PROBLEMS WITH DARWIN

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A layman's misgivings

It is true that reality consists of various departments, and that no individual can be an expert in every one of them. On the other hand it is just as true that these departments are not found in complete isolation, and that any one of them may influence various others. And Darwinism indeed has implications in fields which are of great importance even to non-biologists. In addition it is necessary to distinguish between aspects which are only accessible to experts in a specific department, and what is less specialised. On certain aspects of Darwinism it is safest for a layman to hold his tongue. What, after all, does he know of matters like genes and chromosomes on the one hand and fossils on the other? In order to say anything sensible about them a study of years is required. But there is another aspect of Darwinism where it is not impossible to arrive at reliable conclusions.

Whenever any topic is under discussion it is important to know exactly what it is, and especially to avoid confusion with something else which is only partly identical with it. In the present context a clear distinction is needed between the wide concept of "evolution" and the specific theory which today is commonly known as "Darwinism". Darwin was not the first to propagate the general theory of evolution. Some Greek philosophers like Anaximander already expounded something of that nature. Darwin's own grandfather, Erasmus Darwin, was another. There was the Frenchman Lamarck, who already ventilated his views before Darwin, but whose mechanism differed from the latter's. Even today there are theistic evolutionists who agree with Darwin that living creatures originated through evolution, but who declare that the process was steered by God, and not exclusively by Darwin's mechanism. And even creationists who would not be willing for that would nevertheless admit that so-called micro-evolution took place within species. (Every human being is a proof of this, since his features differ from those of members of other races.) So Darwin was not original when he declared *that* evolution took place, but rather in his explanation of *how* it happened.

So what did Darwin actually try to do? He attempted what countless intelligent people tried to do since earliest times, namely to peep into the unknown.

Whenever knowledge of the unknown is sought, three measures usually come to hand. The procedure in a court of law illustrates these very clearly. The first method relies on *information*. Witnesses are called up with first hand knowledge of the events under discussion. Information about the past is also often obtained from ancient books. A second method uses *exhibits,* whether finger prints, or objects found in suspicious places, or fossils, or whatever. But there is also a third method, and this one is often taken for granted and hardly noticed. There is a smart term for it, namely "*extrapolation*". It is based on the assumption that certain forces which are observed in the familiar world, also operate in the unknown. And that obviously implies that the well known *limits* to the potential of such forces will also apply in the unknown. Knowledge of the *potential of forces* is one of the most valuable starting points from which the unknown may be approached. If an old gentleman with gout in his legs should inform the court that he almost caught up with an ostrich, but that, just as he was on the point of catching it, the big bird flew away and disappeared over the treetops, those present might smile indulgently in consideration of his age, but that is as much as he might expect to get from them. Why? Because they are familiar with the potential of his legs and the wings of an ostrich. In science constant use is made of extrapolation, and of this Isaac Newton is a good example. Right from his apple tree into the most distant unknown realms he extrapolated in the conviction that the gravitational force which he observed in

one of them also operated in the other. And of this method Darwin also made use. John Maynard Smith says: “It was Darwin's role to explain organic evolution also in terms of contemporary processes.” In other words, Darwin extrapolated from the common processes which we observe every day and which we imagine that we understand well enough to justify deductions. From there he argued into the unknown past in order to determine what happened there.

The well known process from which Darwin extrapolated was *selective breeding*. This method may also be called “artificial selection,” since it is a way in which man interferes in the natural procreation of any kind of animal by selecting individuals which may take part in it and eliminating the others. *Elimination* lies at the heart of selective breeding. (And obviously there is also selective cultivation of plants.) Darwin extrapolated by reasoning, “Just as I set about breeding a special kind of pigeon, so nature sets about producing new kinds of animals.” And among the various methods used for producing new varieties, selective breeding, rather than hybridisation or any other method, was the one which appeared promising as a launch pad for his extrapolation.

Selective breeding is impossible without *variation*. We are all familiar with variation in human beings. There are tall ones and short ones, lean ones and corpulent ones, and some are even more handsome than others. Now imagine that in a certain country there should be a law that the tallest men may only marry tall women, and the shortest are likewise restricted to short ones. What do you expect from this? Undoubtedly the result would eventually be a large number of giants on the one hand and dwarves on the other, with the majority in between. But variation in many areas is also very common in animals and plants, and there manipulation can be practised quite easily. A breeder of animals or a cultivator of plants has a *target* or *goal* or *future vision* in mind. And since living beings vary in many respects, they also vary in the measure in which they incline in the direction of his target. Then the breeder selects animals with a marked *incipient inclination* towards that goal, and he strives to let it incline even further and to extend it to more members of the species. Imagine that for some cranky reason or another he decides that a dog can benefit from a trunk like that of an elephant. “In fact,” he reasons, “a trunk is actually an exceptionally long nose.” But just as some people have larger noses than their friends, so there are dogs with slightly longer noses than others. So he selects the dogs with the longest noses, keeps them apart and allows them to breed with one another, without allowing those with the shorter noses among them, even if they sit howling and yapping at the gate. The nose of every dog that is born is measured, and this is the *test* which determines whether it will continue taking part in the programme. Now he is rewarded with dogs of which the noses are even slightly longer than those of their parents, and once again he selects the longest ones while eliminating the others from the breeding process. In his will he stipulates that his posterity will only inherit from him if they continue his life work. Whether this enterprise will work in practice we do not know, but if it does, there will be many *intermediates* between the starting point and the final success, with noses which gradually increase in length. “Variation,” “incipient inclination” and “elimination” are three key concepts. Selective breeding has the potential to create a posterity which surpass their parents in some respect or another. Of this Darwin was aware. Then he asked a seminal question: “Can the principle of selection, which we have seen is so potent in the hands of man, apply under nature?” And his answer was, “Yes.” And that is where Darwinism starts: with the conviction that selective breeding may also be found in nature. And this he called “natural selection” in contrast to artificial selection in which man has a hand. But essentially it works in the same way. “Natural selection is a process of elimination,” says Ernst Mayr.

But according to Darwin's theory there are no targets or goals in nature. This is seen as one of the essential differences between artificial and natural selection: *no goals or targets or future visions*, and *no foreknowledge* at the

beginning of what the end will produce. In other words: *no planning*. So what is it that steers the process in a specific direction? Why does it not merely degenerate into a mix-up?

The secret lies in the fact that certain features serve *survival*. Each increase in such a feature serves survival by keeping the animal and its posterity alive, while those in which the feature is less marked, are eliminated or at least produce a smaller posterity. Each change occurs by overcoming a *threat*. Such a threat actually performs two functions. In the first place it *tests* the product of each step in order to determine whether its owner should survive. And secondly it *eliminates* those which fall short. In the absence of such a *threat* and a *solution* to it, and then obviously the *elimination* of those which find no solution, there can be no natural selection.

