Mind and soul : a lecture on the intellectual differences between man and the lower animals, especially with reference to instinct and reason : delivered at the Wakefield Mechanics' Institution, November 27, 1848 / by J.G. Atkinson.

MIND AND SOUL;

A Lecture

ON THE

INTELLECTUAL DIFFERENCES BETWEEN MAN AND THE LOWER ANIMALS, ESPECIALLY WITH REFERENCE TO INSTINCT AND REASON.

DELIVERED AT THE

WAKEFIELD MECHANICS' INSTITUTION,

NOVEMBER 27, 1848,

BY

J. G. ATKINSON, M.D.

Wakefield:

JOHN STANFIELD, BOOKSELLER, MARKET PLACE.

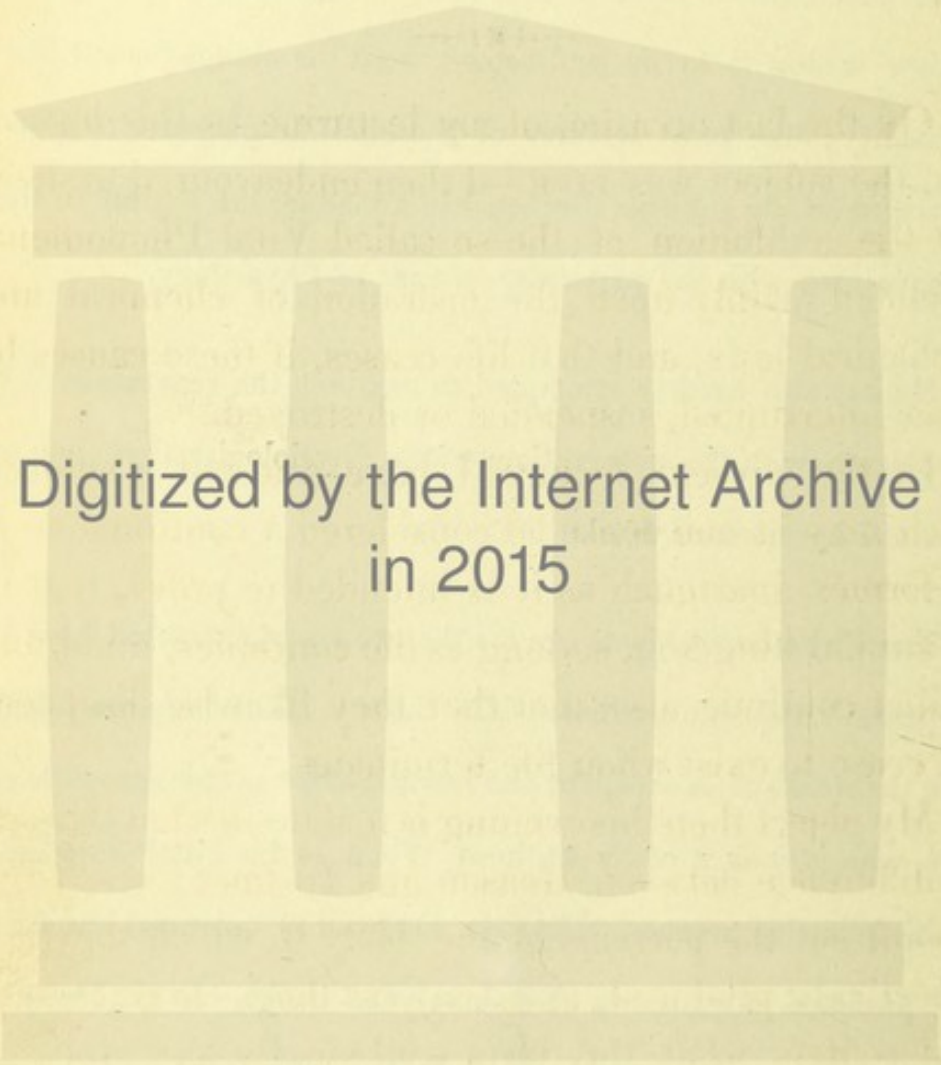
1849.

PREFACE.

Having been requested to publish the following Lecture, the Author wishes it to be understood, that he claims for it little of originality; like most lectures of the kind, he purposes to give an exposition of the subjects discussed in a manner intelligible to those unacquainted with the particular science of Physiology.

He has also further attempted to combine the reasonings of the Theologian, with the observations of the Physiologist, that they may form one harmonious whole.

