

**Turriff:**  
**THE DEVERON PRESS**  
**1916-2016**  
**[www.theveronpress.scot](http://www.theveronpress.scot)**

**Was Darwin Right**

**By**

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*The following paper, first published as *The Crowning Glory of the Victorian Era*, and long since out of print in its pamphlet form, is issued at the present time because of the interest in Darwinism aroused once again by Sir Arthur Keith's address to the British Association.*

*Although born at Oldmachar, near Aberdeen, Arthur Keith was brought up at the farm of Kinnermit on the other side of the valley from where I write. The farm would be visible but for the belt of trees on the opposite side of the road. The family is still referred to as the clever Keiths of Kinnermit, But Sir Arthur's views are by no means accepted with favour in the town and district, any more than farther afield.  
J. L.*

The crowning glory of the Victorian era was the promulgation of the theory of evolution, which, by tracing the ascent and gradual differentiation of all life from the most lowly and primitive forms of organization, opened up endless vistas of attainment for all sentient creatures.

This discovery of an implied great terrestrial future for mankind is usually and deservedly associated chiefly with the honoured name of Charles Darwin. As a matter of fact, it was almost simultaneously discovered and announced by a number of thinkers. It was even anticipated by Robert Chambers, whose intuitive, rather than scientific, 'Vestiges of the Natural History of Creation' showed that he had the central idea of the evolution theory even if he had not the facts to prove its validity. Those facts were patiently and modestly marshalled by Darwin and to a less extent by Dr. Alfred Russel Wallace. The extent to which both writers could draw upon the facts and ideas of others in specific departments showed that the same idea was working more or less in many different minds. In his noble threnody, 'In Memoriam,' Tennyson, ten years before the appearance of 'The Origin of Species,' wrote:-

They say

The solid earth whereon we tread  
In tracts of fluent heat began,  
And grew to seeming-random forms,  
The seeming prey of cyclic storms,  
Till at the last arose the man;

Who throve and branched from clime to clime,  
The herald of a higher race,  
And of himself in higher place,  
If so he type this work of time

Within himself, from more to more;  
Or, crowned with attributes of woe  
Like glories, move his course, and show  
That life is not as idle ore;

But iron dug from central gloom,  
And heated hot with burning fears,  
And dipt in baths of hissing tears,  
And battered with the shocks of doom

To shape and use. Arise and fly  
The reeling Faun, the sensual feast;  
Move upward; working out the beast,  
And let the ape and tiger die.

Even the terminology of Darwinism was to some extent ready to Darwin's hand when he wrote 'The Origin of Species,' first published in 1859, and he was able to quote from Herbert Spencer the expression 'Survival of the Fittest' which he uses as an alternative title to his chapter on 'Natural Selection.'

### *The Difference It Made.*

What is it, then, that distinguishes the theory worked out by Darwin from the numerous similar theories propounded or hinted at by his forerunners. Shortly it is this. Pre-Darwinian evolutionists assigned no sufficient motive-cause for the progressive development in which they believed, whereas with Darwin and Wallace the sufficient motive-cause was the Struggle for Existence and the necessity of the organism adapting itself to its environment or going under.

'What is the meaning of the expression "the quick and the dead?"' asked the teacher. 'The quick is them as gets out of the way of the motor cars; the dead is them as

doesn't,' was the answer of the boy. This is a familiar and up-to-date illustration of how the theory of natural selection has worked. The mylodon, the mastodon, and the megatherium were not quick enough to find their food or to elude or overcome their natural enemies, including man. The result is that they are all three of the dead, the extinct. With unconscious remorselessness, Nature has preserved the species that are quick to run or fly from danger, swift to descend on their prey, powerful and fierce in the fight with enemies, hardy and adaptable under stress of climate or enforced change of habitat.

And as it was the swift, the strong, the fierce, and the hardy that lived, so it was they who transmitted their characteristics; and the swifter, stronger, and fiercer the races became, the swifter, stronger, and fiercer they would become.