Take the example of the giraffe. According to the Darwinists the giraffe was more or less of the same size as certain other leaf eaters, for example the kudu, many centuries ago. But, as in the case of man, there was variation in length, even among those which were full-grown. But among the giraffes something played a role which is absent among humans, namely elimination of the shorter ones. People are not eliminated if they are short, and the tall ones marry the short ones, and so the average length remains more or less constant. But in nature there were droughts which reduced the food supply, and while the tallest could yet reach the highest remaining leaves, the shorter ones kicked the bucket, or became so weak that they could not procreate. Actually the droughts were the *testers* of the length of the giraffes, and at the same time the *eliminators* of those which fail the test. By eliminating the short ones, the recurring droughts caused the giraffe to become taller and taller, until it became what it is today.

While the giraffe has one unique feature which serves survival, some animals have quite a few. An example which comes to mind is the chameleon. This cute little animal is hated and feared in Africa on account of its unique features. The fact that it changes its colour proves its unreliability, its revolving eyes of which one looks north east while the other looks south west makes it impossible to determine what it is thinking, the long tongue makes it unnecessary for the coward to move up to its prey, its ability to hold on with its tail proves that it actually has one foot more than honourable animals, while its slow movement is, according to an old legend, the reason why man dies. (The creator sent it to deliver the promise of eternal life to man. But the messenger wasted so much time on the way that the lizard overtook it with the message that man must die.) A scoundrel is what he is!

Darwin would probably have told a man with such accusations: “Friend, I must congratulate you on your perceptiveness and for recognising so many unique features. But where you go completely astray, is where you see everything as malice and deceit. It is not quite as simple as that. Every feature you mentioned stands in the service of the creature's survival. The long tongue helps it to catch its prey without being seen, and in this way it gets more flies into its belly. The revolving eyes make it unnecessary to move its head too much and so to attract attention and warn is prey. The slow gait with the jerky movements like a moving leaf causes its prey to think that it is in fact merely a leaf. The change of colour is obviously a form of camouflage, which is an asset to any hunter. And the clinging tail adds stability. In this way all five contribute to its survival. *Survival* is the crucial word. Remember that.”

So far we have dealt with the chameleon's five fairly unique features. But not all its features are unique. There are also many features which it shares with other reptiles, and even with all other vertebrates or with animals in general. What about them? Where did they come from? Every one of them, if we take Darwin seriously, just like the unique features, also originally appeared by serving survival, even if sometimes we find it difficult to determine how. And a feature which keeps an animal alive, is obviously in turn assured of a place in the posterity of that animal. And so the features which serve survival are retained

and developed, while those which fail to do so are eliminated.

Man finds it fairly easy to apply selective breeding, but how would nature set about it? How can it make some animals get a larger posterity than others? A good friend of mine phrased it as follows: “Fitness in the evolutionary sense is defined as relative reproductive efficiency, such that the fittest individuals are those which not only leave the most progeny, but progeny which will themselves survive and reproduce.” This means that elimination is not totally dependent on the immediate death of an individual animal which fails to pass the test. It could also operate by reducing its posterity in some way or another – even by preventing them from being born at all.

One of the less common methods which are ascribed to nature, is so-called *sexual selection,* by which certain animals are made more attractive to the opposite sex than others. It is often found in birds, where the brightly coloured males are more attractive to the females than the drab ones. Arguably that assures the most attractive males of the largest progeny, and in this way the ensuing generations become increasingly handsome. But even where this works, it stands to reason that it would benefit very few features or organs, since relatively few organs play a role in sexual attractiveness.

Another elimination process which is especially applicable to the instincts of egg-laying animals, rests on the circumstance that some eggs and little ones may be better protected than others. Theoretically insects which lay their eggs where food is plentiful would have a better chance of a large progeny than those which simply drop their eggs in any place where the larvae may starve to death or get devoured; and the same would apply to birds which build sturdy nests. But once again very few features of an animal would be influenced by this, and then mainly the instincts which are directly involved in procreation.

But there still remains the most common elimination process which nature could employ, and that is the one which played a role in the theory about the giraffe, namely the *early death* of the less endowed, before they manage to generate a large posterity. And although there are only a few features which can play a role in sexual selection, and not many more which may influence the destiny of the defenceless little ones, there are many which may help determine which animals will be successful in the struggle for existence. Darwinists often emphasise selection by death, almost as if it were the only method nature could employ. Darwin spoke of “one general law, leading to the advancement of all organic beings, namely, multiply, vary; let the strongest live and the weakest die.” Death is the only agent of elimination mentioned here. And to this he could have added the qualification “young” or “early.” All animals die eventually, even the strongest. But what drives natural selection is the early death of the weak, before they have had an opportunity to join in the process of procreation.

When Darwin refers to strong and weak, it should not be taken as referring to muscular strength. A tall giraffe which survives is not necessarily physically stronger than a shorter one which dies. In this context “strong” actually means “well equipped in the struggle for survival.” At a later stage the more appropriate word “fit” replaced the “strong.” This expresses more precisely what is meant. But although Darwin's “strongest” may be an unlucky choice, his “die” expresses exactly what he means. Death is the only eliminating factor mentioned in his “one general law.”

Prof. Richard Dawkins provides us with a vivid description of what would have happened in the reputed evolution of the eye, and once again death is the only method that he mentions. He says if we assume for argument's sake that 1,000 genetic steps were required to produce the eye from a bare patch of skin, then it means that there were 1,000 branch-points along the way. At each such point some animals survived by incidentally choosing the road leading to better eye-sight. On the other hand “the wayside is littered with the dead bodies of the failures who took the wrong turning at each of the 1,000 successive choice

points." Note that although the evolution mentioned occurred in the interest of the *eye*, the wayside is not littered with dead eyes, but *dead bodies*. Natural selection can indeed cause part of an animal to evolve, but it is unable to kill part of the animal and leave the rest alive. If an animal's eye is not good enough, the entire body has to pay up. And death should occur at every step, for unless the unfit are eliminated, they will simply draw back posterity to the status quo. And although it does not necessarily mean that all the unfit should perish every time, at least such a considerable percentage should be eliminated that it will have an effect on the next generation. What a bloody massacre! And actually it would have been even worse than Prof. Dawkins describes, for the eye consists of various parts, and every part would have to evolve through a massacre at every slight modification. Here, for example, one animal would lie dead because its iris was not up to scratch, and there would lie a victim of the cornea or the retina, and so forth. What happened in the case of the eye (or part of it) would obviously also hold for the ear and the nose and the lungs and the liver and the teeth and the toenails and the tonsils and all the other hundreds of organs which became what they are by means of natural selection. Each would leave a large number of dead animals along the wayside at every step in its evolution. Else there would be no evolution. Think again of Ernst Mayr's words, "Natural selection is a process of elimination." Where elimination is wanting no natural selection takes place, and that applies to every step. And usually it happens by death. So the first requirement for natural selection is *variation*. And to this should be added the indispensable *threat* and the *test*, and the *victory* by some members of the species, as well as the *defeat* of others which leads to *elimination*.

