

INSTINCT AND REASON.

BY REV. T. E. R. STEBBING, M.A.

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AN initial probability has been established by Mr. Darwin and Mr. Wallace that the reason or mind of man, as well as his body, has attained its present complete excellence through gradual development. No one denies that, between a man's birth and his prime of life, time is required for the intellectual powers to unfold, but it demands an effort which few have as yet made to see in this progression of the individual mind a compendious history of the indefinitely slow process by which the human mind itself has been formed, passing upward, step by step, from simple vitality, dawning consciousness, the various grades of so-called instinct, to the full capacities of the most enlightened reason.

The theory of development or evolution has excited immense opposition and distrust, because of its obvious application to the human body: its application to the human mind, which, though less obvious at the first glance, almost inevitably follows, seems to have inspired Mr. Wallace himself with alarm. He winds up the admirable series of essays in which he supports the theory under discussion with one that earnestly propounds "the *limits* of natural selection as applied to man." His arguments on this subject are drawn from physical science, though his mind is evidently and even confessedly swayed throughout by other than physical considerations. He represents, in fact, and endeavours to reconcile to his own scientific views, the weight of popular prejudice which has hitherto condemned those views with some vehemence of opposition.

The sentiment in question amounts to this, that certain powers or faculties of the human mind are so wonderful and so unique, that they could not have originated in the ordinary processes of nature without some special intervention. Antecedents conforming to the usual observed order in other living productions are not sufficiently magnificent for the soul of man. . . Something sudden, something mysterious, is

demanded in the agency of its creation. It must be like Pallas Athene, springing from the brain of Zeus, a goddess fully armed from her birth in the panoply of wisdom and virtue. Yet the whole feeling thus to be described of what is fit and worthy must be accredited, as we desire to show, simply to prejudice. Nothing can really depend for its intrinsic grandeur upon our knowledge or ignorance of its origin. A single cause instantaneously producing its effect does not make the result in any way more admirable or magnificent than the like result coming at the close of an indefinitely extended chain of causation. Feelings of surprise and wonder are excited when we find that ten thousand copies of the *Times* newspaper can be printed within a single hour, but the same feelings move us in the granite-yards of Scotland, when we learn that many months are required for cutting through a single block. At the first proposal of railways, a pace of twenty or five-and-twenty miles an hour was thought too wonderful for belief, while now, from familiarity with far higher rates of speed, we think it miserably slow. A child is surprised to learn that the light of the sun requires time to reach the eye, but a new and even greater surprise is aroused by the information that the time so required is only a few minutes for ninety millions of miles. The swiftness of thought is proverbial. A single act of thought is commonly supposed to be absolutely instantaneous; and yet presence of mind, which depends on rapidity of thought, is fully recognized as an uncommon quality, while it has now been ascertained by experiment that every thought requires a definite, and in many cases measurable, length of time for its production and exercise. Following the analogy of these illustrations, we may expect that the popular opinion or prejudice as to the instantaneous creation of the human mind will vanish and subside when men become familiar with the idea of its slow development. It will at least be seen that there is no special dignity and grandeur in the supposed suddenness of its introduction into the universe. The general scheme of nature, so far as we can penetrate its working, seems to show that there is some proportion observed between the time spent in producing and the perfection of the thing produced. Religion itself is an unquestionable witness to this method of procedure. There is no great religion of which the adherents claim to have had it revealed to them from the first in its full perfection. What is true of religion is true of all arts and sciences. Their progress has been gradual. The great-

ness of nations, even when it seems to blaze forth in history most suddenly, ever finds its true origin in numerous steps of slow preparation. A hardy, frugal tribe of warriors is nursed in some obscure mountain cradle. The struggle for existence fosters their preservative virtues. A line of rulers is evoked, forced by the circumstances of their tenure to acquire, as their leading qualities, cunning, prudence, self-control, fertility of resource, promptitude of action, till at length the hour and the man coincide, and a handful of barbarians give their name to a great empire. The same rule prevails with languages, and the literatures that adorn them. So fully is this established in regard to literature, that men who examine the subject deeply are almost led to disbelieve in originality of genius altogether, from the invariable indebtedness of the noblest authors to the thoughts and imaginings of earlier minds. There is, therefore, no antecedent improbability that can fairly be pleaded against the gradual development of the human mind. On the contrary, every possible analogy is in its favour. A supposition so favoured becomes at least a lawful and reasonable subject of enquiry. If it be true that the theory of evolution applies to the mind of man, we should expect to find in that mind itself traces of the earlier steps, or grades of development, through which it has passed, and also in the world around creatures lower than humanity in some sort representing those earlier stages of slowly unfolding reason. In other words, we should expect to find in human nature itself those very inequalities, that very conflict of the higher and the lower elements on which moralists so urgently insist, and we should expect to find affinities and resemblances, more or less close, pervading the whole animal creation, and exhibiting human reason and brute intelligence as, upon a broad view, one in kind, however different in degree.