#### *The Graces as well.*

But natural selection preserved the graces as well as the thews and sinews. The male chose the best of the females of his own species, often after having fought with and killed a rival claimant for her hand. Thus Darwin quotes the observation of M. Fabre, who had frequently seen a fight between two males of the hymenoptera, the lady sitting by, 'an apparently unconcerned beholder of the struggle,' and after the fight retiring as a matter of course with the conqueror. Darwin describes alligators as 'fighting, bellowing, and whirling round like Indians in a war dance for the possession of the females.' Male salmon, he says, have been seen fighting with their hooked jaws for whole days; and the male stag-beetle bears wounds from the mandibles of other males. And although the male birds win their mates mostly by their gay plumage or their greater power of song, the cock pigeon beats off his rivals with wing and beak and sheer hustling with breast and shoulder.

#### *Making Fit for Success.*

The consequences of this struggle for food, for mates, for safety of life itself must necessarily be the steady perfecting of the qualities that make for what in the human sphere is called 'success in life.'

The endless ramifications of the struggle for existence are made vastly interesting by Darwin. Among much else that is curious and important in the economy of Nature, he indicates the dependence of the red clover on the humble bee which fertilises the flowers with pollen. Hive bees are too short in the body to penetrate to the nectar in the recesses of the red clover, and consequently they do not visit it. Deprived of the pollen carried by the bees, the clover is not fertilised. Heads of red clover that were experimentally protected from the visits of bees did not produce a single seed. But the existence of the humble bee is itself dependent on immunity from the visits of

field-mice, which attack the honey and destroy the comb. The existence of the field-mouse is in turn dependent on the number of cats; and an investigator found that in the neighbourhood of villages and small towns the nests of humble bees were much more numerous than in less populous parts, which he attributed to the number of the cats that destroyed the field-mice. This chain of causation, then, made the fertilization of red clover dependent on the number and activity of cats in the neighbourhood.

### *What Art has done.*

A glance at 'artificial' selection will support the case for natural selection.

Breeders of domestic animals, by mating the males and females that have the desired points in greatest perfection, can produce the type of horse, ox, or sheep they fancy. All the varieties of fancy pigeons, including birds so dissimilar as the fantail and the pouter, have been bred from the wild blue, barred rock dove. The tail feathers of the rock pigeon slope downward and backward as a rule; but the scientific breeding of pigeons has gone on for thousands of years of recorded history, and, by selecting for pairing birds whose tails spread at first slightly and then more and more outward and upward, breeders have steadily evolved tails of a greater upward, outward, and at last forward tendency, till the fantail was at last produced - a bird which, compared with the wild blue rock type, is a veritable monstrosity, a monstrosity glorying in its monstrousness, taking pride in the inverted tail, through which it puts its head with such excited zest that often, in the case of the most highly bred birds, it falls on its back. The oil vessels in the tail-feathers of these pigeons are perverted in accordance with the upward growth of the tail.

The pouter, tested by the blue-rock standard, is hardly less monstrous. It would be twice the size of the short-faced tumbler pigeon, and the characteristic which gives rise to its name is its habit of inflating its crop, and strutting with a jumping motion while proudly distending with air the enormous bag which in a state of repose hangs beneath its beak. All pigeons in cooing distend the crop more or less, and the pouter has simply been produced by mating the birds with the largest crops and bodies.

In the same way the shortfaced tumbler, which is very small in the body, short in the beak, and rounded in the head, has been evolved by the mating of small and ever smaller birds of the tumbler variety.

As an experimenter with pigeons, Darwin showed that it was possible to reverse the process by which species had been evolved. He crossed the highly specialised Barb (or Barbary pigeon) with other breeds, till he worked back in no long time to the blue rock or wild pigeon, securing the disappearance of the fleshy iris round the eye and the fleshy wattle on the beak which are both salient characteristics of the Barb.

In a few centuries the British ox in all its varieties has been bred out of recognition from a lean, long-legged beef-barrel upon four feet with which we are familiar in the showyards; and the same may be said about sheep and horses. The original Scottish-horse, a little pot-bellied garron which carried its load slung in panniers on either side, has become the short-necked, large, and powerful Clydesdale, unequalled in the world as a draught-horse.

The existence in all bodies of rudimentary, aborted, or atrophied organs affords further proofs of the mutability of species. The embryo whale has teeth which disappear at birth. Calves have a row of teeth in the upper jaw that are never 'cut.' The human face bears dormant muscles surviving from the days when our arboreal ancestors erected their ears the better to listen. The human scalp is furnished with muscles similar to those with which we raise or lower the eyebrows, and Darwin cites a case of two French families whose members, generation after generation, could twitch these scalp muscles so violently as to be able to throw off a pile of books from the top of the head. Instances could be multiplied extensively on these points.

