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Synopsis of an M.Litt. thesis submitted in 1968 by James Harrison on
"The Idea of Evolution in Eighteenth and Nineteenth Century Poetry".

Some form of evolutionary theory has been current since the mid-eighteenth century, grafting a progressive element, probably taken from the emerging concept of human progress, onto an existing belief that forms of life exhibit a fixed, heirarchical order. But not until the mid-nineteenth century was a satisfactory mechanism, namely natural selection, suggested to account for the progressive nature of biological change. This enabled some to think of all forms of life as having developed by chance from the simplest beginnings. Others, such as Bergson, while rejecting a divinely ordained plan or purpose, attributed a kind of blind purposefulness to the process of development itself.

Eighteenth century poetry can display, almost side by side, ideas which are favourable or inimical to that of evolution. It was a subject for speculation, not conviction, which is perhaps why the Romantics tended to ignore it. But with the Victorians it became emotionally charged.

Prior to 1859, Browning's innate optimism led him to welcome biological and all other forms of progress; just as Meredith and Swinburne were able, after 1859, to accept the harsher aspects of natural selection as incidental to its predominantly progressive implications.

Synopsis of "The Idea of Evolution in Eighteenth and Nineteenth Century Poetry" (cont.).

Tennyson on the other hand, even before 1859, was by temperament inclined to dwell on the harshness revealed by the new geology and biology; just as Hardy found confirmation of his pessimism in the severities of Darwinism.

After 1859, however, both Tennyson and Browning were repelled by the materialistic implications of Darwinism. Similarly, though Swinburne, Meredith and Hardy accepted these implications, they found it impossible to function as poets within a strictly non-anthropomorphic, non-teleological, materialistically determinist framework of cosmic thought. All three persistently personified the forces of nature in one or more ways, thus vitiating their overt adherence elsewhere to a materialism at which Bergson had likewise balked.

James Harrison

THE IDEA OF EVOLUTION IN EIGHTEENTH AND NINETEENTH CENTURY POETRY

M.Litt. Thesis, 1968

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CHAPTER I

THE IDEA OF EVOLUTION IN THE EIGHTEENTH CENTURY

It was on the 1st of July, 1858, that Charles Darwin and A. R. Wallace read papers which briefly outlined the theory of natural selection to the Linnean Society in London, and in 1859 that Darwin published The Origin of Species. Quite rightly these dates are regarded as crucial in the long history of evolutionary thought. Nevertheless, many battles remained to be fought before even the idea of evolution was to gain anything like general assent, and further vital contributions, like the work by Mendel and others on heredity, were needed before our knowledge of the workings of natural selection could be regarded as sufficient to establish it beyond reasonable doubt as the sufficient and sole agent of biological evolution.

But if 1859 was not the end of the story, it was certainly not the beginning. Like many another scientific theory, that of evolution - even that of natural selection - had been in the air long before being precisely formulated. Behind the Principia Mathematica had lain the preliminary labours of Copernicus, Tycho Brahe and Kepler on the movements of the planets, and of Galileo and others on the nature and laws of motion. Newton, with his single, synthesising hypothesis of a gravitational pull between all bodies, proportional to their sizes and, inversely, to the distances between them, and with the mathematical

ability to work out what this implied in practice about the behaviour of apples, planets and tides (and therefore to enable the hypothesis to be tested by observation), had made a dazzlingly simple unity out of the multifarious and confused, yet wholly necessary, observations of his predecessors. And Darwin, with his hypothesis of natural selection, performed a similar, if not quite so dramatically conclusive, function in relation to the work of many of his predecessors in both biology and geology.

It is the purpose of this chapter to trace the history of these pre-Darwinian contributions to the theory of evolution in the eighteenth century. Chapter III will continue the story with the pre- and post-Darwinian evolutionary ideas of the nineteenth century. For, until we have some idea of when such ideas were making their appearance in the writings of scientists and other thinkers of the period, we shall have no time scale against which to plot their parallel appearance in literature.