The Physiological facts are for the most part extracted from Dr. Carpenter's valuable treatise, while those on Theology are selected from the works of an excellent and learned writer of the sixteenth century, who is spoken of by Anthony Wood, in his Fasti Oxonienses, in the following manner, "His (Mr. Dodwell's) universal knowledge and profound judgment in all sciences and books, has rendered him famous amongst all learned men of France and Italy, and the great sanctity and severity of his life, has gained him a veneration very peculiar and distinguished among all sorts of people. His greatest study has been to assert the honour and interest of Religion."



LECTURE.

On the last occasion of my lecturing in this institution, the subject was LIFE—I then endeavoured to shew, that the exhibition of the so called Vital Phenomena, depended mainly upon the operation of chemical and mechanical laws, and that life ceases, if these causes be either interrupted, suspended or destroyed.

In the present lecture I have selected a subject, which may in one sense be considered a continuation of the former, inasmuch as it is intended to prove, that in the animal kingdom, so long as life continues, mind and instinct continue also, and that they likewise disappear and cease to exist when life terminates.

My object then this evening is to show in what consists the difference between Reason and Instinct: secondly, to point out the portions of the body in which they are respectively produced, and lastly to define from theological writers what the term soul strictly and properly signifies.

There are two classes of mental actions, the one termed instinctive,--the other rational.

It would be foreign to this lecture to enter into any theories respecting the nature or essence of mind, I shall content myself with stating, that it is dependent

upon a living state of the body, and from proofs which I shall presently offer, I trust to be able to convince you, that the power of producing mental acts, may still further be localized in a particular part of the body, viz: in the nervous matter included within the walls of the skull.

I shall also during the lecture show, that the nervous mass within the skull, performs two separate and distinct offices, a part of it being concerned in the operation of the reasoning faculties, while a second portion is used for instinctive actions.

The evidence of the nature of the soul, must be gathered from higher sources than the physiological enquirer can suggest; I shall therefore avail myself of the opinions of theologians, for our knowledge of the relation that the soul bears to the human body, not that I wish, or intend to impinge on theological grounds, but merely to assist in drawing your attention to the proper distinction between reason and instinct; for how frequently do we hear the terms mind or reason used synonimously with soul—instinct is erroneously supposed to be the only attribute of brutes, while on the other hand reason is ascribed to man alone.

Now an instinctive action is an action performed by a being, and resulting from neither observation nor experience;—perfect from the first, as regards the means used, and the end to be obtained, always the same in all healthy animals, and the necessary result of a peculiar organism; why such a form of matter manifests such peculiar functions we cannot tell; all that we may

ever know is, that a peculiar organism, under the influence of certain stimuli, performs certain actions which are denominated instinctive.

A rational action, is an action, performed by a being, and resulting from observation and experience, and therefore capable of being improved; the necessary consequence of the degree of developement and exercise of a peculiar organism; and why this is so we cannot tell, and beyond this we may never progress.

Reason I believe to be the function of the brain, innumerable instances might be adduced illustrating the fact that injury of the brain either totally destroys, or for a time suspends the mental functions and in some cases recorded, where this injury has remained for years with an entire suspension of the reasoning faculties, the mind has at length regained its usual power, on the cause being removed. In proof of this, we read in Sir Astley Cooper's Lectures an extraordinary case of a man, who in consequence of an accident was perfectly insensible for many months, and afterwards regained his usual health. This man, while on board a ship of the royal navy, in the Mediterranean, fell from the yard arm, and when picked up immediately afterwards, was found to be insensible, he lay on his back, breathed, had a pulse, and some motion in his fingers, and eat food when put into his mouth, but in all other respects he was apparently deprived of all powers of mind, volition and sensation.

The vessel after this went to Gibraltar, and he remained in a hospital there, for some months, still

insensible. He then was put on board the Dolphin Frigate and taken to a depot for sailors at Deptford, in this island, and he remained there for some time, when the celebrated surgeon, Mr. Cline saw him, and on examining his head, found a slight depression of bone on one part of his skull. Thirteen months and some days after the date of the accident, the portion of depressed skull was removed, about one o'clock in the middle of the day, at four o'clock of the same day he was sitting up in his bed, and could answer some questions, and in a few days he was able to tell where he came from, with all particulars of his life. But for thirteen months and some days, he had remained in perfect oblivion, in short as Sir Astley remarks, "he had suffered a complete death, as far as regards his mental and almost all his bodily powers," but by removing a small portion of bone pressing on the brain with a saw, he was at once restored to the proper exercise of all the functions of his mind, and almost all the powers of his body

Having shown by this example that mental operations in man, are immediately connected with a sound and active brain, we next enquire, whether brutes have reason ?