The first requisite for intelligence is the possession of memory. Without this faculty intelligence is impossible; but, on the other hand, memory that does not subserve some sort of intelligence is a useless faculty; and in this the old theory of creation agrees with the new, that nothing obtains a footing in the world without a use. It may be urged that the human memory is incomparably superior to that of the lower animals; but there are surprising differences in the powers of memory among human beings, and the effects of cultivation, with the facilities for that cultivation supplied by language, should be taken into account. It is important to observe also that with brutes as with men some individuals

are quicker than others, that the memory of brutes, like our own, can be improved by training, and that its powers are not equally distributed to all classes. The dog, the horse, the parrot, the elephant, are probably not further below mankind in the faculty of memory, than they are superior in it to the oyster and the jelly-fish.

To make the most of humanity, without introducing the question of man's material form and structure, one would naturally insist upon his docility or power of being taught; upon his versatility or power of adapting various means to the same or various ends; upon his moral nature, embracing the different passions and affections, and the knowledge of good and evil; and lastly, no doubt, one would be inclined and one would have a right to insist on the grandeur of his aspirations. A crafty rhetorician would perhaps dwell on the collective value of these endowments, and then exhibit them, separately, rising to their height and fulness in men like Archimedes, and Chrysostom, and Dante. He would dare us to trace back the mental ancestry of these true heroes to apes and fishes. Yet the reason, piety, and imagination of such men are themselves developed between childhood and maturity; their very pre-eminence shows that improvement in such qualities is possible from one generation to another, and that therefore meanness of origin needs only to be coupled with remoteness in time to reconcile the supremacy of man's intelligence with its ultimate derivation from the lowest powers of consciousness.

Mr. Wallace has pointed out very clearly and conclusively the fallacious character of the evidence on which the old theory of instinct was founded. Starting with the notion that wild animals had none of that docility and versatility which man possesses through his reasoning powers, yet seeing them produce effects like those which man produces by the help of teachers or his own choice of means, we inferred the existence of as many separate faculties as there are kinds of animals. Each of these faculties was thought to resemble reason about as much as a jack-in-the-box resembles a man. The faculty came into exercise in one invariable way without any choice on its owner's part, just as the jack starts up, whether he will or no, when his lid is taken off. We wondered at the admirable contrivance and design by which these very limited faculties were adapted in each case to the wants and preservation of the species to which they belonged. At times, it is true, with some inconsistency we permitted ourselves to upbraid the goose with its stupidity; to speak

of the sheep as silly, and the ostrich as wanting intelligence; we even expunged the dodo, with its self-preserving instinct, from the face of the earth; but in spite of these slips and mischances, we still kept gaping and wondering at our own explanation of things, and calling it an excessively wise and ingenious contrivance that every species of animal should have a separate faculty to itself, when one and the same faculty for them all would not only do just as well, but a great deal better. We were far from perceiving how strong a support to Materialism our theory involved, since if the lower animals without reason produce effects like those of reason, then effects like those of reason in a number of cases beyond calculation must be the result of bodily structure. It might not follow that the effects of reason itself were the results of bodily structure, but it would become startlingly probable.

The history of domesticated animals is a continuous proof that some at least of the lower creatures are capable of learning, and how learning can be achieved without intelligence has never yet been explained and is never likely to be. But Mr. Wallace points out that we have made a gratuitous assumption, unsupported by evidence, in supposing birds, for example, to build their nests by instinct rather than by following the example and instruction of their parents. Many things, he remarks, which we ourselves are said to do instinctively, such as putting out our hands to save ourselves from falling, are acquired habits, not instinctive actions, and in fact not possessed by infants. Mr. Darwin* tells us of a species of ant which behaves differently towards its slaves in England and in Switzerland respectively. In his memorable account of the busy bee he shews that some species of bees are less clever at their work than others, and that the accuracy even of the most advanced cell-makers has been over-rated. This is the more worthy to be noted, because the same persons who are extremely zealous to set forth reason as superior in kind to what they call instinct, are yet often eager to extol the effects of the lower faculty above those of the higher. An interesting account has recently been given of baboons in the neighbourhood of the Cape of Good Hope combining to pursue, and after a chase of two days and a night successfully destroying a leopard which had invaded their haunts. Two tribes of baboons in the same locality, the occupants of separate rocky strongholds, are described as upon one occasion meeting in battle,