#### *What Nature has done.*

The breeder has done much by selection in a few centuries, but nothing to what Nature herself has accomplished in the long æons of natural, including sexual, selection, in which a thousand years count but as a day. Many of the steps in the process can only be guessed at. The geological record, for one thing, is extremely imperfect. Only a small part of the whole area of the globe has been surveyed by geologists. Organic remains rarely become fossilised, and when they do it is by their being exposed to the preservative properties of siliceous elements, which have not apparently done much to preserve the many well-known species now extinct. But to the extent that the survey has proceeded it has yielded results that are entirely favourable to the theory of evolution. Many prehistoric and so-called antediluvian remains have been found in the frozen steppes of Siberia, these including mammoths not represented in the fauna of the present age.

Among the many facts which favour the theory of evolution as against the idea of special creation is the fact that the birds and beasts found on islands are always akin to those found on the nearest mainland, that the species on an island are fewer than those on a continent, that animals which cannot traverse wide oceanic spaces are not found on remote islands, and that island species tend to be peculiar and endemic.

#### *The Morality of Nature.*

Many more creatures are born into the world than can possibly live, and obviously those that survive will be those that are best fitted for the struggle. But this does not

mean that the struggle rages without help or mercy. There is sufficient of struggle to warrant the poet's description of Nature as 'red in tooth and claw.' Darwin himself spoke of the antelope having to run for its life ten times in a day. But Prince Kropotkin has shown that there is a morality in Nature too. He shows how animals co-operate for defence, the kites chasing the eagle, the sparrows turning on the hawk, the buffalo herd posting its sentinels while the rest are feeding; how they co-operate in labour, as ants, bees, and beavers; how they co-operate for surgery, monkeys picking thorns from each other's bodies and larger animals licking each other's wounds and scratching each other in places which the animal unit finds inaccessible; how they co-operate in the hunt, not merely lion with lion and jackal with lion, but the lion and the leopard together; and how they will observe each other's territory, even the tigers, which now prey upon man and his domestic animals, keeping each to his own village or district. There are laws of the jungle which protect the weak from the strong, and the animals combine to enforce them and to punish their infraction, as in human society.

### *A Gospel.*

Practically everybody whose opinion counts now accepts the Darwinian theory as to the origin of species; but by many that hypothesis is still dismissed with ribald scorn as the theory that man is descended from the monkey. As to this I would say that I have seen a range of skulls graded from those of the higher apes up through primitive man to the fully developed Caucasian head, and it would have been impossible to say where the apes skulls ended and the men's began. What Darwin's doctrine was to him during the greater part of a long life of patient study and modest statement, may be judged from the following passage. Surveying the wide field in which Natural Selection has worked, and considering Nature's methods in their length and breadth, he eloquently says:-

It may metaphorically be said that natural selection is daily and hourly scrutinising, throughout the world, the slightest variations; rejecting those that are bad, preserving and adding up all that are good; silently and insensibly working, *wherever and whenever opportunity offers*, at the improvement of each organic being in relation to its organic and inorganic conditions of life.

That is surely a gospel of vast consolation and encouragement, applying as it does to man as well as the lower animals, and to man morally as well as physically.

Before Darwin, philosophers had traced morals from a divinely implanted 'Ought.' The moral sense was held to be innate. The 'knowledge of duty' was declared by Kant to be a 'mysterious gift of unknown origin,' whereas Darwin, fully recognising that his theory would, as he said, 'lead to a new philosophy,' derived the sense of duty from the social feelings which were instinctive, not only in man, but in the lower

animals as well, though of course in varying degrees of intensity. These social instincts, he said, led 'the animal to take pleasure in the society of its fellows, to feel a certain amount of sympathy with them, and to perform various services for them.' 'The social instincts which must have been acquired by man in a very rude state, and probably even by his ape-like progenitors, still give the impulse for some of his best actions' - that is to say, for some of his most nobly self-sacrificing actions, up to the sacrifice of life itself in the interests of the community, as in the case of the Greek and Roman heroes, or merely for another individual, as in the case of the miner, seaman, or dock labourer who risks his life in rescue work. Darwin claims that this social instinct, developed by natural selection for its own sake, being useful for the wellbeing and the preservation of the species, is so fundamental that when it runs against another instinct, even one so strong as the attachment of the parents to their offspring, it gains the mastery. Birds, when the time comes for their annual migration, will leave behind their tender young, not yet old enough for a prolonged flight, and follow their comrades. These birds may instinctively feel that to remain behind with their young means the death of themselves and their offspring as well, and so the social feeling impels them in the interests of self and race preservation to leave in spite of the strength of the parental feeling.

