it, let me employ whatever degree of attention I may; the distance of the characters prevents their being accurately expressed on the bottom of the eye, and consequently also in the brain: but if the same writing is brought to a proper distance, I can read it, because then all the characters are distinctly represented on the bottom of the eye.

You know that we employ certain instruments in order to procure a more perfect representation in the organs of sense; such as microscopes and telescopes; which are intended as supplements to the imperfection of vision. But, in employing their assistance, we are incapable of attaining a distinct idea, without attention; otherwise we acquire but an obscure idea, nearly such as we should have had by taking a glimpse of the object only.

I have already remarked, that sensations are by no means indifferent to the soul, but agreeable or disagreeable: and this agreeableness, or its opposite, excites our attention, unless the soul is pre-occupied by several other sensations which entirely engross it: this last state of the soul is termed *distraction*.

Exercise, likewise, greatly contributes to strengthen attention: and there cannot be a mode of exercise more suitable to children than teaching them to read; for, they are thereby laid under the necessity
of

of fixing their attention successively on every character, and of impressing on their minds a clear idea of the figure of each. It is easy to see that this exercise must be at first extremely painful; but such a habit is speedily acquired, that even a child, after a little application, can read with astonishing quickness. In reading a piece of writing, we must have a very distinct idea of every character; thus attention is susceptible of a very high degree of perfection from exercise.

With what amazing rapidity will a proficient in music execute the most difficult piece, though he never saw it before. It is certain that his attention must have run over all the notes, one after another, and that he remarked the signification of each. His attention, however, is not confined only to these notes; it presides, likewise, over the motion of the fingers, not one of which moves but by an express order of the soul; he remarks, likewise, at the same time, how the other performers execute their parts. It is, upon the whole, altogether surprising to what a height the address of the human mind may be carried by application and exercise. Shew the same piece of music to a beginner; how much time does it require to impress on his mind the signification of every note, and to give him a complete idea of it: while the master acquires it by almost a single glance.

This ability extends equally to all other kinds of objects, in which one man may infinitely surpass another. There are persons who, with one glance fixed on a person passing before them, acquire a distinct idea, not only of all the features of the face,
but



but the particulars of his whole dress, down to the minutest trifles, while others are incapable of remarking the most striking circumstances.

We observe, in this respect, an infinite difference among men. Some promptly catch all the different marks of an object, and form to themselves a distinct idea of it, while that formed by others is extremely obscure. This difference depends, not only on mental penetration, but likewise on the nature of the objects. A musician catches at once the whole piece of music, and acquires a distinct idea of it: but present him with a piece of writing in Chinese characters, and he will have only very obscure ideas indeed of such writing: the Chinese, on the contrary, will know, at first sight, the real import of each character, but will, in his turn, understand nothing of musical notes. The botanist observes in a plant which he never saw before, a thousand particulars which escape the attention of another; and the architect discerns, by a single glance, in a building, many things which another, with a much greater degree of attention, could not have discovered.

It is always useful to form distinct ideas of the objects presented to our senses; in other words to remark all the parts of which they are composed, and the marks which distinguish and characterize them. From these observations you will easily comprehend the division of ideas into obscure and clear, into confused and distinct. The more distinct they are, the more they contribute to the advancement of knowledge.

3d February, 1761.

LETTER C.

Of the Abstraction of Notions. Notions general and individual. Of Genus and Species.

THE senses represent objects only which exist externally; and sensible ideas all refer to them; but of these sensible ideas the soul forms to itself a variety of other ideas, which are indeed derived from these, but which no longer represent objects really existing.

When, for example, I look at the full moon, and fix my attention only on its contour, I form the idea of roundness; but I cannot affirm, that roundness exists of itself. The moon is round, but the round figure does not exist separately out of the moon. It is the same with respect to all other figures; and when I see a triangular, or square table, I may have the idea of a triangle, or of a square, though such a figure exists nowhere of itself, or separately from an object possessing that figure.

The ideas of numbers have the same origin. Having seen two or three persons, the soul forms the idea of two or three, without attaching it any longer to the persons. Having already acquired the idea of *three*, the soul is able to proceed, and to form the ideas of greater numbers, of four, five, ten, a hundred, a thousand, and so on, without ever having precisely seen so many things together. A single instance, therefore, in which we have seen two or three

VOL. I.

C c

objects,



objects, may carry the soul forward to the formation of the ideas of other numbers, be they ever so great.

The same thing holds as to figures; and you have the power of forming to yourself the idea of a polygon, with 1761 sides, for example, though you never have seen an object of that form, and though no one such, perhaps, ever existed.

Here the soul exerts a new faculty, which is called the power of *abstraction*; this takes place when the soul fixes its attention on only one quantity or quality of the object, and considers it separately, as if it were no longer attached to the object. When, for instance, I put my hand on a heated stone, and confine my attention to the heat only, I form from it the idea of heat, which is no longer attached to the stone. This idea of heat is formed by abstraction, as it is separated from the stone, and the soul might have derived the same idea from touching a piece of wood heated, or by plunging the hand into hot water.

Thus, by means of abstraction, the soul forms a thousand other ideas of the quantities and properties of objects, by separating them afterwards from the objects themselves: as, when I see a red coat, and fix my attention only on the colour, I form the idea of red, separate from the coat, and it is obvious that a red flower, or any other substance of that colour, would have enabled me to form the same idea.

These ideas, acquired by abstraction, are denominated *notions*, to distinguish them from sensible ideas, which represent to us objects really existing.

It

It is alleged that the power of abstraction is a prerogative of men, and of other rational beings, and that the beasts are entirely destitute of it. A beast may experience the same sensation of hot water that we do, but is unable to separate the idea of heat and that of the water itself: it knows heat only in so far as it is connected with the water, but has not the abstract idea of heat which we have. It is said, that these notions are general ideas, which extend to several things at once, as we may find heat in stone, wood, water, or any other body; but our idea of heat is not attached to any one body; for if my idea of heat were attached to a certain stone, which first supplied me with that idea, I could not affirm that wood or other bodies were hot. Hence it is evident, that these notions, or general ideas, are not attached to certain objects, as sensible ideas are; and as they distinguish man from the brute creation, they properly exalt him to a degree of rationality wholly unattainable by the beasts.

There is still farther a species of notions, likewise, formed by abstraction, which supply the soul with the most important subjects on which to employ its powers: these are the ideas of *genus* and *species*. When I see a pear-tree, a cherry-tree, an apple-tree, an oak, a fir, &c. all these ideas are different; I, nevertheless, remark in them several things which they have in common; as the trunk, the branches, and the roots; I stop short only at those things which the different ideas have in common, and the object,

C c 2

in



in which all such qualities meet, I call a *tree*. Thus the idea of tree, which I have formed in this manner, is a *general notion*, and comprehends the sensible ideas of the pear-tree, the apple-tree, and, in general, of every tree that exists.

Now, *the tree* which corresponds to my idea of tree, no where exists; it is not the pear-tree, for then the apple would not be comprehended under it; for the same reason, it is not the cherry-tree, nor the plumb, nor the oak, &c.; in a word, it exists only in my soul; it is only an idea, but which is realized in an infinite number of objects. In like manner, when I speak of a *cherry-tree*, it too is a general notion, which comprehends all the cherry-trees that exist: this notion is not restricted to a particular cherry-tree in my garden: for then every other cherry-tree would be excluded.

With respect to general notions, every existing object, comprehended under one, is denominated an *individual*, and the general idea, say that of the cherry-tree, is denominated *species* or *genus*. These two words signify nearly the same thing, but genus is the more comprehensive, including in it a variety of species. Thus the notion of a tree may be considered as a genus, as it includes the notions of pear-trees, apple-trees, oaks, firs, and so on, which are species; and of so many others, each of which contains a great number of existing individuals.

This manner of forming general ideas is, therefore, likewise, performed by abstraction, and it is here, chiefly,

chiefly, that the soul exerts the activity and performs the operations from which all our knowledge is derived. Without these general notions, we should differ nothing from the brutes.

7th February, 1761.

LETTER CI.

Of Language; its Nature, Advantages, and Necessity, in order to the Communication of Thought, and the Cultivation of Knowledge.

WHATEVER aptitude a man may have to exercise the power of abstraction, and to furnish himself with general ideas, he can make no considerable progress without the aid of language, spoken or written. Both the one and the other contains a variety of words, which are only certain signs, corresponding to our ideas, and whose signification is settled by custom, or the tacit consent of several men who live together.

It would appear, from this, that the only purpose of language to mankind is mutually to communicate their sentiments, and that a solitary man might do very well without it; but a little reflection only is necessary to be convinced, that men stand in need of language, as much to pursue and cultivate their own thoughts, as to keep up a communication with others.

To prove this, I remark, first, that we have scarcely



a word in any language whose signification is attached to one individual object. If each cherry-tree in a whole country had it's proper name, as well as every pear-tree, and, in general, every individual tree; what an enormous complication, in language, would result from it? Were I under the necessity of employing a particular term to denote every sheet of paper in my bureau, or if I should, from caprice, think fit to give each a particular name, this would be as useless to myself as to others.

It is, then, a very imperfect description of language to say, that men have, from the first, imposed on all individual objects, certain names to serve them for signs. The words of a language express general notions, and you will rarely find one which marks only a single individual. The name, *Alexander the Great*, is applicable to one particular person; but then it is a compound name. There may have been many thousands of Alexanders, and the epithet *great*, extends to an infinite number of things. It is thus, that all men bear names, to distinguish them from others, though these names may be frequently common to many.

The essence of a language consists, rather, in it's containing words to denote general notions; as that of tree corresponds to a prodigious number of individual beings. These words serve not only to convey to others, who understand the same language, the same idea which I affix to the words; but they are, likewise, a great assistance to me, in representing this idea to myself. Without the word *tree*, which represents

represents to me the general notion of a tree, I must imagine to myself at once a cherry-tree, a pear-tree, an apple-tree, a fir, &c. and thence extract what they have in common. This would necessarily oppress the mind, and speedily involve it in the greatest perplexity. But having, once for all, determined to express, by the term *tree*, the general notion formed by abstraction, this term always excites in my soul the same notion, without my having occasion to recollect it's origin; and, accordingly, the word *tree* alone, for the most part, constitutes the object of the soul, without the representation of any real tree.