But now a crucial question has to be faced: could the features have evolved *consecutively*? Could they as it were fall into a queue like people in the post office, each waiting for the one ahead of him to finish before he starts his own business? For instance, could the lungs have evolved up to the point where they are today, and only then did the first signs of a liver appear? Could every evolving feature or organ wait for the one ahead of it to reach perfection before venturing its first step on the evolution ladder? Alas not. Theoretically it is indeed possible that some organs could have started developing earlier than others. But they do not function independently in rendering their services. What would sturdy legs avail in the absence of eyes to see where to walk? What is the use of outstanding teeth in an animal without a digestive system? A powerful heart would be worthless in a body without veins and arteries and blood. There must have been an enormous amount of *simultaneous evolution* of different features, or a stage would be reached where a quarter of the organs would have been as developed as they are today, while there was not yet a trace of three quarters. And what would such an uncompleted animal do on earth? The indispensability of *large scale simultaneous development* of features and organs should never be lost sight of. We may indeed isolate the development of a specific feature in order to pay special attention to it, but if that makes us overlook the mass of other features which would have to develop simultaneously, we have lost our way. Every time we read how some feature or another evolved, we should ask ourselves whether the author gives any hint that he is aware of the numerous other features which would have to pass through this process at the same time.

But as if deciphering the origin of the various *physical features* according to this theory were not sufficiently perplexing, there is something else to which we have already alluded: it is claimed that *instincts* also announced themselves in the same way. An instinct is a kind of inner urge to do something which appears as if it has been planned, but which does not rest on foreknowledge or reasoning and has not been learnt from the example of others.

If finch eggs are taken from a nest and incubated under canaries in a large cage, the little ones grow up without every seeing a finch nest, and without ever learning from observation that mating should take place. And yet they mate with

one another when they are full grown, since they experience an inner urge to do so. But there are more urges. Although the finches have received no information on the expected outcome of their mating, they build nests in time like those of their ancestors, although they were still inside the egg shells when they were taken from the nest, and consequently have never seen one. And the female lays her eggs inside and incubates them. Who told her to do that? Instinctive actions are neither learnt nor planned. There are numerous simple instincts, like the herd instinct which urges animals of the same species to stay together in large numbers. And there is hardly an animal which lacks the flight instinct when danger threatens. But in order to witness instincts in their full glory, follow a bee to its nest and behold what is going on there. As if it is not sufficient that a host of instinctive actions are performed, there is labour division among the various members. There is food for thought.

Darwinists also explain the origin of instincts with natural selection. Those animals which were blessed with an advantageous instinct left a large posterity, while those which lacked it or possessed it in smaller measure, followed the downward path. For example, those animals with an underdeveloped flight instinct discovered too late that discretion is the better part of valour, consequently they produced fewer little ones than those which took better care of their safety. The chickens of birds which built weak nests were defenseless and were eliminated. But the posterity of those which fled in time or built sturdy nests grew up to flee or build sturdy nests in turn. And consequently to produce young ones which would once again flee or build sturdy nests.

But something should be added to whatever has been said so far. After Darwin's time it was discovered that apart from normal variations like difference in length and the rest, there are also *chance mutations*. It is sufficient to note that such a mutation is the result of a mistake which occurs in the genes of an animal. It may indeed be caused by some external influence, like chemicals, light rays or radio-active rays, but its nature and the time of its appearance are in no way determined by the nature of a need which has to be solved. If a certain ray should cause ear lobes to become larger, it is not because at that point in time there is a demand for larger ear lobes. If the animal does indeed benefit from them, it may thank its lucky stars, but that is sheer coincidence. In fact, such a chance mutation is usually deleterious in nature. Now it may be reasoned that profitable mutations could also have occurred from time to time, and that natural selection could then have taken over by causing them to develop further. But since mutations take place by chance, it means that chance is invoked on a large scale as problem solver, and the more this is done, the less opportunity is there for rational thought to take place. As soon as something inexplicable arises, someone might say, “Behold: it was a chance mutation.” But Darwin was persuaded that normal variation could provide a basis for evolution. If chance in the form of mutations needs to be called in to help where normal variation is inadequate, it amounts to a rejection of his theory.

Now that we have looked at mutations, we may attend to a common objection against a layman who harbours misgivings against Darwin's theory, namely that he does not know enough, and that consequently it is impossible for him to reach his own conclusions.

Although such an objection apparently has certain merits, a distinction should once more be drawn between evolutionism in general which includes everyone from Anaximander to the theistic evolutionists, and Darwinism, according to which natural selection is the sole mechanism of the evolution process. Evolutionism in general is just not the subject of discussion at present. We are dealing specifically with the potential of natural selection.

We have noted that two things are essential for natural selection, namely *variation* and *elimination*. What determines these two aspects of the evolution process?

What makes animals vary? What causes some puppies to be smaller, slightly different in colour, and more aggressive in temperament, than others of

the same litter? That leads to the action of the genes and other factors which determine mutation and about which the layman would usually act wisely not to express opinions. Variation is determined in the hidden depths where even experts need special instruments to penetrate.

It is quite different with the elimination aspect. Elimination is largely determined by an animal's interaction with its environment. It operates in the hunt, where the fastest predators catch more prey and the fastest prey escapes, where the giraffes with the longest necks survive the droughts, the otters with the largest amount of webbing between their toes catch more fish than the rest, and the chameleons which are best camouflaged against their background devour the largest number of insects. And in this area the layman is no stranger. Although he may be no biologist, he is not completely ignorant of animals, their habits, their way of living and dying. Although he may not express himself as an expert, he feels free to ask questions and in certain instances even to arrive at his own conclusions.

Now what are the problems in connection with Darwin? At least five questions introduce problems with Darwin's theory that evolution by natural selection was the *exclusive* process which was responsible for the origin of all the important features of *all* living beings. One of them makes it very hard to accept his theory, and four render it totally impossible – for me at least.

Problem 1:
Would the service be sufficient?

Darwin spoke of consecutive steps, each of which renders service in the evolution process, and he described them as "finely graduated." With each step there is an addition to some feature or another which causes individual animals to survive or procreate better than others of the same species. Prof. Richard Dawkins says if anyone finds it hard to believe that the entire evolution process consisted of such steps, he may give his faith a stimulus by imagining them as very small. "However improbable a large-scale change may be," he explains, "smaller changes are less improbable. And provided we postulate a sufficiently large series of sufficiently graded intermediaries, we shall be able to derive anything from anything else, without invoking astronomical improbabilities." Now undoubtedly he has a point, but there is also another point. The valid point is that it is indeed less demanding to imagine that a small step *occurred* than a big one. But on the other hand it is far more difficult to believe that a small one had a *significant effect*. I may find it easier to imagine that a giraffe's neck increased with one millimetre per step than ten centimetres. But on the other hand I find it far more strenuous to accept that an additional millimetre made a notable difference to the number of famished giraffes, than the more substantial addition would have done. The consecutive steps each had to deliver considerable immediate service by conquering a threat which eliminated the less endowed animals. Whatever was acquired in this way had to be heritable and it had to spread to the entire species. In other words, the smaller the step, the easier to believe that it took place, but the more difficult to believe that it played such an important role. But if this is a bit vague, we may proceed to the impossibilities.