Any one witnessing the habits of the horse, elephant, dog or monkey, must admit they possess a something which cannot be explained by the term "Instinct" which as Paley expresses it, "Is a propensity prior to experience, and independent of instruction." (Paley's Natural Theology, c.. xviii.) They possess memory, are capable

of being taught, know their masters, recollect those from whom they have received kindnesses or injuries, and frequently revenge themselves for the latter; in proof of this, is the account of an elephant belonging to a gentleman, who was accustomed to see fed with a certain allowance of grain daily, business requiring the gentleman's absence from home, he confided its care to a worthless keeper, who stole and appropriated a large portion of the grain intended for the elephant's use; the poor animal daily grew more and more spare and feeble, missing his usual abundant feast; the gentleman returned, hastened to his stable, and observing the emaciated state of his favourite, was at a loss to discover the cause of this evident alteration: the poor elephant delighted at his master's return, trumpeted his welcome, raised his trunk as a salaam, and turned about, affording every demonstration of joy; his feeding time approached, and the full allowance of grain was placed at his feet by his dishonest and cruel keeper. The elephant industriously separated it into two distinct heaps, and having eagerly devoured the one, left that which remained, and walked quietly to the opposite side of the stable. The truth of the dishonesty of the keeper at once flashed upon the mind of his master, and the keeper on being accused of the theft, and finding his unworthiness exposed, fell at the feet of his employer acknowledging the crime.

We also read in the British and Foreign Medical review, ofsome horses kept in a field, who were supplied with water from a trough, which was filled by a pump,

if the trough became empty, one of the horses, learned to supply himself and his companions by taking the pump handle between his teeth and working it with his head; the other horses who were less clever or more lazy, finding this one had the power of supplying their wants, would teaze him, by biting, kicking, &c., until he had pumped for them, and would not even allow him to drink, until they were satisfied.

I will mention one more anecdote, that may be familiar to some of my audience: a sparrow finding a nest that a swallow had just built, possessed himself of it, a thousand swallows came full speed to assist their relative, and attacked the sparrow, but the latter, by presenting his hard bill at the orifice of the nest, was invulnerable, and made the boldest of the swallows who approached, repent of their temerity. The swallows disappeared for a quarter of an hour, and the spectator of this fact judged those birds had abandoned their undertaking, but on the contrary, they quickly returned to the charge, and this time they made use of stratagem, not force, for each of them had procured a little of that tempered earth, with which they make their nests, and and they all at once fell upon the sparrow, and in a short space of time, enclosed him in the nest, by plugging up the entrance into it with the moistened earth.

It will be enquired then, how do men and brutes differ? If they both possess mind and reason, what distinction do we draw? Is it a mere difference in power and capability, or do men possess a something

superadded; I believe man only differs (in this respect) from the brute, in having a larger share of that portion of the brain which produces the reasoning faculties, in fact, we meet with individuals of the human species, as idiots, in whom there is a less manifestation of mental power, less capability of cultivation and improvement, and who are in many respects inferior to some of the higher class of the brute creation.

Before tracing any further the analogy that exists between the human being and some of the higher class of animals, and to enable you to comprehend the views I am about to bring forward, as to the exact position of the nervous system, in which the powers of producing reason and instinct are specially located: it will be necessary that I should give you a short outline of the principal doctrines Anatomists have formed of that system.

A diagram was here exhibited, shewing the position &c. of the nervous masses producing reason and instinct; they may in some measure be explained by the following:

Brain.
- *Cerebral Ganglia* — *Centres of operations of Will and Intelligence.*
- *Sensory Ganglia* — *Centres of the operations of the Instinctive Actions.*

Spinal Marrow — *For the movements of the Trunk and Extremities.*

The Cerebral Ganglia and the Sensory Ganglia form together the nervous matter included within the skull, and bear the common appellation of the brain, distinct from the spinal marrow: the use of the latter being for the ordinary movements of the body, independently of the will—but at the same time under its immediate direction and control.

You will have remarked then, that an extensive tract of nervous matter exists at the lower part of the human brain, as well as that of many other animals, which is quite distinct from the true brain or cerebrum, *i.e.* that part productive of mind, both however are included within the walls of the skull. As we proceed, we shall find that the emotional or instinctive actions, are dependent upon this centre of nervous matter, which is called the sensory ganglia, and as I have stated, placed intermediate, between the brain and spinal cord.