* "Origin of Species," p. 268.

the result being that nearly a hundred were afterwards found dead or dying on the scene of action.* The shape of the creature and the combination for warlike purposes, which carries with it such a tinge of humanity, can scarcely fail to affect the imagination. Yet these isolated instances must be far less telling than the comparison which Mr. Wallace has so ingeniously instituted between man as a builder and birds in the same capacity. The shelter of the savage is in many cases a less finished contrivance than the nest which the bird prepares for its young. The featherless biped, like the feathered one, takes the materials readiest to its digits. Generations upon generations follow one another without improvement or signs of inventive skill. Even in the days of enlightenment, and in nations which pride themselves most upon it, the human nest is repeatedly constructed without the smallest attention to comfort, health, or beauty. Men whose fathers before them have built long rows of red brick boxes to live in, build, by instinct if you will, for it can scarcely be by reason, more lengthening chains of red brick boxes. There is no reason, indeed, for supposing that the bird consults any principle of beauty in the construction of its nest, but a principle of expedience some birds certainly do consult; the orchard oriole, for example, building its nest shallow or deep, according as it is placed among firm and stiff branches, or suspended from the slender wind-swayed twigs of the weeping willow.† The fact that birds build in human habitations, and make use of human manufactures, is a proof that they are capable of choice both as to locality and materials. The often observed circumstance that animals in a newly discovered country are without fear of man, a fear which they speedily acquire from experience of his mischievous propensities, is a clear proof that they are capable of learning caution. It cannot be pretended that a caution which thus only comes in conjunction with experience is instinctive, or anything else than the result of observation, and therefore a sign of intelligent judgment. The lower animals, then, can learn prudence, can profit by experience. In the training of domesticated animals the same motives, of pleasure and pain, are applied, and applied effectually, as are used in the education of human beings by parents and schoolmasters and law-givers. This could not be if the groundwork of the moral nature were not the same

* "Good Words for the Young," June, 1870. Animal Defences. By A. W. Drayson.

† Wallace, "Essays on Natural Selection," p. 227.

in man and the lower animals. Addison was inclined to hold the old opinion that "God Himself is the soul of brutes," *Deus est anima brutorum*. "One would wonder," he says, "to hear sceptical men disputing for the reason of animals, and telling us it is only our pride and prejudices that will not allow them the use of that faculty."* And yet his charming essays upon the natural history of animals, in which he took so keen a personal pleasure, with very little alteration might be read as arguments in defence of the opinion he thus condemns. He remarks that birds, which ordinarily drive away their young as soon as they are able to get their own livelihood, nevertheless continue to feed them if they are tied to the nest, or confined within a cage, or by any other means appear to be out of a condition of supplying their own necessities. He observes that the brood-hen will leave her eggs longer in summer than in winter, because in summer they will cool less speedily. But apart from the ingenuity necessary for the propagation of the species, he considers the same bird to be a very idiot, without the least glimmering of thought or common sense, mistaking a piece of chalk for an egg, and sitting upon it as though it were one; insensible of an increase or diminution in the number of those she lays; not distinguishing between her own and those of another species; and when the birth appears of never so different a bird, cherishing it for her own.

It is curious that we should abuse the hen for being now and then deceived by our impostures, considering the immense quantities of counterfeit coin we ourselves accept as currency, and the strange compounds of chalk and mud and alum and poisonous herbs and minerals which, according to the analysts, we contentedly swallow down as milk and butter, bread and beer. But the hen in a wild state is not subject to our impositions, and possibly the domestic hen finds it better for herself to overlook them. At any rate, as the mistakes concern her progeny, if her conduct is other than beneficial, it is an argument *against* the perfection of instinct, which it tends to bring down to the level of imperfect human reason. It is commonly supposed that ducklings take to the water by instinct. And Addison tells us that on one occasion, as he was walking in the yard of his friend's country-house, he "was wonderfully pleased to see the different workings of instinct in a hen followed by a brood of ducks. The young, upon the sight of a pond, immediately

* "The Spectator," No. 120.