Problem 2:
Where is the reconciler?

There was once (in the land of fairy tales, that is) a most eccentric king who had a great admiration for cats, and who decided that all the cats in his kingdom should display certain identifying features. They had to have very long tails as well as very long ears and noses. They had to have a sharper sense of smell than any other cat, and they had to hear and see better. And when they mewed, it had to be so melodious that it would put insomniacs to sleep. And he added more demands, until there were twenty features in which every cat in his kingdom had to excel. Then he dispatched twenty breeders, each of whom had to see to it that one of the features became part of the feline population by way of selective breeding. Each one had to select those cats which

already excelled in regard to the special feature which he had to promote, and eliminate the others, whether by death or sterilisation or isolation.

The breeders set to work with a will. But right on the first day there were ructions when one breeder rejoiced on identifying a cat with an exceptionally long tail, and another insisted that it had to be eliminated on account of its poor eyesight. It soon came to light that the best soprano had a very short nose. And it continued like this. Each champion in one respect fell short in some other. The breeders threatened to come to blows with one another, and the king was greatly perturbed at the prospect of becoming the first monarch of a catless kingdom. He could not understand what had gone wrong, until a wise counsellor offered to enlighten him.

"You see, your Majesty, a cat is very much like a human being. Now if you consider the population of your country, you will discover that the best athletes are not necessarily the best pianists. The most intelligent women are not always the most beautiful. Even in a school you will find that a pupil who is very good in languages may be weak in maths. You will have to go very far, your Majesty, to find a genius or champion in any field who does not perform below average somewhere else. Excellences are distributed independently or at random, and where one of them appears has no connection with another."

So what was the problem then? The problem was that excellences are spread among cats as among humans. Only in very exceptional instances would a cat meet all twenty requirements. Every single one was inferior in some respects, and so every single one had to be eliminated in order to allow champions in that respect to prosper. The need to reconcile the interests of one evolving feature with every other one could not be met.

But what does that tell us about Darwinism?

Whenever attention is paid to evolution in general, it should be kept in mind that in fact it consists of numerous separate evolutionary processes. It would probably be impossible to calculate the number of features and organs which would have to evolve simultaneously, but merely imagining the scope of the process should give one an idea of the implications. While the chameleon displays five features which distinguish it from other animals, each of which would have had to originate by way of natural selection, all the features which it shares with other animals probably amount to something nearer five hundred. Add to this all the animals which posses features which are absent from the chameleon.

While the eye, as described by Prof. Dawkins, was on its slaughtering spree, without regard for the evolution of the other organs, what was the ear up to? It could only have done the same. It would also have to evolve by scattering dead animals along the wayside. And the liver? And the kidneys? And the teeth and the tongue and the toenails and the tonsils? And the eyebrows and all the other hundreds of organs which had to evolve? Did each one not undergo its own evolution and carry out its own massacre? And since they could not develop one by one in a row, they mostly had to perform their massacres simultaneously. Every animal which takes part in the evolution process chooses – as Prof. Dawkins describes it – the way either to further development or elimination at every choice point. How many inevitable eliminations would not have been required!

There is no such thing as general fitness. The random distribution of fitnesses is found with all animals, as among the king's cats in the silly little story. It may indeed happen that two fitnesses are linked, as when one is dependent on the other. (Speed may be coupled with leg length and so forth.) But the great mass of features are spread at random. When Darwin said the strongest must live and the weakest must die, there was something which slipped his mind, namely that for all practical purposes every strong one is weak in some other respects where evolution would be required. And this means that every individual animal which is fit to survive the evolution process on account of a specific outstanding feature, would be unfit on account of certain other evolving

features and would be eliminated. And so each one would get a turn to die. And whoever has died in the interest of one feature, cannot rise again to come and help with the evolution of another one. They would all lie scattered along the wayside. And none more dead than Darwinism itself.

Problem 3:
Where is the early service?

A farmer keeps various animals on his farm which earn their living by performing tasks. But since he has a future vision, he also keeps alive and protects very young animals with a view to the task which they will perform one day. "Watch this little foal," he announces, "One day it will pull the plough. And this little calf is going to fill the buckets with milk. Even this little kitten, which you might think is merely here to amuse the children, is going to make life miserable for the rats." Now someone might ask whether this type of protection with a view to the future, which applies during the *life span* of certain animals, could not have an equivalent during the *evolution process*. Could nature not, for example, say, "Give this useless little swelling or outgrowth enough time, and one day it will become a most useful organ."? Lamentably not. Darwin says *each* step should be of service to its possessor. And a step invariably renders its service before the next step is taken. And that includes the early steps. Each step, from the first to the last, renders service by helping to make a difference between life and death or ensuring a copious posterity in some other way, before the next step. This service is the driving force without which the evolution process would grind to a standstill. And it consists in the elimination of the unwanted, often by death. In this respect the important word "each" should never be allowed to slip from memory. And unfortunately for Darwin's theory there are many examples of stages where an additional step would be of no advantage. This is especially obvious at the beginning of the reputed evolution of a specific feature, before the critical point has been reached where service may commence.

This does not apply to all reputed developments. A short additional increase would undoubtedly have helped the giraffe quite as much at the beginning of the lengthening of its neck as at the end. But in numerous instances a critical point first has to be reached before a further development could be of any value.

According to Prof. Dawkins the eye evolved from a light sensitive patch. We shall return to this patch, since it raises quite a few questions. At the moment it would be sufficient to wonder of what benefit the first patch of this kind would have been to its possessor. What service would the patch render without which its possessor would not be able to evolve any further? Why should the first patched ones survive better than the unpatched? It might indeed have caused a feint tickling when struck by light, or an itching, or even a slight pain. And what then? How would anything inside the possessor of the first light sensitive patch recognise it as an indication of the proximity of danger or of food, and know what to do about it? If the effect was irritating, it might have caused it to prefer dark places or to turn the patch away from light. But why should there be more food or fewer enemies in dark places, since at that stage neither its enemies nor its prey possessed patches with which to distinguish between light and darkness? For if the patch could not lead to action which made a difference between life and death right at the beginning, it could not have played a role in natural selection at that stage. It would first have to reach a critical point where it enabled its possessor in some way or another to recognise its prey or its foes.

But let us consider something which is not actually part of the eye, but which is intimately connected with it, namely the *eyelid*.

A friend of mine suffered from Bell's palsy which made it impossible to shut his left eye. He had to go about with a wet cloth to apply the necessary moisture. If anyone should wonder why this was important, it is only necessary to refrain from blinking the eyes for a while, or just to blink them partly, which would have

the same effect. And yet the fish has no eyelids. Under water it does not need them, and if it is taken from it there are more urgent problems than burning eyeballs. If we descended from the fish, we must have acquired the eyelid somewhere on the way, and according to the Darwinists this must have happened in small steps, with victims lining the road. But what vital difference could the first small steps in the evolution of the eyelid have made? When 90% of the eyeball was still uncovered, how much better was that than having no eyelid at all? And when 25% still remained open? You may determine what that would have been like by only covering three quarters of your eyeball every time you blink. In other words, of what use were all the little steps before the last few which covered the eye completely? Only at the end would a point of usefulness be reached.