The word *man* is, in like manner, a sign to denote the general notion of what all men have in common, and it would be very difficult to tell or to make the enumeration of all that this notion contains. Would you say that he is a living two-legged being? A cock would likewise be included in this description. Would you say, in the words of Plato's definition, that he is a two-legged animal without feathers? You have only to strip the cock of his feathers, in order to obtain the Platonic man.

I do not know whether those who say that man is an animal endowed with reason, express themselves more accurately: for how often do we take for men certain beings of whose rationality we have no assurance. On viewing an army, I have not the least doubt that every soldier is a man, though I have not the smallest proof that they are all endowed with reason. If I were to make an enumeration of all the members necessary to constitute a man, some men



would always be found defective in one, perhaps in several of these, or we might find some beast who had them all. On investigating, therefore, the origin of the general notion of man, it is almost impossible to say wherein it consists.

No one, however, has any doubt respecting the signification of the word; because every one, wishing to excite this notion in his soul, has only to think on the word *man*, as if he saw it written on paper, or heard it pronounced, according as the respective language of any one may be.

Hence we see that, for the most part, the objects of our thoughts are not to much the things themselves, as the words by which these things are denoted in language; which greatly facilitates the exercise of thought. What idea, in fact, do we associate with the terms *virtue*, *liberty*, *goodness*, &c.? Not surely a sensible image; but the soul having once formed the abstract notions which correspond to these terms, afterwards substitutes them, in its thoughts, in place of the things which they denote.

You may easily conceive how many abstractions it was necessary to make, in order to arrive at the notion of *virtue*. The actions of men were first to be considered; they were, then, to be compared with the duties imposed on them; in consequence of this, we give the name of *virtue* to the disposition which a man has to regulate his actions conformably to his duties. But, on hearing the word *virtue* rapidly pronounced in conversation, do we always connect with it this complex notion? And what idea is excited

cited in the mind, on hearing the particle *and* or *also* pronounced? It is readily seen, that these words import a species of connection, but take what pains you please to describe this connection, you will find yourself under the necessity of employing other words, whose signification it would be equally difficult to explain; and if I were to attempt an explanation of the import of the particle *and*, I must make frequent use of that very particle.

You are now enabled to judge of what advantage language is to direct our thoughts; and that, without language, we should hardly be in a condition to think at all.

10th February, 1760.

LETTER CII.

Of the Perfections of a Language. Judgments and Nature of Propositions, affirmative and negative; universal, or particular.

I HAVE been endeavouring to shew you, how necessary language is to man, not only for the mutual communication of sentiment and thought, but, likewise, for the improvement of the mind, and the extension of knowledge.

These signs, or words, represent, then, general notions, each of which is applicable to an infinite number of objects: as, for instance, the idea of hot, and of heat, to every individual object which is hot; and the



the idea, or general notion of *tree*, is applicable to every individual tree in a garden, or a forest, whether cherries, pears, oaks, or firs, &c.

Hence you must be sensible how one language may be more perfect than another. A language always is so, in proportion as it is in a condition to express a greater number of general notions, formed by abstraction. It is with respect to these notions that we must estimate the perfection of a language.

Formerly there was no word in the Russian language to express what we call *justice*. This was certainly a very great defect; as the idea of justice is of very great importance in a great number of our judgments and reasonings, and as it is scarcely possible to think of the thing itself without a term expressive of it. They have, accordingly, supplied this defect, by introducing into that language a word which conveys the notion of justice.

These general notions, formed by abstraction, are the source of all our judgments and of all our reasonings. A judgment is nothing else but the affirmation, or negation, that a notion is applicable, or inapplicable; and when such judgment is expressed in words, we call it a *proposition*. To give an example: *All men are mortal*, is a proposition which contains two notions; the first, that of men in general; and the second, that of mortality, which comprehends whatever is mortal. The judgment consists in pronouncing and affirming, *that the notion of mortality is applicable to all men*. This is a judgment, and, being expressed in words, it is a proposition; and, because

it

it affirms, we call it an *affirmative proposition*. If it denied, we would call it *negative*, such as this, *no man is righteous*. These two *propositions*, which I have introduced as examples, are *universal*, because the one affirms of *all men*, that they are mortal, and the other denies that they are righteous.

There are likewise *particular propositions*, both negative and affirmative; as, *some men are learned*, and *some men are not wise*. What is here affirmed, and denied, is not applicable to all men, but to *some* of them.

Hence we derive four species of propositions. The first is that of *affirmative and universal propositions*, the form of which in general is:

Every A is B.

The second species contains *negative and universal propositions*, the form of which in general is:

No A is B.

The third is, that of *affirmative propositions*, but *particular*, contained in this form:

Some A is B.

And, finally, the fourth is that of *negative and particular propositions*, of which the form is:

Some A is not B.

All these propositions contain, essentially, two notions, A and B, which are called the *terms of the proposition*: the first of which affirms or denies some thing; and this we call the *subject*; and the second, which we say is applicable, or inapplicable, to the first, is the *attribute*. Thus, in the proposition, *All men are mortal*, the word *man*, or *men*, is the subject, and the word *mortal* the attribute: these words are much



much used in logic, which teaches the rules of just reasoning.

These four species of propositions may likewise be represented by figures, so as to exhibit their nature to the eye. This must be a great assistance toward comprehending more distinctly wherein the accuracy of a chain of reasoning consists.

As a general notion contains an infinite number of individual objects, we may consider it as a space in which they are all contained. Thus for the notion of *man* we form a space (*plate I. fig. 1.*) in which we conceive all men to be comprehended. For the notion of *mortal*, we form another, (*fig. 2.*) in which we conceive every thing mortal to be comprehended. And when I affirm, *all men are mortal*, it is the same thing with affirming, that the first figure is contained in the second.

I. Hence it follows, that the representation of an affirmative universal proposition is that in which the space A, (*fig. 3.*) which represents the *subject* of the proposition, is wholly contained in the space B, which is the *attribute*.

II. As to negative universal propositions, the two spaces A and B, of which A always denotes the *subject*, and B the *attribute*, will be represented thus, (*fig. 4.*) the one separated from the other; because we say, *no A is B*, or that nothing comprehended in the notion A, is in the notion B.

III. In affirmative particular propositions, as, *some A is B*, a part of the space A will be comprehended in the space B: (*fig. 5.*) as we see here, that some-
thing

thing comprehended in the notion A, is likewise in B.

IV. For negative particular propositions, as, *some A is not B*; a part of the space A must be out of the space B, (*fig. 6.*) This figure resembles the preceding; but we here remark, principally, that there is something in the notion A, which is not comprehended in the notion B, or which is out of it.

14th February, 1761.

LETTER CIII.

Of Syllogisms, and their different Forms, when the first Proposition is universal.

THESE circles, or rather these spaces, for it is of no importance of what figure they are of, are extremely commodious for facilitating our reflections on this subject, and for unfolding all the boasted mysteries of logic, which that art finds it so difficult to explain; whereas, by means of these signs, the whole is rendered sensible to the eye. We may employ, then, spaces formed at pleasure to represent every general notion, and mark the subject of a proposition, by a space containing A, and the attribute, by another which contains B. The nature of the proposition itself always imports either that the space of A is wholly contained in the space B, or that it is partly contained in that space; or that a part, at
least,

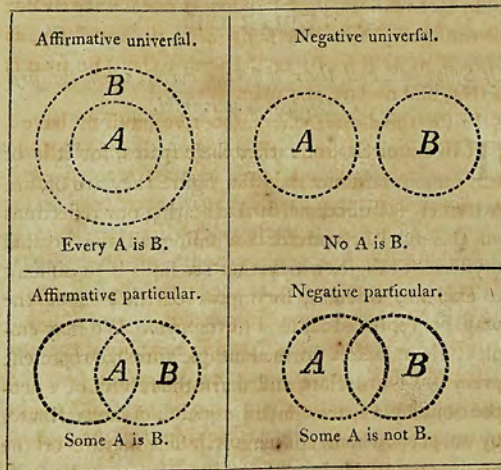


least, is out of the space B; or, finally, that the space A is wholly out of B.*

The two last cases, which represent particular propositions, seem to contain a doubt, as it is not decided, whether it be a great part of A which is contained, or not contained, in B. It is even possible,

* Mr. Euler, who is ever minutely exact in all his details, subjoins here the following diagram, with this short introduction: "I shall once more give you a visible representation of these figures "or emblems of the four species of propositions."

Emblems of the four Species of Propositions.



The omission of this scheme, in the Paris edition, is the more unaccountable, that the very next paragraph immediately refers to it, and is lame and inconclusive without it.—E. E.

in

in the case of a particular proposition, that the notion A may contain the notion B entirely, as in *plate I. fig. 7*; and that, at the same time, as is clear from the figure, a part of the space A may be in the space B, and that a part of A may not be in B. Now, if A were, for example, the idea of *tree* in general, and B that of *oak*, which is contained wholly in the first, the following propositions might be formed:

I. All oaks are trees.

II. Some trees are oaks.

III. Some trees are not oaks.

In like manner, if of two spaces one is entirely out of the other, as in *plate I. fig. 4*. I can as well say, *no A is B*, as *no B is A*; as if I were to say: *no man is a tree*, and *no tree is a man*.

In the third case, where the two notions have a part in common, as in *plate I. fig. 5*: it may be said:

I. Some A is B.

II. Some B is A.

III. Some A is not B.

IV. Some B is not A.

This may suffice to shew you how all propositions may be represented by figures: but their greatest utility is manifest in reasonings which, when expressed in words, are called *sylogisms*, and of which the object is to draw a just conclusion from certain given propositions. This method will discover to us the true forms of all *sylogisms*.

Let us begin by an affirmative universal proposition: *Every A is B*, (*plate I. fig. 3.*) where the space A is wholly in the space B, and let us see how a third

notion



notion C, must be referred to each of the other two notions A and B, in order to draw a fair conclusion. It is evident in the following cases.

I. If the notion C is entirely contained in the notion A, it will be so, likewise, in the notion B: (*plate I. fig. 8.*) hence results this form of syllogism:

Every A is B:

But Every C is A:

Therefore Every C is B.

Which is the conclusion.

Let the notion A, for example, comprehend all trees; the notion B every thing that has roots, and the notion C all oaks, and then our syllogism will run thus:

Every tree has roots:

But Every oak is a tree:

Therefore Every oak has roots.

II. If the notion C has a part contained in A, that part will likewise be so in B, because the notion A is wholly included in the notion B, (*plate I. fig. 9 and 10.*)

Hence results the second form of syllogism:

Every A is B:

But Some C is A:

Therefore Some C is B.