As we descend from the higher to the lower class of animals, for instance, from man to insects, we gradually loose the indications of intelligence and will, as the sources of the movement of the animal, whilst we see a corresponding predominance of those which are commonly denominated instinctive; and in examining the comparative anatomy of the nervous system in the higher class, (Mammalia) we find that portion, termed the sensory ganglia gradually increases in size, whilst on the other hand, the cerebral hemispheres, or that portion which we have described as productive of mind or intelligence as regularly diminishes in relative size and importance, as we descend from this class of animals to the lower, from these again to birds, thence to reptiles, and from these again to fishes, until at length we arrive at a class of animals in which there is not a rudiment left of brain, but only that part of the nervous system left, which appears to be similar to the sensory ganglia in the higher class, viz :

that part productive of instinct; and in watching the habits of the creatures composing this class we accordingly find, that they shew nothing exhibiting rational actions.

Diagrams of the Cerebral Ganglia and of the Sensory Ganglia of the bird, fish, and insect, were here exhibited, to prove the gradual diminution of the Cerebral Ganglia, (or intelligence) in comparison with the Sensory Ganglia, (or instinctive actions) as we descend the scale from the bird to the fish, and lastly to the insect.

Busts of men of sound mind, as well as busts of idiots were also exhibited, to shew the difference in size of the Cerebral Ganglia, although it is very probable from anatomical data that the Sensory Ganglia might not vary much in each; we may infer from this, that in the human being in different individuals the intelligence differs more than the instinctive actions.

From experiments made by Flourens, Magendie, Hertwig and others, it appears that not only reptiles but birds and some animals may survive for many weeks, or even months, after the removal of the whole brain, and that notwithstanding this mutilation, they possess the power of keeping their equilibrium; if a pigeon thus mutilated be laid on its back, it rises again, if pushed it walks, if thrown in the air it flies, if food be placed in the mouth it swallows

The condition of such a bird seems to resemble, says Dr. Carpenter, that of a man who is in a slumber, sufficiently deep to have lost all distinct perception of external objects, but who is still conscious of sensations, as is shewn for instance, in withdrawing the body from an uneasy position.

Now in ordinary sleep, the cerebral ganglia or brain proper, as well as the sensory ganglia, or that part connected with the instinctive movements, are at rest, but the spinal system is required to be in full and complete activity, if it rested for one moment death would immediately follow; precisely the same takes place in a person suffering from the disease called apoplexy, here also the spinal cord remains perfect, since breathing and swallowing, which are dependent upon the spinal nerves, are not affected.

Sometimes sleep is not so profound as entirely to suspend the consciousness of the individual, and various movements take place tending to relieve uneasiness produced by various causes; in this condition, it seems not improbable that the sensory ganglia are in some degree awake, at the same time, the brain, or more correctly the cerebral ganglia, being asleep, the mind of the individual is not able to discern the cause of the uneasiness, and therefore not able to remove it.

Further, whenever dreaming takes place, it is evident that, the cerebrum, or brain proper, is partially awake or active, and the mind from this cause is hence disordered, thus delirum in typhus fever, or some forms of insanity, where a portion of the brain is disordered have considerable analogy to dreaming.

To shew how each portion of the nervous system has an independent action, peculiar to itself, and yet at the same time to prove that frequently one as it were, supplies the place of another, in consequence of the

occurrence of disease, or other accidental causes, I may mention that, the ordinary movements of human beings are guided by what is sometimes called the muscular sense, that is by a feeling that comes to us through the sensory nerves, connected with any particular muscles used--the absolute necessity of this, will be best shewn in relating to you a case of a woman who had suffered from disease, complete loss of sensation in one arm, but who still retained the movement of the limb; this woman found that she could not support her infant upon her diseased arm, without constantly looking at the child, and that if she were to remove her eyes for a moment, the child would certainly fall, in spite of her knowledge that the infant was resting upon her arm, and of her desire to retain it. Here, the muscular sense being entirely deficient, the sense of vision supplied its place; so long as it was exercised upon the subject, but as soon as this guiding influence was withdrawn, the strongest will could not sustain the muscular contraction to prevent the child from falling from her arm.

Again, persons who are born deaf and dumb, (generally speaking) have no malformation of the organs of speech, but they are incapable of uttering distinct vocal sounds, or musical tones, because there is no guiding conception of the tones to be uttered, which in other people, is learnt by the sense of hearing. By long training, and by efforts directed by the muscular sense of the organ of voice itself, viz: the larynx; some persons thus circumstanced, have acqui-

red the power of speech, but the want of sufficiently definite control over the muscles of the voice, is at all times very evident in their use of the organ.