### *Morality from Nature.*

Conscience - the Ought, 'the categorical imperative' of the pre-evolution philosophers - was, they admitted, mysterious in its origin; but they argued, in effect, that it was implanted in the individual by a single creative fiat. The evolutionist view of all sentient creatures, including man, is that conscience, the Ought, has so many varying dictates that it must clearly have been a gradual growth which has been modified by circumstances. Murder (except in war or as punishment) is viewed by the civilised man with horror, and even hardened criminals are often so pursued with remorse for the taking of a human life that they give themselves up for punishment at the hands of the law. So far is this feeling from being universal, however, that the Red Indian keeps the scalps of his victims as trophies, and the Thug also keeps tally of those whom he has murdered, while it is not so very long ago since the successful duellist plumed himself, and was admired by others, in proportion to the number of adversaries whom he had slain. Clearly, a divinely-implanted conscience could not regard the homicidal act as a virtue in one age, or in one country, and the most heinous of sin and crimes in another age, and another country. Every day we see new standards being established and acts heretofore regarded as harmless coming within the category of offences or even of crimes. Thus as I write it has just been established by the court of public opinion that Cabinet Ministers shall not buy and sell shares through a stockbroker, the accusers being men who themselves a few years ago were directors and even chairmen of railway companies and other trading concerns which had extensive dealings with the Government, as the American Marconi Company had

not and was not likely to have. Perhaps, in the process of moral evolution we shall ere long see railway directors forbidden to vote upon railway legislation, factory-owners debarred by public opinion from resisting legislative improvements in the position of their employees, and landlords from blocking bills conceived in the interests of farmers or agricultural labourers. The new canon is that a legislator shall be above suspicion of interested motives, and by way of reducing the doctrine to its logical absurdity, we need only point out that the enforcement of it would leave the affairs of the nation in the hands of those who have no interest in and no knowledge of the matters discussed and voted upon, the railway employee, the agricultural labourer, and the rest of them being equally denied direct representation on the ground of interested motives. Where disinterested members are to be found would then be the problem. The new standard which brands as an offence the supporting of a deserving enterprise with the necessary capital certainly shows that the moral sense is subject to constant and even rapid change in its sanctions!

Opponents of the evolutionary theory of morals argue that the Ought does not forbid or sanction specific acts. The morality of the Ought lies in the fact that so soon as an act is regarded as wrong the conscience of the moral man forbids his committing that act. Carrying their theory further than I have ever known them do themselves, the apologists of the intuitional theory of conscience might argue that it is not enough to set up a standard; that there will always be men and women who, with the fullest knowledge of good and evil, will shun the good and choose the evil; that knowing is a matter of the intellect, and doing or forbearing is a matter of moral feeling, in other words of conscience.

This brings us to the crux of the question, which resolves itself into a matter of social sympathy. The criminal is simply a man who is deficient in one or other or several of the social feelings. He has somehow missed his share, or some part of his share, of the full fruits of evolution; though it will probably be found that the criminal or anti-social type, while defective on one side, is the more fully developed on another. Murderers have frequently been exceedingly fond of animals, and attention has recently been called to the case of a Frenchman of homicidal mania who, while he killed many adult persons, showed great fondness for children and for pigeons, his affection for the children being warmly reciprocated. There are many reasons for believing that the man or woman of certain criminal or anti-social tendencies may on balance carry as large a proportion of the virtues as the average well-behaved citizen.

#### *Atavism.*

The evolutionist theory with respect to the murderer or other person who shows a lack of conscience is that he represents a throw-back to a remote ancestral type in whom the moral standard was not developed on a certain point or points. But this



implies that inseparable connection between specific ethics and 'the categorical imperative' which the intuitionist philosophers did not admit.

In any case it must be admitted that conscience without specific moral standards cannot be of practical use. To know that we ought not to do what we ought not to do is of little use unless the anti-social act is particularised and a healthy social sentiment aroused on the matter. Even then, most people would be more shocked to find that they had broken the law and were liable to punishment than they would be at any amount of moral reprobation from their acquaintances.