If the notion C were entirely out of the notion A, nothing would follow with respect to the notion B: it might happen that notion C should be entirely out of B, (*fig. 11.*) or wholly in B, (*fig. 12.*) or partly only in B, (*fig. 13.*) so that no conclusion could be drawn.

III. But

III. But if notion C were wholly out of notion B, it would likewise be wholly out of notion A, as we see in *fig. 11.* Hence results this form of syllogism:

Every A is B:

But No C is B, or no B is C:

Therefore No C is A.

IV. If the notion C has a part out of the notion B, that same part will certainly likewise be out of the notion A, because this last is wholly in the notion B, (*fig. 14.*) Hence this form of syllogism:

Every A is B:

But Some C is not B:

Therefore Some C is not A.

V. If the notion C contains the whole of notion B, part of notion C will certainly fall into notion A: (*fig. 15.*) Hence this form of syllogism.

Every A is B:

But Every B is C:

Therefore Some C is A.

No other form is possible, while the first proposition is affirmative and universal.

Let us now suppose the first proposition to be negative and universal; namely,

No A is B.

It is represented in *fig. 4.* where the notion A is entirely out of notion B; and the following cases will furnish conclusions.

I. If notion C is entirely in notion B, it must likewise be entirely out of notion A, (*fig. 16.*) Hence this form of syllogism:

VOL. I. D d No



No A is B:

But Every C is B:

Therefore No C is A.

II. If notion C is entirely comprehended in notion A, it must also be entirely excluded from notion B, (*fig. 17.*) Hence a syllogism of this form:

No A is B:

But Every C is A:

Therefore No C is B.

III. If notion C has a part contained in notion A, that part must certainly be out of notion B; as in *fig. 18.* or in *fig. 19.* and *20.* Hence a syllogism of this form:

No A is B:

But Some C is A, or some A is C:

Therefore Some C is not B.

IV. In like manner, if notion C has a part contained in B, that part will certainly be out of A: as in *fig. 21.* as also *fig. 22.* and *23.* Hence the following syllogism:

No A is B:

But Some C is B, or some B is C:

Therefore Some C is not A.

As to the other forms, in which the first proposition is particular, affirmative, or negative; I shall shew, in another letter, how they may be represented by figures.

17th February, 1761.

LETTER

LETTER CIV.

Different Forms of Syllogisms, whose first Proposition is particular.

IN the preceding letter I have presented you with the different forms of syllogisms, or simple reasonings, which derive their origin from the first proposition, when it is universal, affirmative, or negative. It still remains that I lay before you those syllogisms, whose first proposition is particular, affirmative, or negative, in order to have all possible forms of syllogism that lead to a fair conclusion.

Let, then, the first proposition, affirmative, and particular, be expressed in this general form.

Some A is B. (Plate I. fig. 5.)

in which a part of the notion A is contained in the notion B.

Let us introduce a third notion C, which, being referred to notion A, will either be contained in notion A, as in *fig. 24, 25,* and *26;* or will have a part in the notion A, as in *fig. 27, 28,* and *29;* or will be entirely out of notion A, as in *fig. 1, 2,* and *3,* of *plate II.* No conclusion can be drawn in any of these cases; as it might be possible for notion C to be entirely within notion B, or in part, or not at all.

But if notion C contains, in itself, notion A, it is certain, that it will likewise contain a part of notion B: as in *fig. 4* and *5,* of *plate II.* Hence results this form of syllogism:

D d 2

Some



Some A is B: But Every A is C:
Therefore Some C is B.

It is the same when we compare notion C with notion B: we can draw no conclusion unless notion C contains notion B entirely; (see fig. 6 and 7.) for in that case, as notion A has a part contained in notion B, the same part will then certainly be contained, likewise, in C: hence we obtain this form of syllogism:

Some A is B:
But Every B is C:
Therefore Some C is A.

Let us finally suppose, that the first proposition is negative and particular, namely,

Some A is not B.

It is represented in *plate II. fig. 8.* in which part of notion A is out of notion B.

In this case, if the third notion C contains notion A entirely, it will certainly also have a part out of notion B, as in *fig. 9 and 10:* which gives this syllogism:

Some A is not B:
But Every A is C:
Therefore Some C is not B.

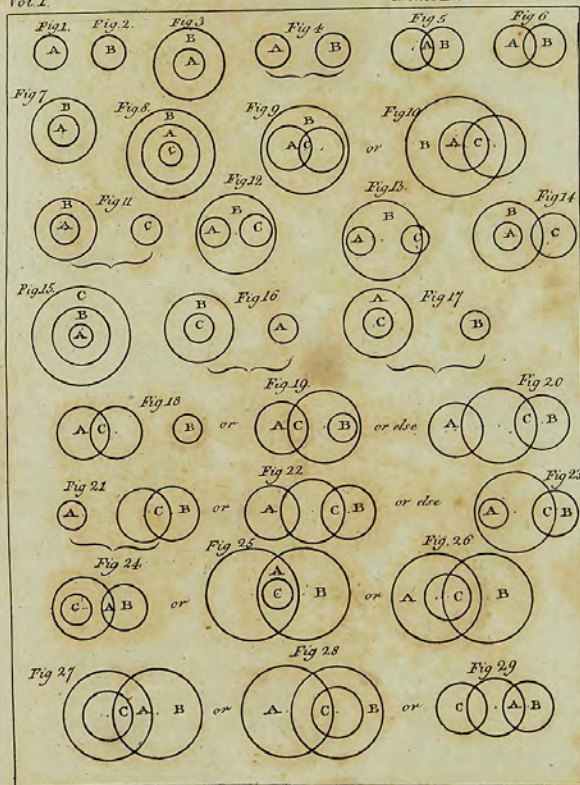
Again, if notion C is wholly included in notion B, as A has a part out of B, that same part will likewise certainly be out of C, (see *fig. 11 and 12.*) Hence this form of syllogism:

Some A is not B:
But Every C is B:
Therefore Some A is not C.

It may be of use to collect all these forms of syllogism into one table, in order to consider them at a single glance.

Vol. I.

Plate I. Second Series





| | |
|--|--|
| I. Every A is B: But Every C is A: Therefore Every C is B. | XI. No A is B: But Some C is B: Therefore Some C is not A. |
| II. Every A is B: But Some C is A: Therefore Some C is B. | XII. No A is B: But Some B is C: Therefore Some C is not A. |
| III. Every A is B: But No C is B: Therefore No C is A. | XIII. Some A is B: But Every A is C: Therefore Some C is B. |
| IV. Every A is B: But No B is C: Therefore No C is A. | XIV. Some A is B: But Every B is C: Therefore Some C is A. |
| V. Every A is B: But Some C is not B: Therefore Some C is not A. | XV. Some A is not B: But Every A is C: Therefore Some C is not B. |
| VI. Every A is B: But Every B is C: Therefore Some C is A. | XVI. Some A is not B: But Every C is B: Therefore Some A is not C. |
| VII. No A is B: But Every C is A: Therefore No C is B. | XVII. Every A is B: But Some A is C: Therefore Some C is B. |
| VIII. No A is B: But Every C is B: Therefore No C is A. | XVIII. No A is B: But Every A is C: Therefore Some C is not B. |
| IX. No A is B: But Some C is A: Therefore Some C is not B. | XIX. No A is B: But Every B is C: Therefore Some C is not A. |
| X. No A is B: But Some A is C: Therefore Some C is not B. | XX. Every A is B: But Every A is C: Therefore Some C is B. |



Of these twenty forms, I remark, that XVI. is the same with V. the latter changing into the former, if you write C for A, and A for C, and begin with the second proposition: there are, accordingly, but nineteen different forms.

The foundation of all these forms is reduced to two principles, respecting the nature of *containing* and *contained*.

I. *Whatever is in the thing contained, must likewise be in the thing containing.*

II. *Whatever is out of the containing, must likewise be out of the contained.*

Thus, in the last form, where the notion A is contained entirely in notion B, it is evident, that if A is contained in the notion C, or makes a part of it, that same part of notion C will certainly be contained in notion B, so that some C is B.

Every syllogism, then, consists of three propositions, the two first of which are called the *premises*, and the third the *conclusion*. Now, the advantage of all these forms, to direct our reasonings, is this, that if the premises are both true, the conclusion, infallibly, is so.

This is, likewise, the only method of discovering unknown truths. Every truth must always be the conclusion of a syllogism, whose premises are indubitably true. Permit me only to add, that the former of the premises is called the *major* proposition, and the other the *minor*.

21st February, 1761.

LETTER

LETTER CV.

Analysis of some Syllogisms.

IF you have paid attention to all the forms of syllogism, which I have proposed, you must see, that every syllogism necessarily consists of three propositions: the two first are called premises, and the third, the conclusion. Now the force of the nineteen forms, laid down, consists in this property common to them all, that if the two first propositions, or the premises, are true, you may rest, confidently assured of the truth of the conclusion.

Let us consider, for example, the following syllogism.

NO VIRTUOUS MAN IS A SLANDERER :

But SOME SLANDERERS ARE LEARNED
MEN :

Therefore SOME LEARNED MEN ARE NOT VIR-
TUOUS.

Whenever you allow me the two first propositions, you are obliged to allow the third, which necessarily follows from it.

This syllogism belongs to form XII. The same thing holds with regard to all the others, which I have laid down, and which the figures, whereby I have represented them, render sensible. Here we are presented with three notions: (*plate II. fig. 13.*) that of virtuous men, that of slanderers, and that of learned men.

D d 4

Let



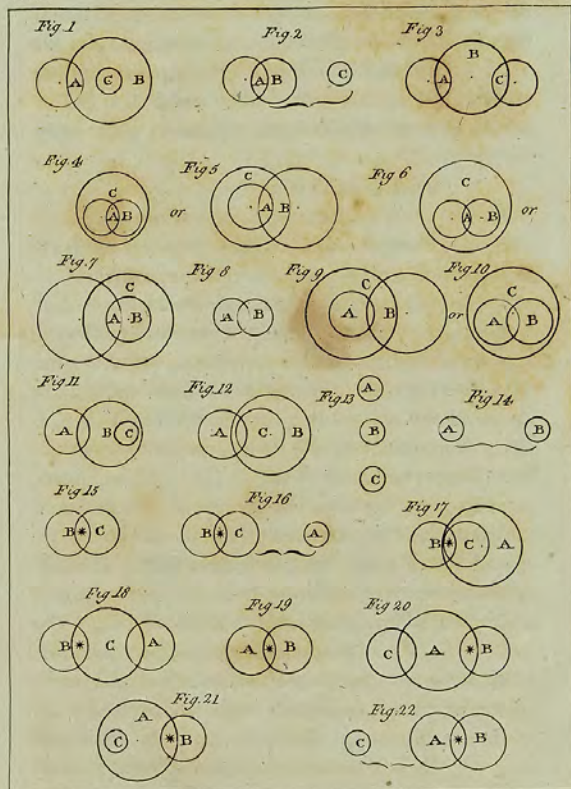
Let the space A represent the first, space B the second, and space C the third. It being said, in the first proposition, That no virtuous man is a slanderer; we maintain, that nothing contained in the notion of the virtuous man, that is, in the space A, is comprehended in the notion of the slanderer: that is, space B: therefore space A is wholly out of space B, (see plate II. fig. 14.)