The hippo enjoys the extraordinary ability to shut its nostrils and even its ear passages under water. But how much water did they keep out when they could only shut halfway or even three quarters of the way? And if the apparatus for blocking the passages was of absolutely no help then, how did they originate, and how did they evolve further?

Consider the fish once again, for it lacks something else which we have. A fish has no knees or elbows in its fins. For every elbow or knee or knuckle or any other joint to have originated, a rigid bone had to divide at some point. In order to divide it had to become weaker there, for instance by becoming thinner than the rest of the bone. But if this had to occur in small steps, the process would offer no advantage for many generations, since the bone would still be unable to bend. For a long time each joint would be nothing more than a place in the bone which was becoming increasingly breakable. And what vital advantage would a weak bone offer above a strong one? And in addition a kind of hinge would have to be added step by step. It boggles the mind.

The elephant can get hold of something by gripping it between the upper and lower parts of its snout. But how did it acquire this prehensility? The upper and lower parts must have developed the ability to approach each other. But when they started developing this ability, they could still not grip anything between them. A critical point first had to be reached where they could get hold of something useful, before natural selection could take over. What brought them to that point?

And the length of the nose offers the same problem. Only after a critical point could it benefit from lengthening. The trunk has to bend double for food as well as for water. Before it reached the stage where this became possible, of what advantage was the length?

Or meditate on the pitcher plant which catches insects. If it evolved from a leaf which slowly changed into a pitcher, how many insects would it have caught when it was no more than a rolled leaf? What service did the early steps offer? Would the flies not have laughed at it?

The Venus fly trap catches its prey by bending double in a jiffy. What could it catch when it could only bend partly and very slowly? Not even one percent of a fly.

On internet I came across an explanation of the early stages in the evolution of feathers. But a question which not one of the authors answers, is what vital advantage the initial steps in such a development bestowed which benefited the fortunate animals and scattered the vicinity with the corpses of the others.

This problem was noticed quite early. Even in Darwin's time the palaeontologist G.J.Mivart asked, “What would be the utility of the first rudimentary beginnings of such structures?” Darwin, however, did not consider this an insurmountable problem. Quite recently Prof. E.C.Olson expressed it as follows: “One of the kinds of puzzle that has often plagued students of evolution relates to structures which have evident functions once they are completely formed, but which would seem to have no use whatsoever during the time of formation and integration of the parts.” He applies it specifically to the origin of wings. In the case of insects, for example, he admits that there exists almost no information on the evolution of the ability of some of them to fly. “It would appear that in an ancestral type

some flaps or folds appeared on segments on the back of the head. Two pairs of these developed into wings. It may be supposed that, when they originated, these folds had some other function, but what it may have been has not been even guessed." But is there any other animal where such folds play a vital role?

Prof. Olson's "some other function" lays the finger on attempts which are sometimes made to explain problematic cases by pointing out that natural selection can take place in two or more phases with each phase solving a different problem. It may be compared with a train which travels from Cape Town to Pretoria and which is hooked to a different locomotive after each section, or with the mail coaches of days gone by which required a fresh team of horses after a certain distance. It is admitted, for example, that at the beginning of its evolution the elephant's trunk could make no contribution towards bringing food to its mouth. But, it is then asked, is that the only service a lengthened nose can render? One author mentions the possibility that a slightly lengthened nose could have boosted the animal's sexual attractiveness, or it could have strengthened its sense of smell or the volume of its trumpeting. After attaining a certain length in order to satisfy one of these requirements, the nose started bringing the food and then evolved in order to do it better.

The problem with this explanation is that it does not make the situation any simpler, but rather more involved. The survival of no other animal in the African bush is dependent on one of these three provisional functions of the nose. How would chance not have to be taxed if precisely the one species which, on account of the size and form of its mouth, would at a later stage require a very long nose in order to reach its food, previously had need of a more moderately long nose in order to fulfil a function which no other animal needed.

Undoubtedly numerous similar examples may be found of developments which could render no service during their early stages, especially among the internal organs.

Problem 4:
Where is the threat?

At each step natural selection depends on certain animals succumbing to a threat and being eliminated, while others of the same species overcome it thanks to a slight advance in the evolution of some feature or organ or another. The task of the threat is to eliminate the inferior animals which retard progress in the evolution process.

But now there are certain threats which, were they to appear in a specific geographical area, would inevitably endanger an entire group of species which would be equally vulnerable. And if it should be claimed that a specific feature of one species should be attributed to this threat, but it clearly did not influence other species, we have once again struck a mystery.

The giraffe once again. Even if fossils could be unearthed of giraffes with all the intermediate necks from the shortest to what it is today, that would not yet prove that natural selection was the sole mechanism responsible for its evolution. Picture an early giraffe of approximately the size of another sizable leaf-eater, for example a kudu, with a neck and legs like one of them. This is what the *proto-giraffe* should have looked like at one stage according to Darwin. But between this archaic form and the present giraffe there must obviously have been a mass of *intermediate* forms which gradually increased in length as the droughts eliminated the shorter ones. These intermediate forms were not yet tall enough to survive all the droughts, so they had to kick the bucket or become unable to procreate, while the taller ones survived and their posterity continued increasing in length until they produced our present giraffe. And yet the intermediate forms were all much taller, and consequently in a much better position to survive, than the kudus and the zebras and the impalas and the little duikers and all the rest which never evolved in length at all. How is it possible that the intermediate giraffes died because they were too short, while the far shorter species were oblivious to the droughts? When they were already far

fitter than all the other leaf eaters, they still had to die, while the members of the even less fit species were presumably blissfully unaware of any problems. But the fact that the smaller species did not all starve to death simply proves that the droughts which were needed to goad the giraffes into natural selection never occurred. There was no threat of elimination which could make natural selection possible.

It would be enlightening to wonder about other examples of animals with outstanding features whose origin Darwinists ascribe to a role which they played in survival in the past, while other species managed famously without them. Wings are found on one mammal, namely the bat. If those bats which did not acquire long fingers with fleeces between them in the past had to bite the dust, why did it not happen to any other animals? What kind of threat was there which forced this unique development of wings on one species without endangering the others?

Or consider the otter. Undoubtedly its distant forebears could not remain under water very long, nor did they have webs between their toes, so both the ability to hold their breath and the swimming apparatus had to originate at a certain stage, with numerous eliminated otters which could not make it. But why did so many other species reveal no need of this evolution? Or go to the scarab. Those which did not experience the initial urge to form and bury mud balls, produced fewer children. And yet there are other beetles which live in dung without bothering about making balls.