Morals have been a steady growth in which tribal opinion, public opinion, the church, and the law which crystallises public opinion, have been the all-potent formative factors, with comparatively little reference to conscience, which is itself almost entirely subject to the prevailing sentiment of the time. There was a time when even good men like Joseph Addison were very frequently the worse for liquor. They knew it to be wrong; but Society regarded it indulgently as the peccadillo of men of spirit and good feeling. But a Premier or other man of affairs who drank port to the extent that the Younger Pitt did would be impossible nowadays, so much has the social sentiment altered upon the subject of drinking and drunkenness.

### *Do Men Change.*

There are those who roundly assert that species do not change. The pictured negroes who attended upon Semiramis and Rhamses four thousand years ago are, they say, the same as those whom we see to-day. If the negro has not changed in four thousand years, why, they say; should we be asked to believe that he changes at all?

We take leave to doubt if even the negroes are the same. There are, of course, many different negroid types, and we should require to know which types are compared. What we do know is that Caucasian man changes within two generations or less, according to his food, work, and environment. The French peasant before the Revolution was emaciated and prematurely aged. To-day he is plump and lusty with good food and wine.

It is worth while pointing out that four thousand years is no great space of time from the evolutionist point of view. For the rest, a species will change only under conditions that compel a change. A period of equilibrium during which no change takes place may last for a longer or shorter period according to conditions, and the species, race, nation, tribe, or class may either improve or degenerate to extinction. Thus the aristocracy of Spain was at one time so exclusive, and there was so much in-breeding, that ugliness and decrepitude became the true characteristics of a hidalgo.

Taking a longer period, we find that, in spite of artificial city life, sedentary habits, and nerve strain, the average duration of life is longer, less sickness is experienced,

and the stature and chest measurement have apparently increased. The sword-hilts of the fifteenth century are too small for the average twentieth-century hand. Suits of armour reputed to have been worn by full-grown men are too small for the men of to-day. The stone coffins of antiquity will not admit the latter-day man. And the lowness and narrowness of mediæval doorways and seats also point to an increase in the average size of the adult human being. It is true that the height and chest measurements for the army have been successively reduced; but that only means that recruits are more difficult to secure and that the big men who in former days joined the army now join the police, and are probably bigger men than the grenadiers of Wellington were.

### *Conclusion.*

The ape and tiger are very certainly dying out in man. Cock-fighting, rat-baiting, and dog-fighting are no longer the recognised Sunday recreations of the workman. The savage street-fights of Caroline and Georgian times, at which the mob rejoiced over an eye gouged out or an arm broken, are no longer conceivable. Husbands no longer 'chastise' their wives and servants as a proper thing; and the cruel beating of children has given way to what many kind people regard as over-indulgence. A century ago the inmates of Bedlam, raving and foaming at the mouth, formed one of the stock sights of London; but the descendants of the people who gloated over this, to whom an execution was a gala, and the man in the stocks or the pillory, would be shocked and indignant at such displays to-day.

Britain, and probably other countries, are suffering at present from an epidemic of frivolity due to the fact that the great body of the people have not been educated to the proper use and enjoyment of life. But this will probably pass; for unworthy pleasure palls, humanity is eminently teachable, and it must be taught.

The great lesson of evolution, so fortifying to those who labour in the cause of humankind, is that man, having come so immeasurably far, is destined by the logic of his career to unimaginable glories of still further achievement. This does not mean that every stage in the evolution must needs be inevitable and right. Nor does it mean that the type produced by the unchecked struggle for existence will always be the ideally best. Darwin says:-

Natural selection, or the survival of the fittest, does not necessarily include progressive development – it only takes advantage of such variations as arise and are beneficial to each creature under its complex relations of life.

Given bad conditions, the bad will be the fittest to survive, as in a sewer the fiercest, strongest, and most cunning rats drive out the weaker. It is the business of civilization to correct the excesses of the struggle and to give an increasing chance to what is bright and benevolent, to what is lovely and charming and gay, so that all

may have the *debonair* gentleness which is now the attribute chiefly of the favoured few who have succeeded in extricating themselves from the press of the struggle. For the survival of the fittest, who at present are too often the coarsely strong or the merely unscrupulous, legislation, education, and improved taste must gradually substitute the Survival of the Best.

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