But it is said, in the second proposition, that some men comprehended in notion B, are, likewise, contained in that of learned, that is, in space C: or else, you may say, that part of space B is within space C; (plate II. fig. 15.) where the part of space B, included in C, is marked with a *; which will be, likewise, part of space C. Since, therefore, some part of space C is in B, and that the whole space B is out of space A, it is evident, that the same part of space C must, likewise, be out of space A, that is, *some learned men are not virtuous.*

It must be carefully remarked, that this conclusion respects only the part * of notion C, which is comprehended in notion B: for as to the rest, it is uncertain, whether it be likewise excluded from notion A, as in plate II. fig. 16, or wholly contained in it, as in plate II. fig. 17, or only in part, as in plate II. fig. 18.

Now, this being left uncertain, the remainder of space C falls not at all under consideration; the conclusion is limited to that only which is certain, that is to say, the same part of space C, contained in space B, is certainly out of space A, for this last is wholly out of space B.

The





The justness of all the other forms of syllogism may be demonstrated in like manner; but all those which deviate from the nineteen forms laid down, or which are not comprehended under them, are destitute of foundation, and lead to error and falshood.

You will clearly discern the fault of such a syllogism, by an example, not reducible to any of the nineteen forms:

SOME LEARNED MEN ARE MISERS:

But NO MISER IS VIRTUOUS:

Therefore SOME VIRTUOUS MEN ARE NOT LEARNED.

This third proposition, may, perhaps, be true; but it does not follow from the premises. They too (the premises) may very well be true, and, in the present instance, they actually are so, but the third is not, for that, a fair conclusion: because it is contrary to the nature of just syllogism, in which the conclusion always must be true, when the premises are so. Accordingly, the fault of the form, above proposed, is immediately discovered, by casting your eyes on *fig. 13. of plate II.* Let space A contain all the learned; space B all the avaricious; and space C all the virtuous. Now, the first proposition is represented by *fig. 19.* in which part * of space A, (the learned) is contained in space B, (the avaricious).

Again, in the second proposition, the whole space C, (the virtuous) is out of space B, (the avaricious): but it by no means follows, (*fig. 20.*) that part of space C must be out of space A.

It is even possible for space C, to be entirely within
space



space A, as in *fig. 21*, or entirely out of it, as in *fig. 22*. and, at the same time, entirely out of space B.

A syllogism of this form, accordingly, is totally false and absurd.

Another example will put the matter beyond a doubt:

SOME TREES ARE OAKS :

But NO OAK IS A FIR :

Therefore SOME FIRS ARE NOT TREES.

This form is, precisely, the same with the preceding, and the falseness of the conclusion is manifest, though the premises are undoubtedly true.

But whenever a syllogism is reducible to one of the above nineteen forms, you may be assured, that if the two premises are true, the conclusion unquestionably always is so too. Hence you perceive, how, from certain known truths, you attain others before unknown; and that all the reasonings, by which we demonstrate so many truths in geometry, may be reduced to formal syllogisms. It is not necessary, however, that our reasonings should always be proposed in the syllogistic form, provided the fundamental principles be the same. In conversation, in discourse, and in writing, we rather make a point of avoiding syllogism.

I must farther remark, that, as the truth of the premises brings forward that of the conclusion, it does not thence necessarily follow, that when one or both of the premises are false, the conclusion must be so likewise: but it is certain, that when the conclu-

sion is false, one of the premises, or both, absolutely must be false; for if they were true, it would be impossible that the conclusion should be false, I have still some farther reflections to submit to you, on this subject, which is the foundation of the certainty of all the knowledge we acquire.

24th February, 1761.

L E T T E R C V I.

Different Figures and Modes of Syllogisms.

THE reflections which I have still to make on the subject of syllogism, may be reduced to the following articles:

I. A syllogism contains only three notions, named *terms*, in as far as they are represented by words. For though a syllogism contains three propositions, and each proposition two notions, or terms; it must be considered, that each term is twice employed in it, as in the following example:

EVERY A is B:

But EVERY A is C:

Therefore SOME C is B.

The three notions are marked by the letters A. B. C. which are the three terms of this syllogism: of which, the term A enters into the first and second proposition; the term B into the first and third proposition; and the term C into the second and third proposition.

II. You



II. You must carefully distinguish these three terms of every syllogism. Two of them, namely, B and C, enter into the conclusion, the one of which, C, is the *subject*, and the other, B, the *attribute*, or *predicate*. In logick, the subject of the conclusion, C, is called the *minor term*, and the predicate of the conclusion, B, the *major term*. But the third notion, or the term A, is found in both premises, and it is combined with both the other terms, in the conclusion. This term, A, is called the *mean* or *medium term*. Thus, in the following example.

NO MISER IS VIRTUOUS :

But SOME LEARNED MEN ARE MISERS :

Therefore SOME LEARNED MEN ARE NOT VIRTUOUS.

The notion *learned* is the minor term, that of *virtuous* is the major, and the notion of *miser*, is the mean term.

III. As to the order of the propositions, it is a matter of indifference, whether of the premises is in the first or second place, provided the conclusion holds the last, it being the consequence from the premises. Logicians have, however, thought proper to lay down this rule :

The first proposition is always that which contains the predicate of the conclusion, or the major term ; for this is the reason that we give to this proposition the name of the major proposition.

The second proposition contains the minor term, or the subject of the conclusion, and hence it has the name of the minor proposition.

Thus, the major proposition of a syllogism contains the

the

the mean term, with the major term, or predicate of the conclusion ; and the *minor proposition* contains the mean term, with the minor term, or subject, of the conclusion.

IV. Syllogisms are distinguished under different figures, according as the mean term occupies the place of *subject*, or *attribute*, in the premises.

Logicians have established four figures of syllogisms, which are thus defined :

The *first figure* is that in which the mean term is the subject, in the major proposition, and the predicate, in the minor.

The *second figure*, that in which the mean term is the predicate, in both the major proposition, and the minor.

The *third figure*, that in which the mean term is the subject, in both the major and minor propositions. Finally,

The *fourth figure*, is that in which the mean term is the predicate, in the major proposition, and the subject, in the minor.

Let P be the minor term, or subject of the conclusion : Q the major term, or predicate, of the conclusion, and M the mean term ; the four figures of syllogism will be represented in the manner following :

Figure First.

| | | | | | |
|-------------------|--|---|---|---|---|
| Major Proposition | | M | — | — | Q |
| Minor Proposition | | P | — | — | M |
| Conclusion | | P | — | — | Q |

Figure



Figure Second.

| | | | | |
|-------------------|---|---|---|---|
| Major Proposition | Q | — | — | M |
| Minor Proposition | P | — | — | M |
| Conclusion | P | — | — | Q |

Figure Third.

| | | | | |
|-------------------|---|---|---|---|
| Major Proposition | M | — | — | Q |
| Minor Proposition | M | — | — | P |
| Conclusion | P | — | — | Q |

Figure Fourth.

| | | | | |
|-------------------|---|---|---|---|
| Major Proposition | Q | — | — | M |
| Minor Proposition | M | — | — | P |
| Conclusion | P | — | — | Q |

V. Again, according as the propositions themselves are universal, or particular, affirmative, or negative, each figure contains several forms, called *Modes*. In order, the more clearly, to represent these modes of each figure, we mark by the letter A, universal affirmative propositions; by the letter E, universal negative propositions; by the letter I, particular affirmative propositions: and, finally, by the letter O, particular negative propositions: or else,

A represents an universal affirmative proposition.
 E represents an universal negative proposition.
 I represents a particular affirmative proposition.
 O represents a particular negative proposition.

VI. Hence, our nineteen forms of syllogism, above described, are reducible to the four figures, which I have just laid down, as in the following tables;

I. Modes

I. Modes of the First Figure.

| | |
|--|---|
| 1st Mode. A. A. A. Every M is Q; But Every P is M: Therefore Every P is Q. | 2d Mode. A. I. I. Every M is Q; But Some P is M: Therefore Some P is Q. |
| 3d Mode. E. A. E. No M is Q; But Every P is M: Therefore no P is Q. | 4th Mode. E. I. O. No M is Q; But Some P is M: Therefore Some P is not Q. |

II. Modes of the Second Figure.

| | |
|--|---|
| 1st Mode. A. E. E. Every Q is M; But No P is M: Therefore No P is Q. | 2d Mode. A. O. O. Every Q is M; But Some P is not M: Therefore Some P is not Q. |
| 3 Mode. E. A. E. No Q is M; But Every P is M: Therefore No P is Q. | 4th Mode. E. I. O. No Q is M; But Some P is M: Therefore Some P is not Q. |

III. Modes



III. Modes of the Third Figure.

| | |
|---|--|
| 1st Mode. A. A. I. Every M is Q; But Every M is P: Therefore Some P is Q. | 2d Mode. I. A. I. Some M is Q; But Every M is P: Therefore Some P is Q. |
| 3d Mode. A. I. I. Every M is Q; But Some M is P: Therefore Some P is Q. | 4th Mode. E. A. O. No M is Q; But Every M is P: Therefore Some P is not Q. |
| 5th Mode. E. I. O. No M is Q; But Some M is P: Therefore Some P is not Q. | 6th Mode. O. A. O. Some M is not Q; But Every M is P: Therefore Some P is not Q. |

IV. Modes of the Fourth Figure.

| | |
|---|--|
| 1st Mode. A. A. I. Every Q is M; But Every M is P: Therefore Some P is Q. | 2d Mode. I. A. I. Some Q is M; But every M is P: Therefore Some P is Q. |
| 3d Mode. A. E. E. Every Q is M; But No M is P: Therefore No P is Q. | 4th Mode. E. A. O. No Q is M; But Every M is P: Therefore Some P is not Q. |

5th Mode.
E. I. O.
No Q is M:
But Some M is P:
Therefore Some P is not Q.