Is man not another example? The human mind is so far exalted above that of the most impressive animal, that there must have been a host of intermediaries between us and such an animal. Let us call them aspiring humans, irrespective of whether they were half human or one quarter or three quarters human. And we may well ask how many eliminations were required in the production of such prize specimens as we are. But there is a further question. At least all those aspiring humans were much further evolved mentally than the most intelligent animal, like the chimp or other primate. But if all those multitudes of animals could have survived with only a fraction of the mental abilities of the aspiring humans, how is it that these more highly developed forebears of ours who were just not quite as smart as we are, were eliminated by natural selection?

Problem 5:
Where is the matchmaker?

Good matches are not only essential in marriage. Accurate coupling or coordination is indispensable in many areas, and not the least in technology. Take as an example the mighty Airbus. It is finally assembled in Toulouse, but by no means purely French, since its components come from at least ten factories in four different countries. And yet they fit so neatly, that thousands of people are willing to entrust their lives to the completed product. Now imagine that someone were to visit the factory and ask one of the workers: “Bon jour, monsieur. Could you tell me in which country the plan for this mighty aircraft was drawn up?” His informant looks somewhat taken aback. “No, there was no previous planning. In each factory an inner urge was merely felt to produce something, and then everything was carted this way, and when we assembled it, voila, there stood a giant aircraft.” If my French were better I would tell such a person that I expected more sophisticated jokes in his country.

And yet something equally preposterous would have been needed in nature if Darwinism were a fact. But few people seem to be bothered by it.

For as in the case of human inventions, successful cooperation is also often indispensable in nature. Michael Behe uses the term “irreducible complexity” for this phenomenon in the biological world, which he then compares with something far more modest than a giant aircraft, namely an ordinary mouse trap. There are only a few parts, and if any one is missing the trap will not catch a single mouse. He mentions a number of examples in microbiology which indeed sound impressive, but fortunately there are also more elementary instances in plants and animals which are no less

convincing.

We have already noted the general interdependence of organs, parts of organs and features in every animal. But the indispensability of cooperation is especially striking in the case of certain animals where two or more unique organs or features are dependent on each other in order to render service, while, since they are of different types, they would have had to develop independently up to the stage where cooperation became possible.

If I often mention the elephant, remember that it is undoubtedly one of the most difficult animals to overlook. And once more it offers an example. In the first place it needs a prehensile snout for grabbing the food, and secondly it has to be long enough to bend double and reach the mouth. Apart from the previously mentioned problems which each of these attributes would encounter on its own before it could render service, their need of cooperation offers another. If the trunk lacked either of these abilities, even if the other were fully developed, it would be as useless as a mouse trap without a spring. What profit would the elephant derive from a short nose with a prehensile tip, or a long one without it? In fact, if the nose did no more than increase in length, it would have been a nuisance by dangling in front of the mouth when the elephant grazed. And if the nose was indeed prehensile, but so short that it could only grab objects and release them again, the elephant would be able to do little more than amuse itself. During a long early period of evolution the two features, namely length and prehensility, would not be connected to each other in any way. Each would have to set off from its own incipient inclination and pass through a long period of solitary development before they could cooperate. In the absence of a preceding plan which already existed before the onset of their evolution, there would have been no connection between their separate abilities. How did they evolve in the same species? One of them could just as well have originated in the elephant and the other in the rhino.

From a colossus to a little insect which is almost as renowned as the Beatles and the Volkswagen Beetle. It is known as the bombardier beetle. This little creature defends itself by spraying a liquid at boiling point on whoever infringes on its beetle rights, and advises him rather to try his luck elsewhere. And yet the beetle is not connected to the power network. Two liquids are brought together immediately before the spraying action, and they react on each other in such a manner that a temperature at boiling point results. Obviously these two liquids have to be kept strictly apart while still in the insect's body, or the reaction would take place there, with stewed beetle as the result.

In this Prof. Dawkins sees no threat to Darwinism. The two liquids, he explains, were already present in the insect's body, where they served other purposes. "The bombardier beetle's ancestors simply pressed into different service chemicals that already happened to be around." Note the word "simply". Now how simple could it have been?

What was obviously necessary, was that the two critically correct liquids among all the available ones had to be selected and gathered in separate containers, since they cannot be ejected unless they are firmly enclosed. In whatever way this happened, the gathering, the preparation of the containers and the storage of the liquids up to this point would still be of absolutely no immediate advantage to the insect. Gathering two of its liquids and storing them in two containers would not in any way make it produce more little beetles. And these two containers had to be situated close to each other, or they would be unable to cooperate at a later stage. In addition they had to be situated in the part of the body where they may best be used for defense. For example, it would be futile if they were situated on the back. Each container needed a kind of nozzle. If the reaction had to take place inside one of the containers, it should have sturdy walls for resisting the heat and the pressure. The necessary muscles had to be supplied or adapted in order to compress the contents. Everything had to be placed under the control of the owner in order to activate it at the right moment. And to crown it all, all these things were

executed in small steps, each of which caused dead beetles to line the road. And then Prof. Dawkins says, “Simply”!

There was a promise to return to the light sensitive patch. The question was put earlier of what value it would be right at the beginning, but now we rather want to consider its construction. Michael Behe points out that the patch with which Prof. Dawkins starts, is already a very involved organ which consists of different cooperating parts. But even if we leave aside these complications, there is something else to note. According to Prof. Dawkins the patch was protected by a transparent fleece which subsequently became thicker in the evolution process and formed the transparent inside of the eye. So there were actually two patches in the same place: a light sensitive one with all its mysteries, and a more modest transparent one above it. Transparent fleeces do not simply appear on all kinds of places on the body, and I am not aware of any other such patches on the skin. Neither, however, is it merely nothing, but something. And something can only originate from something else. Nor could it have landed there from an external source, for example by being blown or smeared on the skin, for then it would not be inherited and would have no connection with the evolution process. The only way it could have originated is by a mutation which was the result of the chance action of the genes. This means that two cooperating patches, a light sensitive one and a transparent one, appeared in exactly the same spot on the body where they needed each other, by sheer coincidence. And that requires a vigorous faith to believe.

Did I say, “The same spot”? But is that the whole story? How many animals have only one eye? What would have been required is not one light sensitive patch, but *two*. And by chance they would have to be situated symmetrically. And the transparent fleeces would also have to appear symmetrically in exactly the same places.

Coincidence would actually have to do even more than that. Is there any other place on the body where the eyes would have been better situated – or even equally well – than where they are at present on most animals, which is rather high up on the front of the head? I can think of no better place. And coincidence would have to realise that.

When we consider the astronomical coincidences which would have been required for the eye to develop by natural selection from a light sensitive patch once, Prof. Dawkins places the cherry on the cake by maintaining that this happened no fewer than forty times! Forty times two symmetrical patches made a chance landing on two other symmetrical patches on the most felicitous part of the body. And that was but the beginning of the evolution of the eye.