The instinctive and rational actions are sometimes so blended, that it is difficult at first to assign to each its specific character, for what in the first instance is performed by the will of the individual, after a time may by constant habit, cease to require the effort of the will, but movements of the body are excited into action by external sensations, similar in fact to those we observe take place in instinct, for instance, we know from common experience, than in walking along an accustomed road, we frequently occupy our minds, by some subject that engrosses our whole attention, and yet our limbs continue to move with perfect regularity, until we at length, are surprised by finding ourselves at the place of our destination, or perhaps at some other place, which we had not intended to visit at the commencement of our journey, but to which long habit has conducted us; or again, we are all aware it is possible to read for a long time without having in the least degree comprehended the meaning of the words we have uttered. Dr. Percival, in his essay on Habit, relates (what medical men would style a good case) an anecdote of a snuff-taking countess, in whom, when seized with a fit of apoplexy, irritation of the nose with a feather, produced an immediate contraction of the fore-finger and thumb of the right hand, the established habit of which, I need not explain, at least to the snuff-taking part of my audience.

From these illustrations it seems evident, that if we examine into the condition of man, either in disease or in health, we find two modes by which his actions are governed, one being by the direct control of his reason, the other manifesting itself independently of will ; and we further find, in corroboration of this, that two nervous centres exist, for the use of these several operations.

The actions of man under the influence of disease, when consciousness is absent, appear very similar to the instinctive movements of the insect, and like the insect are directed solely for his preservation, these we may regard as the instinctive actions, or the instinct of man.

We therefore conclude that man and the beast that perisheth, both possess reason,* and that this reason is the production of, or is dependent upon the integrity of that portion of the body included under the term cerebrum. The instinctive actions in man are best observed during early life, before the reasoning powers are well developed; in the brute creation, they are apparent at all periods of their existence. That the brute enjoys a smaller amount of the reflective powers, whilst on the contrary his animal propensities, and many of his discerning and observing

* There can be no doubt besides the susceptibility of an individual of a particular species of cultivation, the race itself may be improved in successive generations by a gradual process of education--thus all sportsmen are aware of this fact, and the greatest care is exercised in procuring dogs for breeding purposes, those being selected whose ancestors have been known as dogs of a first rate description.

faculties are proportionately larger is very evident, for instance, a dog frequently remembers places much better than his master, his sight, hearing and scent, are also generally stronger than man ; a writer of last century upon this subject observes, " the bird repairs a shattered nest instead of constructing a new one. The hen who has been robbed of her eggs, changes her place in order to lay the remainder with more security. The cat displays both care and artifice in concealing her kittens ;" again, it is evident that, on many occasions, animals know their faults and mistakes, and correct them; they sometimes contrive the most ingenious methods of obtaining their ends, and when one method fails have recourse to another, and they have moreover without doubt, what Paley would call a " compensation" for language, for the mutual communication of their ideas. How is all this to be accounted for unless we suppose them endowed with the powers of perceiving —thinking—remembering and judging. They have these powers indeed in a degree inferior to the human species, and form classes below mankind in the graduated scale of intelligent beings.*

Many instances might be advanced to show that they have such faculties.

Mr. Youatt, in his work on the dog, relates a surprising instance of mental culture in this animal, which

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* The correspondence between the mental faculties of the chimpanzee and those of the human infant, of between two and three years old is very close.—CARPENTER'S ZOOLOGY.

was witnessed by the editor of the Lancet, and goes far to prove that dogs possess a mind capable of improvement. Two dogs of the Spanish breed, belonging to M. Leonard, a French gentleman of independent fortune, who was his own instructor of the dogs, were exhibited to the writer. The respective names of the dogs were Philax and Brac. M. Leonard spoke to the dogs in French, and among a variety of performances, he placed cards of different colours on the floor, and sitting with his back to the dogs, directed one to pick up the blue card, and the other the white, varying his orders rapidly, and speaking in such a manner, that it was impossible the dogs could have executed his commands, if they had not a perfect knowledge of the words, for instance, M. Leonard said "Philax, take the red card, and give it to Brac, and Brac, take the white card, and give it to Philax," the dogs instantly did this. He then said, "Philax, put your card on the green, and Brac, put yours on the blue," and this was instantly performed. Upon bidding, they brought pieces of bread, meat, cards, but did not attempt to eat or touch them unless ordered; Philax was then ordered to bring a piece of meat and give it to Brac, and then Brac was told to give it back to Philax, who was to return it to its place, Philax was next told he might bring a piece of bread and eat it, but before he had time to swallow it, his master forbade him, and directed him to show that he had not disobeyed, and the dog instantly protruded the crust between his lips.