ran into it; while the step-mother, with all imaginable anxiety, hovered about the borders of it, to call them out of an element that appeared to her so dangerous and destructive.* In order to test the real force of nature in this matter, as distinct from experience and education, I ventured on the experiment of placing some little orphan ducklings, which had been reared away from any pond, in a shallow bath of water just deep enough for them to swim in. The experiment was two or three times repeated, but in each case with a sort of impiety, or, at any rate, gross disrespect towards the grand principle of instinct, the ducklings, instead of enjoying themselves in their appropriate element, made the most violent and unceasing efforts to escape from it. The whole theory of instinct, indeed, probably rests on a multitude of evidences which have themselves been taken for granted. At every point minute observation, or actual questioning of the facts asserted, undermines it. Addison himself must have begun to waver, before he inserted in the numbers of the *Guardian*† the French philosopher's account of the ant, and its wonderful ingenuity and perseverance. Nor are passages wanting in his works, which might have been expressly written in support of the theory of development. After commenting on the various insensible gradations of perceptive being, "If we look," he says, "into the several inward perfections of cunning and sagacity, or what we generally call instinct, we find them rising after the same manner, imperceptibly one above another, and receiving additional improvements, according to the species in which they are implanted. This progress in nature is so very gradual, that the most perfect of an inferior species comes very near to the most imperfect of that which is immediately above it." Again: "The whole chasm in nature, from a plant to a man, is filled up with divers kinds of creatures, rising one over another, by such a gentle and easy ascent, that the little transitions and deviations from one species to another are almost insensible;" and he quotes with approbation a passage from Locke, in which we read, "There are some brutes that seem to have as much knowledge and reason as some that are called men."‡ Pope, who pursues much the same track in his *Essay on Man*, permits himself to speak of "the half-reasoning elephant." Any one who doubts the appropriateness of such an epithet not only to the elephant but to many other animals, should begin to study the ways and doings of the lower creatures with an eye to this very question,—at

* "Spectator," No. 121. † Nos. 156, 157. ‡ No. 513.

every turn asking himself how the action observed can be accounted for by a blind irrational instinct. A stumbling horse, for example, that is generally beaten for stumbling, starts after a false step before the lash is applied. How ridiculous will it be to ascribe to horses an instinct of starting after stumbling—a conditional instinct, that appears only in those horses that have been previously beaten when they stumbled! We need not suppose, as Lord Bacon appears to have done, that “dogs know the dog-killer” by a kind of power of divination.* By their watchful habits, and quick inference from acute observation of the few particulars they are able to comprehend, it can scarcely be doubted that dogs learn something of the dispositions and intentions of mankind, recognize their humours, and distinguish those who are friendly to themselves from those who are hostile.

Numberless writers have noticed the different dispositions of the lower animals, differing not merely in separate species, but in various individuals of the same. There has been no scruple in taking the brutes themselves as types and emblems of moral qualities. Almost every vice and virtue has been unsparingly assigned to one or other of the brute creation. They are brave or cowardly, savage and treacherous, gentle and generous, industrious, idle, obedient, wayward, affectionate, malicious, working always for the common good or full of rapacity and selfishness. It is likely enough that we often misapply these epithets, and call that courage which is only consciousness of strength, and that malignant ferocity which is really a hungry stomach and a badly-furnished larder; for such mistakes we commit also in judging of our fellow-men. But there are many beautiful instances on record in which dumb creatures have shown themselves capable beyond question of faithful friendship, and therefore as possessing at least the beginnings, if not any high advancement, of a moral nature. None perhaps is more beautiful than that told by Henry Brookes, a writer of the last century, about one of the lions in the Tower of London. A little spaniel picked up in the streets was thrown into the cage of the largest of these beasts, called for his size the king’s lion. “Immediately the little animal trembled and shivered, and crouched, and threw itself on its back, and put forth its tongue, and held up its paws, in supplicatory attitudes, as an

* Natural History, § 985. “It is a common experience that dogs know the dog-killer; when, as in times of infection, some petty fellow is sent out to kill the dogs; and that though they have never seen him before, yet they will all come forth, and bark and fly at him.”

acknowledgment of superior power, and praying for mercy. In the meantime the lordly brute, instead of devouring it, beheld it with an eye of philosophic inspection. He turned it over with one paw, and then turned it over with the other, and smelled to it, and seemed desirous of courting a further acquaintance. From this day the strictest friendship commenced between them, a friendship consisting of all possible affection and tenderness on the part of the lion, and of the utmost confidence and boldness on the part of the dog, inso-much that he would lay himself down to sleep, within the fangs and under the jaws of his terrible patron."

The sequel of the story is pathetic. To tell it briefly, in twelve months the little spaniel sickened and died. The lion at first supposed him to be asleep, but finding that all his efforts to awaken him were in vain, he was filled with intense anguish, would not allow the dead body to be removed, refused all sustenance or comfort, spending his time between rage and grief, till after five days of such an existence, one morning he was found dead, with his head lovingly reclined on the carcase of his little friend.*

Were this only a fable instead of an actual incident, there is nothing in it revolting to our sense of probability, because we are perfectly aware that the lower animals constantly give indications of what in ourselves we call the moral feelings. We continually see them behaving as we ourselves behave when we submit to self-sacrifice for the sake of those we love.