Every animal and every plant contains essential liquids which are produced by itself, of which blood is one of the best known. But there are also animals (and even plants) which produce liquids which are not necessary for themselves, but which have an effect in the bodies of other animals, whether in their interest or to their detriment. A mammal's milk is produced for her children, the male sperm only serves a purpose in a female body, and numerous types of venom have no effect on the donor, but on the recipient. These liquids are produced by glands, and it already provides food for thought to fathom what such a gland could have produced at the start of its evolution. But the worst is coming. Not only does the liquid require a gland to produce it, but it is useless without some pipelike instrument for applying it, whether a teat or a male organ, or a hollow fang or a sting. We may refer to this as a syringe.

Obviously the first problem would be how each of these two things, the gland and the syringe, originated in small steps while it would have been unable to perform any useful function during the early part of its evolution. For example, could the gland of the wasp deliver anything useful which served the survival of the animal right at the beginning of its evolution? And what could the sting do immediately after its appearance in its earliest form?

Add to this the question of the matchmaker. How did it happen that every gland evolved simultaneously with the syringe long before they could

cooperate?

But the end is not yet, for there is still a third question, and that is connected with instincts. Even if the cow should produce a copious supply of milk and her teats were in perfect order, it would serve no purpose unless the calf knew that sucking was required.

To this may be added the very involved liquids which have no effect on any body, but which serve as material for a construction which stands in the service of the producer. The silkworm is a fine example, and so is the spider which catches its prey with threads which are stronger that steel wires of the same thickness.

As a preparation for the spider, first consider three extremely courteous gentlemen waiting at the door of a lift. When it opens, there is a problem, since each one insists on entering last. So adamant are they in their good manners, that an hour later they decide rather to use the stairs.

The spider would encounter a similar problem if its ability to spin webs had to be supplied by Darwin's mechanism.

Contemplate this creature, there where it is perched on its web, waiting for insects to make the last fatal mistake of their lives. I believe it is abnormal not to feel creepy about it. And yet you may raise your hat to the spider. While many animals have poison glands, and silkworms have a gland which can spin a thread, the spider boasts with both. You might say it is doubly glanded.

At least three involved requirements have to be met for the spider to produce its web.

In the first place it needs *glands* to produce the very special liquid which is squirted out and which forms a very sturdy thread in the open air. Spiders are also known for producing more than one kind of thread simultaneously, each one obviously requiring its own recipe.

Secondly the spider requires a kind of *nozzle* to send the liquid into the air where it may harden and form a thread. It has a syringe which works on the same principle as an enema. It also requires muscles to make it work. If different types of thread are formed, obviously more than one nozzle will be required, each connected to its own syringe.

In the third place an *instinct* is needed which leads the spider in the construction of its web. A variety of actions are required, and the web should be spun in a suitable place where insects move about which can serve as prey. I am told that a spider sometimes moves to a high point in order to test the direction of the wind before it decides where to construct its web. Various threads are used, some of which are sticky and others not, in order to allow the spider to move around on them. It does not wish to catch itself. And it should know when to use which thread.

Now it is all too easy to assume that, since these three requirements perform in this order in the spider's building operations, they also evolved in this order. First of all the glands evolved in numerous steps, with dead spiders strewn around because their glands were inferior. Then followed the evolution of the syringe and nozzle, and once again the underdeveloped spiders had to foot the bill. And when this apparatus was ready, there followed the evolution of the construction instinct, with the customary massacre at each forward step.

But unfortunately it could not have been quite as straightforward as that. Every one of the three factors needs something in its evolutionary progress which *tests* the product and *eliminates* the underdeveloped spiders. What each test has to determine, is whether the step enables the spider to catch more insects. That is simply the way in which the process of evolution works according to Darwin.

In order to test whether a step in the development of the gland was an asset, it is necessary for the product to be tested in a web. But for this both the syringe and the instinct would be required.

Next the syringe. Its quality can only be tested when the other two function well.

In the same way the instinct cannot be tested unless both the gland and the syringe operate so well that the spiders which obey the instinct are rewarded and the obstinate ones are punished.

Which all boils down to the fact that not one of the three factors which play a role in die spider's building apparatus could have evolved unless the other two were already functioning. And in their case it is not a matter of polite manners.

Anyone who desires further examples would do well to consult internet on the vast variety of carnivorous plants. The question has been asked what the pitcher plant and the Venus fly trap could have done at the beginning of their evolution. The latter's leaf can fold double in one tenth of a second. For this it would need a kind of spring, whatever it might look like. The trap shuts when two special hairs are touched simultaneously, or if one of them is touched twice. In some way or another this activates the spring. Without the hairs the spring is useless, and without the spring the hairs serve no purpose. And the leaf has pricks on its edges which serve as bars which keep the prisoner incarcerated. Without these bars even the cooperation of the hairs and the spring would have been pointless. But neither would the bars be of any value without the other two.

What could have saved Evolution?

Some of the folktales of the brothers Grimm commence with the words “In a large forest ...” The thought of a forest seems to evoke an idea of the unknown, and of unfamiliar possibilities. No doubt it makes it easier to accept tall stories. Other stories start with the introduction “Long long ago”. There appears to be a deep-seated conviction that long ago things were possible which cannot happen today. And this may well be related to the vague conviction that, given enough time, more or less anything may happen at least once. And so someone might suggest that sufficient time could save Darwinism. “Remember,” he would say, “that the evolution process did not take thousands of years, but billions. And during such a long time many things may happen. Even something which only happens every few thousand years would have occurred many times. Every feature could have evolved by one step and then waited for the next one for millennia, giving the other features a chance to take their steps without interfering with the first one.”

But what would that amount to? Elimination would still be essential. And the elimination of individuals who are inferior in one respect would still imply eliminating animals which are prime specimens in some other respect.

Nor would billions of years solve the problem of the first steps. It would just mean that the first steps are shifted further into the past; but if they were of such a nature that they did not yet serve their possessors, they would have been as profitless as ever.

Would additional billions of years offer any assistance to nature's matchmaker by making it easier for features to develop towards the point of usefulness where they may be united with their partners? What it would do, would be to increase the length of their inability to render a service.

What about those who are satisfied with something less than full-fledged Darwinism? Imagine that it could be proved beyond the possibility of a doubt that all living animals evolved from the same original organism up to the present variety. Even if Darwinism cannot be saved, would it not at least be possible to do something for a more general theory of evolution, even if it did not exclusively happen by means of natural selection? Would any problem remain?

Then we would still have to ask what could have been responsible for the evolution, since natural selection alone would have been unequal to the task.

And where should we go for help, but to our old familiar method of extrapolation? What phenomenon do we know from our own experience from which we may extrapolate in our search for something which could have driven evolution?

In other words, what would have been able (1) to make it happen in many small steps, (2) to avoid clashes among the numerous features which would have to develop simultaneously, (3) to make evolution work right from the first steps even when such steps did not yet offer any advantage, (4) to limit it to certain species, even when others had no less

need of it, (5) to bring together the different interdependent components after they had evolved independently over a long period?

I know of only one way in which this could have been done, namely by an intelligence which knew from the beginning what the end was going to be and which could have put the process through all its paces.