M. Leonard invited a gentleman to play a game of dominos with one of them, the dog seated himself in a chair opposite the writer, six dominos were placed on their edges in the usual manner before the dog, and a like number before the writer. The dog having a double number took one up in its mouth, and put it in the middle of the table, the writer placed a corresponding piece on one side, the dog immediately played another correctly, and so on until all the pieces were engaged; other six dominos were then given to each, and the writer intentionally played a wrong number. The dog looked surprised, stared very earnestly at the writer, growled and finally barked angrily; finding that no notice was taken of his remonstrances, he pushed away the wrong domino with his nose, and took up a suitable one from his own pieces, and placed it in its stead. The writer then played correctly, the dog followed, and won the game, and it was impossible that the slightest intimation could have been given by M. Leonard to his dog, moreover, the instruction of his dogs had been taken up merely as a curious and amusing investigation.

The French Academicians mention an instance of a dog learning to speak, he could in an intelligible manner call for tea, coffee, chocolate, &c.; the philosopher Leibnitz attests that he heard the animal talk in this way. The dog was said to have been taught by a little boy the son of a peasant.

We read in Haydn's life, that a parrot (taught by himself), sung and spoke several languages, this bird

was sold after the composer's death at a public auction for 1400 florins.*

The examples we have just quoted are for the purpose of illustrating the existence of reasoning powers in certain animals, we will next say a few words on the erroneously received doctrine, viz : "Instinct guides the brute, Reason guides the man," which is for the most part held by those who consider mind and soul to be identical. Our endeavour thus far has been to demonstrate, that man and the brute, not only both possess Reason—but both possess Instinct—and that this also depends on, and is a function of the Nervous System. It comes earlier into operation than most of the powers of the Brain, and this may be one cause why it is assigned an independent existence in the lower animals. A good illustration of the fact that different parts of the Nervous System are

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* Innumerable anecdotes might be related in proof of the intelligence of Animals, the reader may possibly recollect more surprising instances than are here stated. Lord Brougham authenticates many extraordinary cases. Jessie, Youatt and others have also added an immense mass of facts on this head, a writer in Chambers's Journal observes, "did he (Man) take a more true and benevolent view of the animal nature, and treat it on the same simple principles of justice and kindness which he is taught to display towards his fellow creatures, he would find his own interests immensly advanced by it. The docility and social feelings of the animals would be more strongly developed than at present; their services would be more heartily rendered; and man would himself be improved by the reflection of better feelings from these humble creatures.

The Poet Pope says, "Histories are more full of examples of the fidelity of dogs than of friends."--Moore's Life of Byron.

gradually developed, or rather come into use, as the infant grows into the adult, might be observed in the production in the talent for learning music; we all must have witnessed that many of the powers of the brain, such as language, memory, &c., are for some years in operation before the child shews any desire or even capability of learning music, and in those instances in which the talent for music has in after life been very remarkable, we often find the taste for it has been exhibited at a proportionately earlier period than in those who only possess an average endowment of this faculty, probably on account of excessive developement of that part of the brain producing the musical genius. Thus Mozart was only three years old when he displayed his talent for music,* at four years of age, his father began to teach him, at five he composed, and at six years of age he performed in public at Munich.

Haydn was only six years old when he performed. Handel in his infancy amused himself with musical instruments, and would steal away to play them secretly, and before he was seven years old he had made considerable progress as a first rate performer.

Having said so much on the combination of rational and instinctive actions occurring in man as well as in certain other animals, we further find as we descend the scale of animated nature, that there are certain classes of beings who exhibit few actions excepting those that are purely instinctive—perhaps a good example of a purely instinc-

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* Life of Mozart---Haydn and Handel translated from the French of L. A. C. Bombet, 1817.

tive operation might be given in the common Honey Bee ; it belongs to a class that shew little indication of intelligence. The Bee builds a cell on mechanical principles that could not be improved by an animal possessing any amount of intellect whatsoever, but why or wherefore it thus builds, it doubtless is perfectly ignorant ; that it is purely Instinctive may be known by the fact, that all bees perform the same actions alike, all their actions tend to one common end, simply because they are performed in respondence to impressions which all alike share, or as the * celebrated naturalist Huber remarks, *that "although bees act geometrically, they understand neither the rules, nor the principles, of the arts which they practise so skilfully,* but on the other hand how different is this from a class of animals in which we observe a higher degree of intelligence, for in them we remark greater degrees of variation in the characters of each individual belonging to the class, for instance any one knows that there are stupid dogs, and good tempered dogs—as there are stupid men and clever men—ill tempered men and good tempered men. But no one could distinguish between a stupid bee and a clever bee—or between a good tempered wasp and an ill tempered wasp—simply because in these insects all their actions are prompted by an unerring instinct implanted in each individual, and not upon a mind capable of improvement.