You

You see, then, that the first figure has four modes; the second four; the third six; the fourth five; so that the whole of these modes, together, is *nineteen*, being precisely the same forms which I have above explained, and have just now disposed in the four figures. In other respects, the justness of each of these modes has been already demonstrated, by the spaces which I employed, to mark the notions. The only difference consists in this, that here I make use of the letters, P, Q, M, instead of A, B, C.

28th February, 1761.

L E T T E R C V I I .

Observations and Reflections, on the different Modes of Syllogism.

I FLATTER myself, that the following reflections will contribute, not a little, to place the nature of syllogisms in a clearer light. You must pay particular attention to the species of the propositions which compose the syllogisms, of each of our four figures, that is to say, whether they are,

1. Universal affirmative, the sign of which is A; or
2. Universal negative, the sign of which is E; or
3. Particular affirmative, the sign of which is I; or, finally,
4. Particular negative, the sign of which is O; and you will readily admit the justness of the following reflections:

VOL. I.

E c

I, In



I. In no one instance are both premises negative propositions. Logicians have hence formed this rule :

From two negative propositions, no conclusion can be drawn.

The reason is evident, for laying down P and Q, as the terms of the conclusion, and M as the mean term, if both premises are negative, the affirmation is, that the notions P and Q, are either wholly, or in part, out of M: it is, accordingly, impossible to conclude any thing, respecting the conformity, or disconformity, of the notions P and Q. Though I knew from history, that the Gauls were not Romans, and that neither were the Celtae Romans, this would not contribute in the least to inform me whether the Celtae were Gauls or not. Two negative premises, therefore, lead to no conclusion.

II. Both premises are, in no one instance, particular propositions; hence this rule is logic :

From two particular propositions, no conclusion can be drawn.

Thus, for example, because some learned men are poor, and some others malevolent, it is impossible to conclude, that those who are poor are malevolent, or that they are not so. If you reflect ever so little on the nature of a consequence, you must immediately perceive, that two particular premises lead to no conclusion whatever.

III. *If either of the premises is negative, the conclusion too must be negative.*

This is the third rule which logic prescribes. When something

something is denied in the premises, it is impossible to affirm any thing in the conclusion; we must absolutely deny there likewise. This rule is perfectly confirmed by all the laws of syllogism, whose justice has been above demonstrated.

IV. *If one of the premises is particular, the conclusion too must be particular.*

This is the fourth rule prescribed in logic. The character of particular propositions being the word *some*, if we speak only of some in one of the premises, it is impossible to speak generally, in the conclusion; it must be restricted to some. This rule, likewise, is confirmed by all the laws of syllogism, whose justness is indubitable.

V. *When both premises are affirmative, the conclusion is so likewise. But though both premises may be universal, the conclusion is not always universal, sometimes it is particular only, as in the first mode of figures third and fourth.*

VI. Beside universal and particular propositions, we, sometimes, make use of *singular* propositions, the subject of which is an individual; as when I say :

Virgil was a great Poet.

The name of *Virgil* is not a general notion, containing several beings in itself: it is the proper name of a real individual, who lived a great many years ago. This proposition is called *singular*; and when it is introduced into a syllogism, it is of importance to determine, whether we are to consider it as holding the rank of an universal, or particular, proposition.



VII. Certain authors insist, that a singular proposition must be ranked in the class of particulars; it being considered, that a particular proposition speaks only of some beings comprehended in the notion, whereas an universal proposition speaks of all. Now, say these authors, when we speak of only a singular being, this is still less than when we speak of some: and, consequently, a singular proposition must be considered as very particular.

VIII. However well founded this reasoning may appear, it cannot be admitted. The essence of a particular proposition consists in this, that it does not speak of all the beings, comprehended in the notion of the subject, whereas an universal proposition speaks of all, without exception. Thus, when it is said;

Some citizens of Berlin are rich,

the subject of this proposition is the notion of *all the citizens* of Berlin; but this subject is not taken in all its extent, its signification is expressly restricted to *some*: and, by this, particular propositions are essentially distinguished from universal, as they turn only on a part of the beings comprehended in their subject.

IX. It is clearly evident, from this remark, that a *singular proposition must be considered as universal*; as, in speaking of an individual, say Virgil, it, in no respect, restricts the notion of the subject, which is Virgil himself, but rather admits it in all its extent: and, for this reason, the same rules which take place in universal propositions apply, likewise, to singular propositions.

sitions. The following is, accordingly, a very good syllogism:

VOLTAIRE IS A PHILOSOPHER;

But VOLTAIRE IS A POET:

Therefore SOME POETS ARE PHILOSOPHERS.

And it would be faulty, if the two premises were particular propositions, but being considered as universal, this syllogism belongs to figure third, and the first mode of the form A. A. I. The individual idea of Voltaire is the mean term, which is the subject of both major and minor; and this is the character of figure third.

X. Finally, I must remark, that hitherto I have spoken only of *simple propositions*, which contain only two notions, the one of which is affirmed or denied, universally, or particularly. With respect to *compound propositions*, logic prescribes peculiar rules.

3d March, 1761.

—•••••—
LETTER CVIII.

Hypothetical Propositions, and Syllogisms constructed of them.

WE have, hitherto, considered simple propositions only, or such as contain but two notions, the one of which is the subject, the other the predicate. These propositions can form no other syllogisms, except those which I have laid before you; and which are contained in the four figures above explained. But we, likewise, frequently employ



compound propositions, which contain more than two notions, and respecting which other rules are to be observed, in order to deduce fair conclusions from them.

Of these compound propositions, the most common are those which are called *hypothetical*, or *conditional*, which contain two complete propositions, with an affirmation, that, *if the one is true, the other is so likewise*: the following is an example of a conditional proposition:

If the Gazette speaks truth, peace is not very distant.

Here are two propositions, the first, *the Gazette speaks truth*, or, *the Gazette is true*: and the other, *peace is not very distant*, or *peace is approaching*.

Now, these two propositions must be connected together in such a manner, that if the first is true, the second is so likewise; or, it is maintained, that the second proposition is a necessary consequence of the first, so that the former cannot be true, without establishing the truth of the other also. Supposing, then, that the Gazettes announce the approach of peace, we are warranted in saying, that, *if the Gazettes are true, peace must be at hand*.

Without this condition, such a proposition leads to nothing: but if this condition is complied with, then with the addition of some other proposition, there are two ways of drawing a conclusion from it: 1st, When some person assures us, *that the Gazette speaks truth*; for, hence we conclude, *that peace is near*: 2d, When we are told, *that peace is still very distant*;

distant; then we make no hesitation in thence concluding, *that the Gazette does not speak truth*.

You see that these two conclusions are general, and give two forms of hypothetical, or conditional, syllogisms, which may be thus represented:

First Form.

If A IS B, C WILL BE D;

But A IS B:

Therefore C IS D.

Second Form.

If A IS B, C WILL BE D;

But C IS NOT D:

Therefore A IS NOT B.

These two are the only just conclusions; and you must be carefully on your guard against the fallacy of the two following forms:

First erroneous Form.

If A IS B, C WILL BE D;

But A IS NOT B:

Therefore C IS NOT D.

Second erroneous Form.

If A IS B, C WILL BE D;

But C IS D:

Therefore A IS B.

These are both fallacious. In the example adduced, I should reason inconclusively, if I argued in this manner:

If THE GAZETTE SPEAKS TRUTH, PEACE IS APPROACHING;

But THE GAZETTE DOES NOT SPEAK TRUTH:

Therefore PEACE IS NOT APPROACHING.



It is, undoubtedly, true, that the Gazette may not speak truth; nevertheless, it is very possible that peace may be approaching.

The other form is equally erroneous;

If THE GAZETTE IS TRUE, PEACE APPROACHES;

But PEACE APPROACHES:

Therefore THE GAZETTE IS TRUE.

Let us suppose, that this consolatory truth, *peace approaches*, were revealed to us, so as to be put beyond the possibility of doubt, it would by no means follow that Gazettes are true, or that they never contain untruths. I hope, at least, that peace is at hand, though I am very far from putting confidence in the truth of Gazettes.

These two last forms of syllogisms, therefore, are fallacious; but the two preceding are certainly good, and never lead into error, provided that the first conditional proposition is true, or that the last part be a necessary consequence of the first.

Of this conditional proposition:

If A is B, C will be D.

The first part, *A is B*, is called the *antecedent*, and the other, *C will be D*, the *consequent*. Logic prescribes the two following rules to direct us in this style of reasoning:

I. *Whoever admits the antecedent, must likewise admit the consequent.*

II. *Whoever denies, or rejects, the consequent, must likewise deny, or reject, the antecedent.*

But you may very well deny the antecedent without

out denying the consequent, and likewise admit the consequent without admitting the antecedent.

There are still other compound propositions, of which also syllogisms may be formed. It will, perhaps, be sufficient to produce a single example. Having this proposition:

Every substance is body or spirit:
the conclusion will run in the following manner:

I. But Such a substance is not body;

Therefore It is spirit.

II. But Such a substance is body;

Therefore It is not spirit.

But it is entirely unnecessary to detain you longer on this subject.

7th March, 1761.

L E T T E R C I X .

Of the Impression of Sensations on the Soul.

HAVING endeavoured to unfold the principles of logic, whose object it is to lay down infallible rules for right reasoning, I must still detain you a little longer on the subject of ideas.

We, undoubtedly, derive them, in the first instance, from real objects, which strike our senses; and as far as they are struck with any object, a sensation corresponding is thereby excited in the soul. Not only do the senses represent to the soul the idea of that object, but they give it full assurance of its existence.



existence, out of us; and it is of importance to remark, that the sensation is not indifferent to the soul, but always accompanied with some pleasure, or disgust, to a greater or less degree.

Now, having once acquired, through this medium, the idea of any object, the soul loses it not when the object ceases to act on our senses; it is only the sensation, by which the soul is agreeably, or disagreeably affected, that is lost; but it still preserves the idea of the object itself. Not that the idea is ever present to it, or that it continually cherishes such idea in thought; but it possesses the power of awakening, or recalling, the idea, at pleasure.