In his fascinating and deeply scholarly book The Great Chain of Being, Professor Lovejoy makes out a good case for tracing the distant origins of The Origin of Species to the writings of Plato and Aristotle, though he is very far from suggesting, as some have done, that any ancient Greek could ever have thought in truly evolutionary terms, or indeed that anyone did so before the eighteenth century.

There is in Plato, argues Lovejoy, an inherent contradiction - one which he bequeathed to European thought of many succeeding centuries. On the one hand (and this does not greatly concern us here), he is the earliest and some say greatest occidental exponent of otherworldliness. Reality lies not in this physical world, but in the world of ideas of which this is an imperfect copy. Ultimate reality (God) is a kind of idea of ideas, the idea of the good. Now of the good Plato has this to say in Philebus: "The being who possesses good always everywhere and in all things has the most perfect sufficiency, and is never in need of anything else."¹ Logically, therefore, a good God would be self-sufficient and have neither wish nor need to create the physical world, or anything else for that matter.

On the other hand, the goodness of God and the existence of the physical world both being axiomatic, Plato has to find grounds within the former for the latter. "Let me tell you," he makes Timaeus say, "why the creator made this world of generation. He was good, and the good can never have any jealousy of anything. And being free from jealousy, he desired that all things should be as like himself as they could be."² Moreover, as Lovejoy is careful to point out, "'All things' here could consistently mean for Plato nothing less than the sensible counterparts of every one of the ideas; and, as Parmenides in the dialogue bearing his name reminds the young Socrates, there are

in the World of Ideas the essences of all manner of things, even things paltry or ridiculous or disgusting."³

Lovejoy has here found the origin of one of the twin premises required by his Great Chain of Being: the doctrine of plenitude. According to this, a good God incapable of begrudging existence to any form which that existence might take is bound, by his own nature, to have in fact created all possible forms of existence. The second premise, namely the principle of continuity, is like unto the first and might almost be deduced from it. To most human minds, and particularly to those living in strongly heirarchical societies, variety entails inequality. So if the variety includes all possible forms of existence, then the consequent stages or grades of inequality may well be pictured as constituting a continuous and ascending chain or ladder with no link or rung missing.

However, should deduction fail us, Lovejoy finds the seeds of the idea of continuity in Aristotle. Not that Aristotle ever propounds a continuously ascending order for all forms of life. Indeed, he points out that the multiplicity of ways in which two animals can differ from one another may well cancel each other out when it comes to determining an overall superiority. Nevertheless, it was largely at Aristotle's suggestion that naturalists began dividing and classifying animals and plants into categories or species. And he did put forward the possibility of ranging them in some sort of an order - a different one if need be for each property considered.

In De Generatione Animalium the criterion was degree of development at birth, and in De Anima what Aristotle called "powers of soul", which ranged from the merely "nutritive" in plants to the "rational" in man. According to this latter system, each order of life possesses all the powers of soul enjoyed by its inferiors, plus its own distinguishing one.

This, then, whether derived from both Plato and Aristotle or merely the former, is the picture of creation traced by Lovejoy through the writings of Plotinus and other neo-platonists, and through those of many others throughout the middle ages and right on into the eighteenth century: enormous (infinite?) variety arranged in a continuous and ascending order from lowest to highest. As Augustine pithily puts it: "non essent omnia si essent aequalia." Or Aquinas, at greater length:

Thus the supreme beauty would be lost to the creation, if there were lacking that order by which things are dissimilar and unequal ... If there were a dead level of equality in things, only one created good would exist, which would be a manifest derogation from the perfection of the creation.⁴

There is an apologetic note in Aquinas; plenitude is being used to defend the manifest variety/inequality/imperfection of the separate parts of creation as contributing to its total perfection - of whatever consolation that may be. But this does not really concern us here; nor does the need felt by the sixteenth to eighteenth centuries to populate heavenly bodies other than earth with a whole

hierarchy of beings superior to man (a sort of angelic order of the new cosmology); nor do the heresies of Abelard, though we shall touch on the scarcely distinguishable so-called optimism of the eighteenth century; nor do any of the other fascinating by-products of plenitude and continuity which Lovejoy unearths. Rather, let us stand on the brink of the eighteenth century and read again that familiar, full, and lucid statement by John Locke of what was meant by the Great Chain of Being.