Some animals that have been reclaimed from the wild state, often exhibit actions that are probably instinc-

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* Nutt on the Management of Bees.

tive, and after the succession of many generations still have not lost the peculiar habits of their original state; and we are often puzzled and surprised with actions in our domesticated animals, which are nothing more than the manifestations of the original instinct implanted by the Creator, but the necessity of their use, has been superseded by domestication. We are all of us familiar with the peculiar habit dogs have, when intending to lay down, of going many times round before choosing the precise place they intend to place themselves. (They do this even on the hardest floor). It has been suggested in explanation, that in their natural wild state, dogs take up their night quarters in fields of tall withered grass, or among reeds and rushes, and thus by wheeling round, they separate the grass or rushes in the spot where they intend to lie, so that they form in fact a bed with over-hanging curtains all around for their protection and warmth—therefore, after the lapse of centuries we witness the manifestation of the original implanted instinct, but now become of no use in consequence of domestication.

Hitherto the distinction we have drawn between Man and Brutes has been only one of degree; the great difference now remains to be shown, and it is in that superadded gift revealed to us by Scripture, that the Creator breathed into man the breath of life, and man became a living soul;* of this, the brute posseses not a vestige nor

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* This being said of no other creature leads us to conceive not only that the soul of man is a distinct thing, of a different original from his body; but that a more excellent spirit was put into him by God (as appears by its operations) than into other animals.--
Bishop Patrick

a trace. It is by virtue of this gift alone that man exists after both his body and all its parts and functions perish, that it is independent and separate from the animal body, and it is this spirit alone that continues to exist after both the body and mind are converted into dust, for from dust he was formed, and unto dust he shall return.*

In examining the subject of Reason and Instinct I have been guided by anatomical enquiries, as well as by the evidence derived from watching the habits of man and the lower animals. The views I am induced to entertain concerning the nature of the soul, are principally derived from the writings of an old divine of great learning and piety, viz: Mr. Dodwell, who upon an examination, from scriptural authority alone, was led to the following result, viz: that man being formed out of the dust of the earth, had from that no other life but such as brutes have, which obliged him to return to the dust again: that it is evident from many sources that man's body is naturally mortal: that God breathed into him the breath of life, which must not be mistaken for common life, both from passages in the Old as well as in

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* "Flesh and blood cannot inherit the kingdom of God."

1 Cor., 15 c. 50 v.

Again we read in 2nd chap. of Acts, v. 31, that a peculiarity in our Saviour's death was "that his soul was not left in hell, neither did his flesh see corruption."

When the vital parts fail, there can be no further prolongation of life: when the frame of man's body shall thus be dissolved: then shall the dust, of which it was formed, return to the earth, and the soul or spirit shall return to the God who gave it.

Bishop Hall.

the New Testament, but to be the spirit; and by this breathing alone man became immortal.*

So that it is this breathing of God, and not any animal operation common to human souls with those of brutes, (not even their reasoning about sensible things), that entitles human souls to live after their bodies. This supposes the soul not to depend on the body, as that of

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* Mr. Dodwell being a member of the Church of England, his arguments have naturally a leaning towards his own peculiar religious views, I shall therefore touch only on that part of his treatise wherein he adduces reasonings, from Divine authority, to prove that all men (Heathen and Christian) are naturally born mortal, but are rendered immortal by the breath or spirit of life given to Adam, as shewn in the second chapter of Genesis, verse 7. This argument is condensed by Mr. Brokesby, in his life of Dodwell, (page 566) into the following compass.

Mr. Dodwell concludes, 1st from 1 Timothy, vi. 16. that God is He ὁ μονος ἐχων ἀθανασίαν, who only hath immortality--that he alone is ἀγέννητος καὶ ἄφθαρτος, who has ζωήν ἐν ἑαυτῷ that nothing else can be immortal, but as it derives its immortality from him who is αὐτοζωὴ."

2ndly "That God created Adam out of the dust of the earth, and then breathed into him the breath of life, and he became a living soul." This supposes, that (1st) he was formed out of the dust of the earth; that he had from that no other life, but such as brutes have, which obliged him to return to the dust again. (Genesis, iii. 19.) Had nothing further been added by God, he would have been perishable as beasts, nor could this principle have secured him from actual mortality, so that he could not have survived the dissolution of the body. As for his body 'tis evident that it is naturally mortal: otherwise there would have been no need of different sexes in order to the propagation of mankind, as there will be none at the resurrection."

brutes doth, and to perish with it, but to be a Flatus, a breathing of God, and to continue so long as God is pleased to continue his breathing.