This faculty of the soul, by which it is enabled to recollect ideas once perceived, is called *reminiscence*, which contains the source of memory. Deprived of the power of recalling past ideas, that of perceiving would answer little or no purpose; if we lost, every moment, the recollection of ideas once perceived, we should always be in the state of new-born infants, that is, in a state of the most profound ignorance. Reminiscence, then, is the most precious gift which the Creator has bestowed on the soul of man, and here it's spirituality shines in the brightest lustre; for, by means of this faculty, the soul gradually rises to the attainment of knowledge the most sublime.

But though recollected ideas represent to us the same objects which perceived ideas do, they differ from them, however, in this, that they are not accompanied with the sensation, nor with the conviction, that the objects really exist. If you have once
been

been spectator of a conflagration, you can recall the idea of it whenever you will, without imagining, however, that there really is one. It is even possible, that for a very long time, you may not have thought of such a conflagration, but without having lost the power of recalling the idea of it.

It is the same with respect to all the ideas which we have once perceived; but it frequently happens, that we lose, almost entirely, the recollection, or, in other words, forget them. We remark, nevertheless, a very great difference between ideas forgotten, and ideas wholly unknown, or such as we never had. With respect to the first, as soon as the same object presents itself afresh to our senses, we much more easily catch the idea of it, and we recollect perfectly, that it is the same which we had forgotten: this would not be the case had we never possessed it.

It is here the materialists boast of having found a demonstration of their opinions. They conclude from it, that it is extremely clear, the soul is nothing else but a subtle matter, on which external objects are capable of making some slight impression, by means of the senses: that this impression is nothing else but the idea of the objects; and that as long as it remains, the recollection is preserved; but that we forget it, when the impression is totally effaced.

If this reasoning were solid, ideas must necessarily remain always present with us, till we forgot them; this, however, is not the case; for we recall them when we please; and if the impression were effaced, how could matter recollect, that it formerly had that
impression,



impression, or receiving it afresh? And, though it be very certain, that the action of objects, on the senses, produces some change in the brain; this change is very different from the idea which is occasioned by it; and the sentiment of pleasure, or disgust, as well as the judgment respecting the object itself, which caused this impression, equally require a being wholly different from matter, and endowed with qualities of quite a different nature.

Our advances in knowledge are not limited to ideas perceived: the same ideas, recollected in the memory, form for us, by abstraction, general ideas of them, which contain, at once, a great number of individual ideas; and how many abstract ideas do we form, respecting the qualities and accidents of objects, which have no relation to any thing corporeal, such as the notions of virtue, of wisdom, &c.?

This, after all, refers only to the *understanding*, which comprehends but a part of the faculties of the soul; the other part is not less extensive, namely, *the will and liberty*, on which depend all our resolutions and actions. There is nothing in the body relative to this quality, by which the soul freely determines itself to certain actions, even after mature deliberation. It pays regard to motives, without being forced to submit to their influence; and liberty is so essential to it, as well as to all spirits, that it would be as impossible to imagine a spirit without liberty, as a body without extension. God himself could not divest a spirit of this essential property.

It is by this, accordingly, that we are enabled to solve

solve all the perplexing questions respecting the origin of evil, the permission of sin, and the existence of all the calamities by which the world is oppressed; their great and only source is human liberty.

10th March, 1761.

L E T T E R C X .

Of the Origin and Permission of Evil; and of Sin.

THE origin and permission of evil in the world, is an article which has, in all ages, greatly perplexed theologians and philosophers. To believe that God, a Being supremely good, should have created this world, and to see it overwhelmed with such variety of evil, appears so contradictory, that some found themselves reduced to the necessity of admitting two principles, the one supremely good, the other supremely evil. This was the opinion entertained by the ancient heretics, known in history by the name of *Manicheans*; who, seeing no other way of accounting for the origin of evil, were reduced to this extremity. Though the question be extremely complicated, this single remark, that liberty is a quality essential to spirits, dispels, at once, a great part of the difficulties, which would otherwise be insurmountable.

In truth, when God had created man, it was too late to prevent sin, his liberty being susceptible of no constraint. But, I shall be told, it would have been



been better not to create such and such men, or spirits, who, as God must have foreseen, would abuse their liberty, and plunge into sin. I should deem it rather rash to enter upon this discussion, and to pretend to judge of the choice which God might have been able to make, in creating spirits; and, perhaps, the plan of the universe required the existence of spirits of every possible description. And, in fact, when we reflect, that not only our earth, but all the planets, are the habitations of rational beings; and that even all the fixed stars are suns, each of which may have around it a system of planets, likewise habitable, it is clear, that the number of all the beings endowed with reason, which have existed, which do exist, and which shall exist, in the whole universe, must be infinite.

It is, therefore, unpardonable presumption to insinuate, that God ought not to have granted existence to a great number of spirits; and the very persons, who thus reproach their Maker, would certainly not wish to be of the number of those to whom existence was denied. This first objection, then, is sufficiently done away; and it is no way inconsistent with the Divine perfections, that existence has been bestowed on all spirits, good and bad.

It is next alleged, that the mischievousness of spirits, or reasonable beings, ought to have been repressed by the divine Omnipotence. On this I remark, that liberty is so essential to all spirits, as to be beyond all power of constraint; the only method of governing spirits consists in the use of motives, to dispose them

them to what is good, and to dissuade them from evil; but, in this respect, we find not the slightest ground of complaint. The most powerful motives have, undoubtedly, been proposed to all spirits, to incline them to good, these motives being founded on their own salvation; but they by no means employ constraint, for this would be contrary to their nature, and in all respects impossible.

However wicked men may be, it never can be in their power to excuse themselves, from ignorance of the motives which would have prompted them to good: the divine law, which constantly aims at their everlasting happiness, is engraven on their heart, and it must always be their own fault if they plunge into evil. Religion discovers to us, likewise, so many other means which God employs to reclaim us from our wanderings, that, on this side, we may rest confidently assured, that God has omitted nothing which could have prevented the malignant explosions of men, and of other reasonable beings.

But those who bewilder themselves in such doubts respecting the origin and the permission of evil in the world, perpetually confound the corporeal with the spiritual world; they imagine that spirits are, as bodies, susceptible of constraint. Severe discipline is, frequently, capable of preventing, among the children of a family, the soldiers of an army, or the inhabitants of a city, the open eruption of perverse dispositions; but it must be carefully remarked, that this constraint extends only to what is corporeal; it, in no respect, restrains the spirit from being as
7 vicious,



vicious, and as malignant, as if it enjoyed the most unbounded licence.

Human governments must rest contented with this exterior, or apparent tranquillity, and give themselves little trouble about the real dispositions of men's minds; but, before God, the thoughts all lie open, and perverse inclinations, however concealed from men, are as abominable in his sight, as if they had broke out into the most atrocious actions. Men suffer themselves to be dazzled by false appearances; but God has respect to the real dispositions of every spirit, according as they are virtuous, or vicious, independently of the actions which flow from them.

The Holy Scriptures contain, to this purpose, the most pointed declarations, and inform us, that he who meditates only the destruction of his neighbour, suffering himself to be hurried away by a spirit of hatred, is as criminal in the sight of God, as the actual murderer; and that he who indulges a covetous desire of another's property is, in his estimation, as much a thief as he who really steals.

In this respect, therefore, the government of God over spirits, or rational beings, is infinitely different from that which men exercise over men like themselves; and we greatly err, if we imagine that a government, which appears the best in the eyes of men, is really so in the judgment of God. This is a reflection of which we ought never to lose sight.

14th March, 1761.

LETTER

LETTER CXI.

Of moral and physical Evil.

WHEN complaint is made of the evil which prevails in the world, a distribution of them into two classes takes place: *moral evils* and *physical evils*. The class of moral evils contains the perverse or vicious inclinations, the dispositions of spirits to what is evil or criminal, which is undoubtedly the most grievous calamity and the greatest imperfection which can exist.

In truth, with regard to spirits, it is impossible to conceive a more deplorable irregularity, than when they deviate from the eternal laws of virtue, and abandon themselves to the commission of vice. Virtue is the only means of rendering a spirit happy; to bestow felicity on a vicious spirit is beyond the power of God himself. Every spirit addicted to vice is necessarily miserable, and, unless it return to virtue, it's misery cannot come to an end: such is the idea I form of demons, of wicked and infernal spirits; an idea which, to me, appears consonant to what Scripture suggests on the subject.

Infidels make a jest of this; but as men cannot pretend to be the best of all rational beings, neither can they boast of being the most wicked; there are, undoubtedly, beings much more depraved than the most malignant of mankind, such as devils. But I have already made it appear, that the existence of so

Vol. I.

F f

many



many corrupted men and spirits, ought not to form any objection against the perfection of this world, much less be considered as an imputation of the Supreme Being.

A spirit, the devil not excepted, is always a being, excellent, and infinitely superior to every thing that can be conceived in the corporeal world; and this world, as far as it contains an infinite number of spirits, of all orders, is always a work of the highest perfection. Now, all spirits being essentially free, criminality was possible from the commencement of their existence, and could not be prevented even by the divine Omnipotence. Besides, spirits are the authors of the evils which necessarily result from sin, every free agent being always the only author of the evil which he commits; and, consequently, these evils cannot be imputed to the Creator; as among men, the workman who makes the sword is not responsible for the mischief that is done with it. Thus, with respect to the moral evils which prevail in the world, the sovereign goodness of God is sufficiently justified.

The other class, that of *physical evils*, contains all the calamities and miseries to which men are exposed in this world. It is admitted, that most of these are a necessary consequence of the malice, and other vicious propensities with which men, as well as other spirits, are infected; but as these consequences are communicated by means of bodies, it is asked, Why God should permit to wicked spirits, the power of acting so efficaciously on bodies, and of employing them

them as instruments to execute their pernicious purposes? A father, who saw his son on the point of committing a murder, would snatch the sword out of his hand, and prevent the perpetration of a crime so heinous. I have already observed, that this abandoned son is equally guilty before God, whether he has actually accomplished his design, or only made ineffectual efforts to execute it, and the father, who prevented him, does not thereby render him better.

We may, nevertheless, confidently maintain, that God does not permit a free course to the wickedness of man. Did nothing resist the execution of all the pernicious purposes of the human heart, how miserable should we be! We frequently see, that the wicked have great difficulties to encounter, and though they should succeed, they have no power over the consequences of their actions, which always depend on so many other circumstances, that, in the issue, they produce the directly opposite effect from what was intended. It cannot be denied, at the same time, that there may result from these, calamities and miseries to torment mankind; and it is imagined, that the world would be infinitely better governed, were God to interpose an effectual restraint to the wickedness and audacity of men.