That there should be more species of intelligent creatures above us than there are of sensible and material below us is probable to me from hence: that in all the visible corporeal world we see no chasms or gaps. All quite down from us the descent is by easy steps and a continued series of things, that in each remove differ very little one from the other. There are fishes that have wings and are not strangers to the airy region; and there are some birds that are inhabitants of the water, whose blood is cold as fishes', and their flesh so like in taste that the scrupulous are allowed them on fish-days. There are animals so near of kin both to birds and beasts that they are in the middle between both, amphibious animals link the terrestrial and aquatic together: seals live at land and at sea, and porpoises have the warm blood and entrails of a hog, not to mention what is confidently reported of mermaids or sea-men. There are some brutes that seem to have as much knowledge and reason as some that are called men; and the animal and vegetable kingdoms are so nearly joined that, if you will take the lowest of one and the highest of the other, there will scarcely be perceived any great difference between them; and so on, till we come to the lowest and most inorganic parts of matter, we shall find everywhere that the several species are linked together and differ but in almost insensible degrees. And when we consider the infinite power and wisdom of the Maker, we have reason to think that it is suitable to the magnificent harmony of the universe and the great design and infinite goodness of the Architect that the species of creatures should also, by gentle degrees, ascend upward from us

toward his infinite perfection, as we see they gradually descend from us downwards; which if it be probable, we have reason then to be persuaded that there are far more species of creatures above us than there are beneath: we being, in degree of perfection, much more remote from the infinite being of GOD than we are from the lowest state of being and that which approaches nearest to nothing.⁵

Such a passage makes it abundantly clear to what extent a belief in the Great Chain of Being was, all unwittingly, preparing the way for an eventual acceptance of evolution - even to mermaids posing as "Piltdown" missing-links. But to make the point even more unmistakably, here is the geologist Hugh Miller writing in the nineteenth century to show how the chain of being has mised Lamarck and others into supposing that life has evolved from humble beginnings.

It is a law of nature, that the chain of being, from the lowest to the highest form of life, should be, in some degree, a continuous chain; that the various classes of existence should shade into one another, so that it often proves a matter of no little difficulty to point out the exact line of demarcation where one class or family ends and another class or family begins. The naturalist passes from the vegetable to the animal tribes, scarcely aware, amid the perplexing forms of intermediate existence, at what point he quits the precincts of the one, to enter on those of the other. All the animal families have, in like manner, their connecting links; and it is chiefly out of these that writers such as Lamarck and Maillet construct their system. They confound gradation with progress.⁶

Eighteenth century writing proper abounds in both prose and verse restatements of what Lock has to say about creation. A good run-of-the-mill example is by that run-of-the-mill eighteenth century mind, Soame Jenyns, in his disquisition On the Chain of

Universal Being.

The farther we enquire into the works of our great Creator, the more evident marks we shall discover of his infinite wisdom and power, and perhaps none more remarkable, than in that wonderful chain of beings, with which this terrestrial globe is furnished; rising above each other from the senseless clod, to the brightest genius of human kind, in which, though the chain itself is sufficiently visible, the links, which compose it, are so minute, and so finely wrought, that they are quite imperceptible to our eyes. The various qualities with which these various beings are endued, we perceive without difficulty, but the boundaries of those qualities which form this chain of subordination, are so mixed, that where one ends, and the next begins, we are unable to discover ... The manner by which the consummate wisdom of the divine artificer has formed this gradation, so extensive in the whole, and so imperceptible in the parts, is this:- He constantly unites the highest degree of the qualities of each inferior order to the lowest degree of the same qualities belonging to the order next above it; by which means, like the colours of a skilful painter, they are so blended together, and shaded off into each other, that no line of distinction is anywhere to be seen ... Animal life rises from this low beginning in the shell-fish, through innumerable species of insects, fishes, birds, and beasts, to the confines of reason, where, in the dog, the monkey, and the chimpanze, it unites so closely with the lowest degree of that quality in man, that they cannot easily be distinguished from each other. From this lowest degree in the brutal Hottentot, reason, with the assistance of learning and science, advances, through the various stages of human understanding, which rise above each other, till in a Bacon or a Newton it attains the summit.