Wherefore if this interpretation of scripture be correct, it is most probable that the reasoning faculties and instinctive actions of man, are similarly produced as

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3rdly "God superadded his Afflatus--God breathed into man the breath of life, (called the spirit of man) and then he became ψυχή ζῶσα. All which answers the Greek translation, according to the Septuagint version. Καὶ ἔπλασεν ὁ Θεος τὸν ἄνθρωπον, χϑ῎ν ἀπο τῆς γῆς, καὶ ἐνεφύσησεν εἰς τὸ πρόσωπον αὐτϑ῎ πνόην ζωῆς, καὶ ἐγένετο ὁ ἀνθρωπος εἰς ψυχῆν ζῶσαν. Here is a man supposed before God's breathing--if a man, then not a dead man, which is indeed no man, but one animated with the lower soul, common to him with beasts, and not to be imputed to a Divine breathing. But the breathing gave him, the honour, which (according to the Psalmist) distinguished him from, and exalted him above the beasts that perish. As by the former he had an animal life, and that only: so by this breathing he became superior to all other visible animals.

Mr. Dodwell asserts that in the Greek Text two words are used to denote two kinds of spirits, one word which is called spirit in our translation is simply termed ψυχή the other termed ψυχή ζῶσα the latter is called the spirit of man, being the same as the breath of life spoken of in Genesis, 2nd chapter verse 7, hence it is also said in Ecclesiastes, 3rd chapter, verse 21, who knoweth the spirit of man that goeth upward, and the spirit of the beast that goeth downward to the earth?

The ψυχή he argues is material, like the streams of odoriferous bodies, being the same as that referred to the beast, in the verse just quoted, the ψυχή ζῶσα, immortal, having proceeded directly from God, yet both these are to be distinguished from the spirit of God, which he believes from various passages in the New Testament is obtained alone by our Saviour's incarnation.

those of the lower animals, and like them will perish at death, but that the soul was an additional gift to man after he had already enjoyed ordinary life.

Thus far I have ventured into theological discussion on the nature of the soul, having therefore described the relation which reason and instinct bear to the animal economy, and also having shewn how they both respectively differ from each other, and how they both are distinct from what we understand by the term soul, I must now bring this subject to a conclusion.

I trust my explanation from physiological experiments, as well as from common observation have sufficiently demonstrated that reason and instinct are dependent upon a living state of nervous matter, but how they proceed from it we know not. This no doubt is a mystery none will be able to solve, but that they are, directly influenced by the integrity and developement of the Nervous System there can be no question.

The views I have promulgated concerning the nature of the soul, are to many I dare say new ; did they not proceed from a man of great learning and of the strictest piety, and depend on the best of all authorities viz : the sacred Scriptures, I should not have advanced them here, but as they harmonize so beautifully with the results of the investigations of the Physiological enquirer during the last century, and as they moreover convey a clear and distinct notion of the nature of the soul—of its direct procedure from the Deity himself, of its being given alike to the meanest as well as the most noble of our species, to the ignorant and learned, to the

heathen and christian, we arrive at the conclusion, that mental qualifications and instinctive actions are perishable at death, but that the soul throughout eternity,* to use the words which Addison has put into the mouth of Cato,

> " Shall flourish in immortal youth,
> Unhurt amid the war of elements,
> The wreck of matter, and the crush of worlds."

We cannot conclude this Lecture better than by shortly tracing the progressive developement of the child to maturity, in doing which I shall again quote Dr. Carpenter.

The first actions of the infant are evidently of the purely instinctive character, and are directed solely to the supply of its physical wants, after a while, the dormant powers of the mind are called into exercise, and the simple processes of association with its concomitant memory are actively engaged during the first months of the infants life, at the same time an attachment to persons and places manifests themselves; as the infant advances in age, the powers of observation are strengthened, the perceptions become more complete, the powers of reflection and causation are called out, which prompts him to reason upon what he observes, and he performs

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* Dr. Wells in explaining the passage in Corinthians " with what bodies the dead shall come"--observes, that at the resurrection we shall not have such bodies as we have now, for " flesh and blood" that is, our bodies in their present natural decaying, mortal state, are not adapted to taste or enjoy the spiritual pleasures of heaven."

actions resulting from more complicated mental processes, until at length the higher intellectual and moral endowments begin to manifest themselves, especially those relating to an Eternal Being; and, may we not regard these as here existing as the types of those higher and more exalted faculties which the human mind shall possess, when purified from the dross of earthly passions, and enlarged into the comprehension of the whole scheme of creation, the soul of man shall reflect, without shade or diminution, the full effulgence of the love and power of its Maker.