It would, undoubtedly, be very easy for God to crush to death a tyrant, before he could realize his cruel and oppressive designs, or to strike dumb an unjust judge, who was going to pronounce an iniquitous sentence. We might then live quietly, and enjoy all the comforts of life, supposing God were



to grant us the blessings of health, and all the good things we could wish for: our happiness would thus be perfect. On this plan they would have the world governed, in order to render us all happy: the wicked disabled to perpetrate their criminal purposes, and the good in possession of the peaceful enjoyment of all the blessings which they can desire.

It is believed, and with good reason, that God wishes the happiness of men, and it is matter of surprize, that this world should be so different from the plan which is imagined the most proper for the attainment of this end. We rather see the wicked frequently enjoying, not only all the advantages of this life, but put in a condition to execute their machinations, to the confusion and distress of persons of worth, while the good are oppressed and overwhelmed by the most sensible evils, pains, diseases, mortifications, loss of goods, and, in general, by every species of calamity; and that, at last, the good as well as the bad, must infallibly die, which appears to be the greatest of all evils.

Looking on the world in this point of view, one is tempted to call in question the supreme wisdom and goodness of the Creator; but it is a hazard which we must take great care to shun.

17th March, 1761.

LETTER

LETTER CXII.

Reply to Complaints of the Existence of physical Evil.

SUPPOSING our existence limited to the present life, the possession of the good things of this world, and the enjoyment of every delight, would be very far from filling up the measure of our happiness. All are agreed, that true felicity consists in mental tranquillity and satisfaction, which are seldom, if ever, accompanied with that brilliancy of condition, which is considered as such an inestimable blessing, by those who judge only from appearances.

The insufficiency of temporal good things to render us happy, becomes still more manifest, when we come to reflect on our real destination. Death does not put a period to our existence, it rather transmits us into another life, which is to endure for ever. The faculties of our soul, and our attainments in knowledge, will then, no doubt, be carried to the highest perfection; and it is on this new state that our real happiness depends, and this state cannot be happy without virtue.

The infinite perfections of the Supreme Being, which we now perceive only as through a thick cloud, shall then shine in the brightest lustre, and shall become the principal object of our contemplation, admiration, adoration. There, not only shall our understanding find the most inexhaustible stores of pure and perfect knowledge, but we shall be per-

F f 3

mitted



mitted to hope for admission into favour with the Supreme Being, and to aspire after the most endearing expressions of his love. How happy do we reckon the peculiar favourites of a great prince, especially if he is really great, though the favours which he bestows are marred by many infusions of bitterness? What will it then be, in the life to come, when God himself shall *shed abroad his love in our hearts*, a love the effects of which shall never be interrupted nor destroyed! This shall, thenceforward, constitute a felicity infinitely surpassing all that we can conceive.

In order to a participation of these inexpressible favours, flowing from the love of the Supreme Being, it is natural that, on our part, we should be penetrated with sentiments of the most lively affection to him. This blessed union absolutely requires, in us, a certain disposition, without which we should be incapable of participating in it; and this disposition consists in virtue, the basis of which is the love of God, and that of our neighbour. The attainment of virtue, then, should be our chief, our only object in this life, where we exist but for this end, to prepare for, and to render ourselves worthy of partaking in supreme and eternal felicity.

In this point of view, we must form a judgment of the events which befall us in this life. It is not the possession of the good things of this world that renders us happy; it is rather, a situation which most effectually conducts to virtue. If prosperity were the certain means of rendering us happy, we might be suffered to complain of adversity; but adversity

verity may rather have the effect of confirming our virtue, and, in this view, all the complaints of men, respecting the physical evils of life, are, likewise, completely done away.

You have no difficulty, then, in comprehending, that God had the most solid reasons for admitting into the world so many calamities and miseries, as the whole obviously contributes to our salvation. It is unquestionably true, that these calamities are, for the most part, natural consequences of human corruption; but it is in this very thing, that we must principally admire the wisdom of the Supreme Being, who knows how to over-rule the most vicious actions, for our final happiness.

Many good people would not have reached such a sublimity of virtue, had they not been oppressed, and tormented, by cruelty and injustice.

I have already remarked, that bad actions are such, only with regard to those who commit them: the determination of their soul alone is criminal, the action itself being a thing purely corporeal, in as much as, considered independently of the person who commits it, there is nothing, either good or evil, in the case. A mason falling from the roof of a house upon a man, as certainly kills him as the most determined assassin. The action is absolutely the same; but the mason is not guilty in the slightest degree; whereas the assassin deserves the severest punishment. Thus, however criminal actions may be, with regard to those who commit them, we must consider them in quite a different light as they



affect ourselves, or produce an influence on our situation.

We ought, therefore, to reflect, that nothing can befall us, but what is perfectly consonant to the sovereign wisdom of God. The wicked may be guilty of injustice towards us, but we cannot upon the whole suffer from it; no one can ever injure us, though he may greatly hurt himself; and in every thing that comes to pass, we ought always to acknowledge God, as if it befell us immediately by his express appointment. We may, moreover, rest assured, that it is not from caprice, or merely to vex us, that God disposes the events in which we are concerned, but that they must infallibly terminate in our true happiness. Those who consider all events in this light, will soon have the satisfaction of being convinced, that God exercises a peculiar care over them.

21st March, 1761.

L E T T E R CXIII.

The real Destination of Man; Usefulness and Necessity of Adversity.

I HOPE you have no doubts remaining, with respect to this great question: How the evils of this world can be reconciled to the supreme wisdom and goodness of the Creator? The solution of it is incontestably founded on the real destination of man,
and

and of other intelligent beings, whose existence is not limited to this life. The moment that we lose sight of this important truth, we find ourselves involved in the greatest perplexity, and if man were created only for this life, it would assuredly be impossible to establish a consistency between the perfections of God and the distresses and miseries with which this world is oppressed. Those miseries would be but too real; and it were absolutely impossible to explain, How the prosperity of the wicked, and the misery of so many good people, could consist with the divine justice.

But no sooner do we reflect that this life is but the commencement of our existence, and that it is serving as a preparation for one that shall endure eternally, the face of things is entirely changed, and we are obliged to form a very different judgment of the evils with which this life appears to be overspread. I have already remarked, that the prosperity which we enjoy in this world is the reverse of a suitable preparation for a future life, and for rendering us worthy of the felicity which there awaits us. However important to our happiness the possession of the good things of this world may appear, this quality pertains to them only in so far as they are impressed with the signatures of divine goodness, independent of which no earthly possessions could constitute our felicity.

Real happiness is to be found only in God himself; all other delights are but an empty shade, and are capable of yielding only a momentary satisfaction.



tion. Accordingly we see that those who enjoy them in the greatest abundance, are quickly satiated; and this apparent felicity serves only to inflame their desires, and to disorder their passions, by estranging them from the Supreme Good, instead of bringing them nearer to Him. But true felicity consists in a perfect union with God, which cannot subsist without a love and a confidence in his goodness, transcending all things: and this love requires a certain disposition of soul, for which we must be making preparation in this life.

This disposition is virtue, the foundation of which is contained in these two great precepts:

Thou shalt love the Lord thy God with all thy heart, with all thy soul, with all thy strength, and with all thy mind;

and the other, which is like unto it:

Thou shalt love thy neighbour as thyself.

Every other disposition of soul which deviates from these two precepts, is vicious, and absolutely unworthy to partake of true happiness. It is as impossible for a vicious man to enjoy happiness in the life to come, as for a deaf man to relish the pleasure of an exquisite piece of music. He must be forever excluded from it, not by an arbitrary decree of God, but by the very nature of the thing; a vicious man not being, from his own nature, susceptible of supreme felicity.

If we consider the order and economy of the world, in this point of view, nothing can be more perfectly disposed for the attainment of this great end.

end. All events, the calamities themselves which we undergo, are the most suitable means for conducting us to true happiness: and in this respect, it may be with truth affirmed, that this is, indeed, the best world possible, as every thing in it concurs to promote our eternal salvation. When I reflect, that nothing befalls me by chance; but that every event is directed by Providence, in the view of rendering me truly and everlastingly happy, how ought this consideration to raise my thoughts to God, and to replenish my soul with the purest affection!

But, however efficacious these means may be in themselves, they exercise no force upon our minds, to which liberty is so essential, that no degree of constraint can possibly take place. Experience, accordingly, frequently demonstrates that our attachment to the objects of sense renders us too vicious to listen to these salutary admonitions. Abuse of the means which would have improved our virtue, plunges us deeper and deeper into vice, and hurries us aside from the only path that leads to happiness.

24th March, 1761.



LETTER CXIV.

*Of true Happiness. Conversion of Sinners. Reply to
Objections on the Subject.*

THE holy life of the apostles, and of the other primitive Christians, appears to me an irresistible proof of the truth of the Christian Religion. If true happiness consists in union with the Supreme Being, which it is impossible for a moment to doubt, the enjoyment of this happiness necessarily requires, on our part, a certain disposition, founded on supreme love to God, and the most perfect charity toward our neighbour, so that all those who are destitute of this disposition, destroy their own pretensions to celestial felicity; and wicked men are, from their very nature, necessarily excluded from it, it being impossible for God himself to render them happy. For the Divine Omnipotence extends only to things which are in their nature possible, and liberty is so essential to spirits, that no degree of constraint can take place with respect to them.

It is only by motives, therefore, that spirits can be determined to that which is good: now what motives could be proposed to the apostles and other disciples of Jesus Christ, to embrace a virtuous life, more powerful than the instructions of their divine Master, his miracles, his sufferings, his death and resurrection, of which they were witnesses. All these striking events, united to a doctrine the most sublime,

blime, must have excited, in their hearts, the most fervent love and the most profound veneration for God, whom they could not but consider and adore as at once their heavenly Father, and the absolute Lord of the whole universe. These lively impressions must necessarily have filled in their breasts every vicious propensity, and have confirmed them, more and more, in the practice of virtue.

This salutary effect on the minds of the apostles, has nothing in it, of itself, miraculous, or which encroaches, in the smallest degree, on their liberty, though the events be supernatural. The great requisite was, simply, a heart docile and uncorrupted by vice and passion. The mission, then, of Jesus Christ into the world, produced, in the minds of the apostles, this disposition, so necessary to the attainment and the enjoyment of supreme happiness; and that mission still supplies the same motives to pursue the same end. We have only to read attentively, and without prejudice, the history of it, and seriously to meditate on all the events.