We see many animals in possession of laws and constitutions answering to our own in all but one particular, namely, that theirs appear to be fixed while ours are continually changing. But most likely we overrate both the fixed character of theirs, and the instability of our own. Changes in the politics of an oyster may easily escape the notice of a man in the midst of some vast revolution (as he thinks it) of human affairs, some vast revolution which proves in the end to be nothing more than a change of names. For mankind the acquisition of language has indefinitely quickened the movement of ideas, but where language is without the aids of writing and printing, as among savage tribes, and where the language itself is an imperfect instrument of thought, the same routine seems to prevail from generation to generation. Fashion in dress changes but slowly when the dress itself is nothing but a girdle; and the fashions of the

* See "Knight's Half-Hours with the Best Authors." No. 185: from "The Fool of Quality."

mind change with as little facility when ideas and wants, and the means of expressing the one and gratifying the other, are all alike few and extremely simple.

So simple are the wants and ideas of the savage, so little above those of the elephant and the ape, that Mr. Wallace finds himself driven to the conclusion that the savage "in his large and well-developed brain possesses an organ quite disproportionate to his actual requirements—an organ that seems prepared in advance, only to be fully utilized as he progresses in civilisation." But anything *quite disproportionate* to its actual place in nature cannot have been produced according to the theory of development. This theory therefore Mr. Wallace deems and declares inapplicable to the brain and mind of man. In support of his view he adduces several circumstances both of man's bodily and mental constitution, which he considers this theory incapable of explaining. He maintains that natural selection will not account for those rudiments of logical, moral, and æsthetic faculties which are to be found in uncivilized man; for the nakedness of the human skin, though hair upon the back would be of essential service to the unclad savage; for the absence of prehensile power from the human foot, a power which he thinks would be useful, or for those perfections of hand and voice which he thinks would be useless, to uncultivated human beings. The inference he draws "from this class of phenomena is, that a superior intelligence has guided the development of man in a definite direction and for a special purpose, just as man guides the development of many animal and vegetable forms."

In this illustration he overlooks the circumstance that man's selection is after all nothing more nor less than part and parcel of natural selection. In his argument from the various uses and powers of the hand and brain, which could have been of no service to men in a wild state, he neglects the consideration that what is selected through being useful in one direction may incidentally become useful in another. Had he employed his usual ingenuity on the question of man's hairless skin, he might have seen the possibility of its 'selection' through its superior beauty or the health attaching to superior cleanliness. At any rate it is surprising that he should picture to himself a superior intelligence plucking the hair from the backs of savage men, (to whom according to his own account it would have been useful and beneficial) in order that the descendants of the poor shorn wretches might, after many deaths from cold and damp, in the course

of many generations take to tailoring and to dabbling in bricks and mortar. In regard to the voice he makes an assertion which it is surely impossible for himself or any one else to prove, namely, that "savages certainly never choose their wives for fine voices." But upon this assertion the whole of his argument about the voice depends. And as for the stress which he lays upon the rudimentary moral and æsthetic faculties of savages, we have shown that numbers of other animals likewise have rudimentary moral faculties, while Mr. Wallace himself makes it probable that many have a taste for colour,* and that "their powers of vision and their faculties of perception and emotion must be essentially of the same nature as our own."†

Truly in one sense every variation is prepared in advance, only to be fully utilized in the future progress of the creature that varies. Every variation, I doubt not, is so prepared in advance by a superior intelligence, but under the general laws which that intelligence has ordained, and not by a special interference. The real progress of each creature, within the spheres at least of consciousness and intelligence, would seem to consist in its growing capacity for perceiving and understanding, for entering into fellowship with, beings superior to itself. In mental powers the dog and the horse become more and more like man the closer and the more continuous the intercourse. Could they learn our language or we theirs, the progress might be indefinitely hastened. In the general progress onwards and upwards, man, it may be believed, then first became the indisputable lord and chief over his fellow animals, when his reason had so far advanced that he could comprehend the idea of God, when his reason had grown into a capacity of hearing the divine voice, which since then, not by interference with physical conditions, but by intercourse of mind with mind, has led him forward step by step from darkness into twilight, from the twilight is still leading him forward, as his eyes become able to bear it, towards the beauty of the rosy-fingered dawn; and just as those of the lower animals are considered the most intelligent which make the most successful efforts at intercourse with man and at serving him, so, by a true analogy, may the philosopher deem those men and those races of men to be furthest on the path of enlightenment who know most of God and serve Him best.

* "Essays on Natural Selection," p. 248.

† Ibid. p. 128.