Confirmation for the conclusion that intelligence and foreknowledge would have been indispensable comes from an unexpected quarter, namely from Prof. Richard Dawkins.

In a book written to prove that there was no planning involved in the origin of life forms, he introduces his readers to a "computer monkey". This is a computer which has been programmed to behave like a monkey. (My own computer also often volunteers divers unsolicited monkey tricks, but this is not what is meant.) Just as a monkey which simply hits the keys without worrying about the letters which result from its action, this computer simply had to bring forth any random letters. He asks how long it would take for this electronic monkey to type a sentence of 28 letters from "Hamlet" by trying again and again. "To put it mildly," he says, "the phrase we seek would be a long time coming." This method of trying to type the sentence he calls "single step selection," since the computer monkey starts from scratch every time and makes a single attempt to type the sentence. Evolution could not have worked in this way, he concludes. But he says it is a different matter if every attempt builds on the previous one. For in contrast to single step selection there is also *cumulative selection*. Once again the same number of letters are typed at random as a start. Now the sentence is copied repeatedly, but each time with a chance mistake. After each attempt the computer examines the new product and when a letter appears which agrees with the target phrase from Hamlet, such a letter is not erased again. Then the process continues from there. Whereas the correct sentence would be "a long time coming" with single step selection, the computer completes the same task in a jiffy with cumulative selection. By extrapolating from his findings in his experiment with the computer monkey towards what would presumably have happened in nature, Prof. Dawkins reaches the conclusion that single step selection would never have got the evolution process off the ground. "If, however, there was any way in which the necessary conditions for cumulative selection could have been set up by the blind forces of nature, strange and wonderful might have been the consequences. As a matter of fact that is exactly what happened on this planet ..."

But what, in fact, are the conditions for cumulative selection? What was added to single step selection in order to make it work?

According to Prof. Dawkins himself, there was *investigation* and *choosing* on the ground of agreement with a *target phrase*. But how could the computer monkey recognise such an agreement, unless it had this target phrase stored somewhere in its bowels right from the start? And how could it have got there, unless it were placed there right at the beginning by an intelligent being who was aware of the final outcome?

We even know who that intelligent designer was. His name was Richard.

If we now extrapolate into events in nature from this experiment in which an intelligent designer played the key role, to what conclusion are we driven? Prof. Dawkins says natural selection is the only workable alternative to coincidence which has ever been suggested. That is indeed encouraging, because it means that we are spared the nuisance of any other suggestions which have to be investigated. But how workable is natural selection in the light of the questions which have been asked? And what about the alternative which Prof. Dawkins tried to rule out with his book but which he needed for the success of his experiment, namely planning by an Intelligent Designer?

It may not be easy to reach this conclusion. In certain circles tradition is very strongly opposed to any idea of intelligent design, and many concerted efforts are made to strengthen this tradition. But what else is there from which we may extrapolate in order to find

an explanation for the living world which surrounds us? I do not know of any other. The facts drive me in just one direction.

But as soon as we have discovered an Intelligent Designer who reveals certain similarities with man, for example the ability to devise plans, we should appreciate what this amounts to. For now other questions emerge, and in this case we should not put them to Darwin, but to ourselves. Let us look at a few of them.

● Since the Designer shares man's intelligence, and moreover in such a measure as to make man look insignificant in comparison, *would it be surprising if he should also share some of his other attributes*, especially those attributes of which man is most acutely aware in his clearest moments?

●Since we became aware of him by attending to his works, what else can we conclude, than that, in addition to boundless wisdom he should also possess immeasurable power to execute his plans?

●Once we have become aware of him and realise who he is, one of the consequences is that all values are determined by him. A visitor to a diamond mine may be impressed by the tons of rock which are excavated, but what is important to the owner of the mine, is the small heap of diamonds that were found. A farmer may possess a large herd of cattle, but they are insignificant to him in comparison with the little boy holding his hand. Is it by any means possible for us to determine the value which the Creator would attach to the inanimate heavenly bodies on the one hand and man on the other? And could we insist that he should evaluate each human being with our criterion?

●Although it would obviously depend on him whether he wants to use evolution, what would prevent him from only using it occasionally or even dispensing with it altogether?

●Is it for us to decide whether it would be by any means easier or more convenient for him to make major events occur over long stretches of time than instantaneously?

●Since it must have been he who originally put the most inexplicable phenomenon, namely life, in his creatures, would it in any way be a problem to him to let it return to where it was once? Or to let it originate in some other way than by the cooperation of male and female?

●Would it be surprising if the one being of which we are aware that to a certain extent it shares in his ability to plan, namely man, *should be of special significance and value to him?*

●Would it be surprising if it were *very important to him what this creature does?* As well as what he tries to do and fails to do?

●Would it be surprising if he should *want to communicate with man*, and that he should employ *more direct methods* than revealing himself in his creation? For example, would there not be a form of communication which reveals similarities with man's conversation with his fellow humans? Would it not be possible for him to speak to one human being through another?

●Would it be surprising if he who made man to share certain attributes with him, *also made other creatures* which bear some resemblance to their Creator – perhaps even in larger measure than man? And is it impossible that, like the Creator himself, they might be of such a nature *that man cannot perceive them with his senses*? In other words, is the existence of invisible spiritual beings something which should surprise man? And is it impossible that, although some were faithful to their Creator, others rebelled against him just like man? Is the existence of angels and demons contrary to what we have learnt about reality?

● *Would it be surprising if he should sometimes waive the usual laws of nature?* In fact, even some hard boiled materialists today accept that laws

operate in the quantum world which are unknown in daily life, and that something originally burst forth from nothing, in defiance of the first law of thermodynamics. Which miracle which we are unwilling to accept is greater than the creation of the universe and the living beings? Once acceptance of a Creator of the universe becomes inevitable, *what remains impossible for him?* And if such baffling events could have taken place in the distant past, is there any logical reason why events which seem impossible to us and which may be described as miracles, can not occur today?

●What prevents him from alternating deeds which appear natural to us with others which we cannot explain and which we would describe as supernatural? What are natural selection and the other mechanisms but his tools, and what prescribes to him when to use which?

●Is it impossible that he might have purposes which we cannot comprehend, and that many of his deeds as well as his omissions may be forever unfathomable to us?

One thing is certain: if we want to take the knowledge of reality seriously, not a few of us will be faced by a major reassessment of standpoints

If I were to accept Darwinism under group pressure or any other form of duress, the questions I have mentioned would come and haunt me. If I consider the facts I have mentioned calmly and to the best of my mental ability, the greatest achievement I can ascribe to Darwin is that he pointed out a process which sometimes operates in nature. I cannot force others to agree with me, and if anyone wants to bring me to different views, let him commence with the questions I have asked. Thereafter we may continue the conversation.

But finally we still only know reality in part, we are still looking through a glass, darkly, and if we only have our own extrapolations to rely on, we can only proceed as far as suppositions, and we are faced with a deep mystery, a closed door.

Unless a Witness should come from the other side to open the door for us.

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