I confine myself to the salutary effects of our Saviour's mission, without presuming to dive into the mysteries of the work of our redemption, which infinitely transcend the powers of human understanding. I only remark, that these effects, of the truth of which we are convinced by experience, could not be produced by illusion, or human imposture; they are too salutary not to be divine. They are likewise perfectly in harmony with the incontestable principles
which



which we have laid down, that spirits can be governed only by motives.

Theologians have maintained, and some still maintain, that conversion is the immediate operation of God, without any co-operation on the part of man. They imagine that an act of the Divine will is sufficient to transform, in an instant, the greatest sinner into a virtuous man. These good gentlemen may mean extremely well, and consider themselves as thus exalting the divine Omnipotence; but this sentiment seems to me inconsistent with the justice and goodness of God, even though it were not subversive of human liberty. How, it will with reason be said, if a simple exertion of the divine Omnipotence is sufficient for the instantaneous conversion of every sinner, can it be possible that the decree should not actually pass, rather than leave so many thousands to perish, or employ the work of redemption, by which a part only of mankind is saved? I acknowledge that this objection appears to me much more formidable than all those which infidelity raises against our holy religion, and which are founded entirely in ignorance of the true destination of man; but, blessed be God, it can have no place in the system which I have taken the liberty to propose.

Some divines will perhaps accuse me of heresy, as if I were maintaining that the power of man is sufficient for his conversion; but this reproach affects me not, as I am conscious of intending to place the goodness of God in its clearest light. In the work

of conversion, man makes perfect use of his liberty, which is unsusceptible of constraint, but man is always determined by motives. Now, these motives are suggested by the circumstances and conjunctures of his condition. They depend entirely on divine Providence, which regulates all events, conformably to the laws of sovereign wisdom. It is God, therefore, who places men every instant in circumstances the most favourable, and from which they may derive motives the most powerful, to produce their conversion; so that men are always indebted to God for the means which promote their salvation.

I have already remarked, that however wicked the actions of men may be, they have no power over their consequences, and that God, when he created the world, arranged the course of all events, so that every man should be every instant placed in circumstances to him the most salutary. Happy the man who has wisdom to turn them to good account!

This conviction must operate in us the happiest effects: unbounded love to God, with a firm reliance on his providence, and the purest charity toward our neighbour. This idea of the Supreme Being, as exalted as it is consolatory, ought to replenish our hearts with virtue the most sublime, and effectually prepare us for the enjoyment of life eternal.

28th March, 1761.



LETTER CXV.

The true Foundation of human Knowledge. Sources of Truth, and Classes of Information derived from it.

HAVING taken the liberty to lay before you my opinion respecting the most important article of human knowledge, I flatter myself it will be sufficient to dissipate the doubts which naturally arise out of the subject, from want of exact ideas of the liberty of spirits.

I shall now have the honour of submitting to your consideration the true foundation of all our knowledge, and the means we have of being assured of the truth and certainty of what we know. We are very far from being always certain of the truth of all our sentiments; for we are but too frequently dazzled by appearances, sometimes exceedingly slight, and whose falsehood we afterwards discover. As we are, therefore, continually in danger of deceiving ourselves, a reasonable man is bound to use every effort to avoid error, though he may not always be so happy as to succeed.

The thing to be here chiefly considered is the solidity of the proofs on which we found our persuasion of any truth whatever, and it is absolutely necessary that we should be in a condition to judge if they are sufficient to convince us or not. For this effect I remark, first, that all truths within our reach
are

are referable to three classes, essentially distinguished from each other.

The first contains the truths of the senses; the second, those of the understanding; and the third, those of belief. Each of these classes requires peculiar proofs of the truths included in it, and in these three classes all human knowledge is comprehended.

Proofs of the first class are reducible to the senses, and are thus expressed:

This is true, for I saw it, or am convinced of it by the evidence of my senses.

It is thus I know that the magnet attracts iron, because I see it, and experience furnishes me with incontestable proofs of the fact. Truths of this class are called *sensible*, because they are founded on the senses, or on experience.

Proofs of the second class are founded in ratiocination; thus:

This is true, for I am able to demonstrate it on principles of just reasoning, or by fair syllogisms.

To this class, principally, logic is to be referred, which prescribes rules for reasoning consequentially. It is thus, we know, that the three angles of a rectilinear triangle are together equal to two right angles. In this case I do not say I see it, or that my senses convince me of it; but I am assured of its truth by a process of reasoning. Truths of this class are called *intellectual*, and here we must rank all the truths of geometry, and of the other sciences, in as much as they are supported by demonstration. You must be sensible, that such truths are wholly different from



those of the first class, in support of which we adduce no other proofs but the senses, or experience, which assure us that the fact is so, though we may not know the cause of it. In the example of the magnet, we do not know how the attraction of iron is a necessary effect of the nature of the magnet, and of iron; but we are not the less convinced of the truth of the fact. Truths of the first class are as certain as those of the second, though the proofs which we have of them are entirely different.

I proceed to the third class of truths, that of faith, which we believe, because persons worthy of credit relate them; or when we say:

This is true, for several credible persons have assured us of it.

This class, accordingly, includes all *historical truths*. You believe, no doubt, that there was formerly a king of Macedon, called Alexander the Great, who made himself master of the kingdom of Persia, though you never saw him, and are unable to demonstrate, geometrically, that such a person ever existed. But we believe it on the authority of the authors, who have written his history, and we entertain no doubt of their fidelity. But may it not be possible that these authors have concerted to deceive us? We have every reason to reject such an insinuation, and we are as much convinced of the truth of these facts, at least of a great part of them, as of truths of the first and second classes.

The proofs of these three classes of truths are extremely different; but if they are solid, each in its kind,

kind, they must equally produce conviction. You cannot possibly doubt that Russians and Austrians have been at Berlin, though you did not see them: this, then, is to you a truth of the third class, as you believe it on the report of others; but to me it is one of the first class, because I saw them, and conversed with them, and as many others were assured of their presence by means of other senses. You have, nevertheless, as complete conviction of the fact as we have.

31st March, 1761.

Aug 13 1808

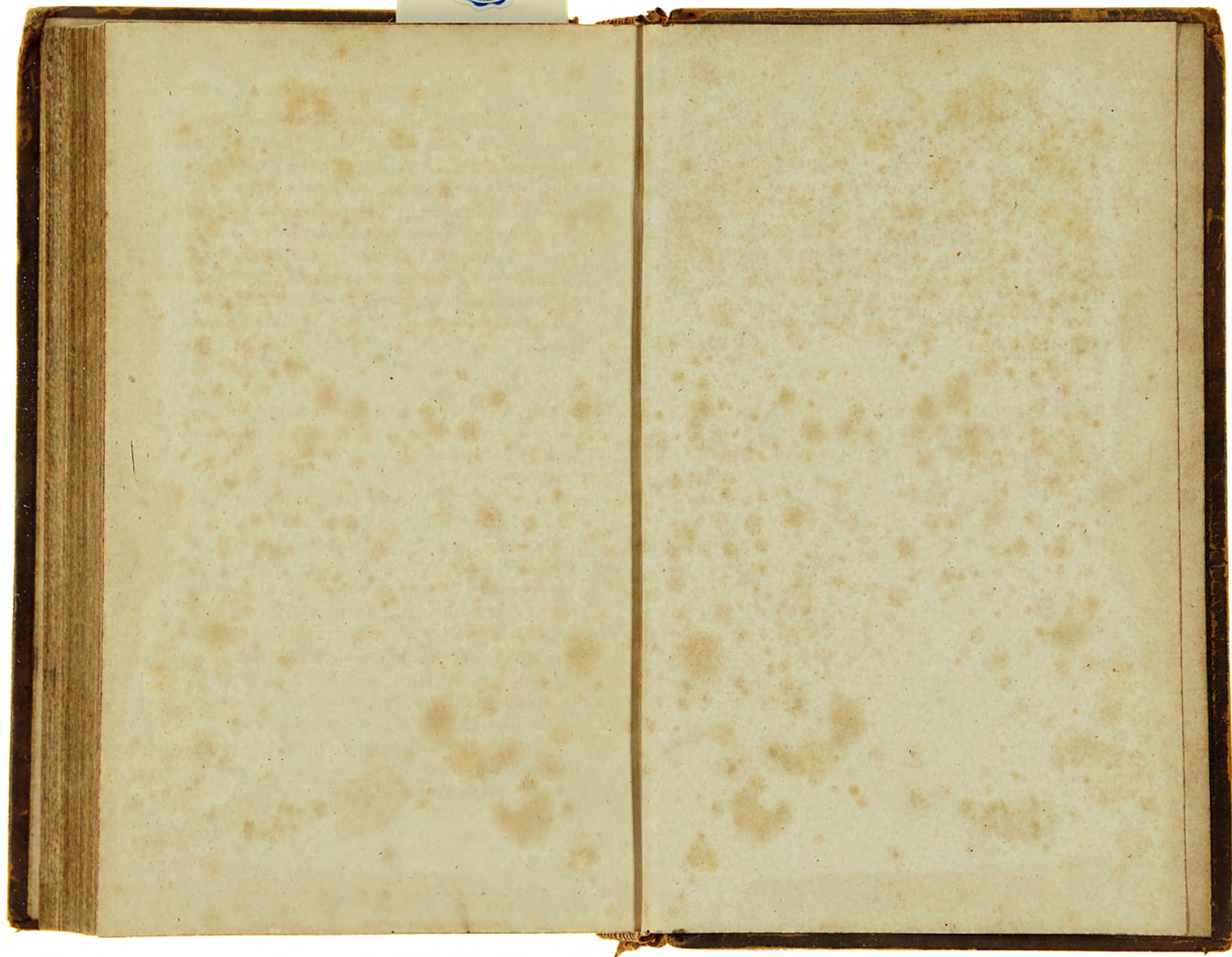
END OF THE FIRST VOLUME.



NUM. KNOWLEDGE.

kind, they might equally produce confusion. You
cannot possibly doubt that Russians and Austrians
have been as hostile, though you did not see them:
this then, is to your credit of the third class, as you
believe in the report of others; but to me it is
one of the first class, because I saw them, and con-
sulted with others, and saw many others were assured
of their pretence by means of other letters. You
have nevertheless, as complete conviction of the fact
as we have.

THE END.





ambon a Task confira Figeo alymna
Celibaty - occupat hinguishd Place -
vibrata

6
23
J

貴重書