... The superiority of man to other terrestrial animals is as inconsiderable, in proportion to the immense plan of universal existence, as the difference of climate between the north and south end of the paper I now write upon, with regard to the heat and distance of the sun.⁷

The tone of the passage seems, in some ways, nearer than ever to Darwin. The emphasis on each stage in the "ascent" being linked

before and after is more explicit than ever, and there is even a blurring of that distinction between men and apes which Bishop Wilberforce and others were later so loth to let go. (Indeed, other eighteenth century writers, including Rousseau and Monboddo - p.24 - were willing to abolish the distinction altogether, and regard the orang-outang, as they undifferentiatingly termed all apes, as the "wild man of the woods" his name literally implied. It is only fair to add, however, that in most if not all cases they reimposed an equivalent and equally insurmountable distinction between apes and monkeys.) No doubt Soame Jenyns was conscious of a sufficiently reassuring distance between himself and the "lowest degree" of mankind. And certainly, neither in the biological nor in the social sphere was this "Pangloss", whose contentedness with the best of possible worlds so roused the contemptuous anger of Dr. Johnson⁸, in any sense of the word a "progressive".

Increasingly, in fact, a belief in the chain of being was being used to justify, not to say shore up, the status quo in all things. (Which is almost certainly one reason why speculation about evolution suffered such a set back in England with the rise of anti-Jacobin feeling at the turn of the century.) Equally increasingly, therefore, a rigorous insistence on the strict letter of a law which bade all keep their places to eternity was felt by some to be an intolerable restraint on all the most natural, many of the most

admirable, and some even of the most Christian, aspirations of mankind. After all, man had presumably been endowed with these aspirations in the "consummate wisdom" of the same "divine artificer" as had allocated him his unalterable role in the scheme of things. People began to ask whether plenitude and the perfection of the whole might not be a goal to be achieved bit by bit; the door was opened to the idea of progress, which, as we shall see, was a concept fast gaining ground in the eighteenth century.

Turning to the work of seventeenth and eighteenth century naturalists, however, we find more than one trend or factor which seems to be exerting a "conservative" influence. First, so many newly discovered specimens were pouring in from newly discovered or newly explored corners of the globe that the attention of naturalists was almost wholly taken up with classifying and naming them. In such circumstances, they clung hard to the concept of the great chain of being as providing at least some sort of a frame of reference into which such otherwise amorphous quantities of new knowledge could be fitted. (From our point of vantage, however, we can see that the idea of a continuous chain focussed attention on a number of factors - the smooth gradation of difference from one link to the next, or certain basic similarities of structure to be detected in many different, and even quite widely separated, species - which, in due course, when naturalists were better able to stand back from the detail of their

work and view it as a whole, would lead some of them to frame quasi-evolutionary hypotheses.)

More important, and more inimical at the outset to any evolutionary ideas, was a much firmer distinction between on the one hand species and on the other mere varieties. A clear idea of what was meant by the term species was necessary, not only to those engaged in classification of new species, but also, in the long run, to any would-be evolutionist. In the first instance, however, it meant a much greater rigidity - a loss of all that rather vague fluidity implied by the minataurs and other cross-bred monsters of mythology and folk-tale, or by lines such as:

... the strain of man's bred out
Into baboon and monkey.⁹

The first person to define a species was the Englishman, John Ray (1627-1705), who, having shown that mere differences of soil and cultivation could result in the same plant producing single and double forms in a variety of colours, deduced that features of outward appearance such as colour were no better a guide in the case of flowers than in that of human beings. The one sure criterion as to species was whether they bred true. "A species is never born from the seed of another species and reciprocally."¹⁰ Obviously, then, species were regarded as constant and immutable, in all respects as they had been on the third, fifth and sixth days of creation. "The number of species in nature is

fixed and limited and, we may reasonably believe, constant and unchangeable from the first day of creation to the present day."¹¹

After Ray came Carl Linnaeus (1707-78), the Swedish naturalist who gave his name to the society before which Darwin and Wallace were to read their papers on natural selection in 1858. Linnaeus was the greatest, by far, of the century's classifiers, striving, in successive editions of his Systema Naturae, to impose such order as he could on a truly burgeoning nature. As an aid to accurate classification, Linnaeus laid it down that each species should carry the generic name of the group of species, or genus, to which it belonged (e.g. canis for all dog-like forms), together with its own specific name as a species (hence canis lupus for wolf, canis vulpes for fox, etc.). Such "official" recognition of the genus as well as the species implied closer, almost "family" relationships between the species in any one such group, and might be taken, as we shall later see, as admitting the possibility of some or all of them having derived from a common ancestor. This was far from Linnaeus' intention when he initiated classification by genus as well as species, and was contrary to his beliefs at that time. Indeed, in Philosophia Botanica (1751) he stated categorically that species were "primordial types created by divine wisdom and perpetuated by generation from the beginning to the end of the world"¹² - a pronouncement which, with all Linnaeus' authority behind it, was to prove of great comfort to the faithful.

Less widely known were his later doubts, and footnotes to this edict, resulting at least in part from experiments with hot-house hybridization. In the end he came to hold the view that perhaps the genus, or even the order, was the basic and originally created entity, and that genera and/or species were the result of subsequent "intermarriages".¹³ This falls far short of a thoroughgoing belief in progressive evolution, but at least the basic concept of species is acquiring a little of the flexibility it will shortly need.

Other biologists and other scientific trends were more openly and more unequivocally favourable to the emergence of evolutionary ideas. First, the heavens were increasingly seen to be subject to change, development, evolution, instead of remaining fixed for ever in an initial perfection. Second, an awareness of vast, interstellar distances probably predisposed men to think in terms of a longer time-scale for creation, as did also an increasing knowledge of geology, and the inescapable antiquity of such terrestrial features as extinct volcanoes in the Massif Central of France, or hills composed of fossil-bearing sedimentary rocks which ~~can~~^{could} have had no other conceivable origin than to have accumulated gradually on the bed of oceans. Third, increasing interest in fossils led to speculation as to whether some fossilized forms of life might not now be extinct. If so, then the array of life created by God in the first place was not sacrosanct,

and as some species disappeared others might appear. This same interest in fossils also prompted further questions as to the age of the earth and the length of time life had existed on its surface. Fourth, studies of human population in relation to food supply - studies drawn on later by Malthus, and through him by Darwin - were being made in France, and the idea of a human population being held in check by its environment was transferred to the biological study of other forms of life (pp. 16&84). Fifth, the increasing use of hot-house cultivation led to much closer observation - by others as well as Linnaeus - of the range and extent of the variations which could take place within one species, and of the possibilities of hybridization. Similarly the commercial breeding of animals was becoming more widespread, and beginning to reveal the power - which so impressed Darwin - of human selection to effect changes in the breed. And last, the microscope was making possible a detailed study of the embryo and developmental stages of life. The picture of the embryo as a minute "homunculus" was slowly abandoned as it became clearer and clearer that all forms of life develop (or "evolve", though eighteenth century embryologists used this term for the "unfolding" of the miniature man within the germ) from almost indistinguishable beginnings.¹⁴ (This last point, as we shall see, impressed Erasmus Darwin deeply.) The extreme version of this widely held embryological theory of preformation demanded that the

infinitesimal forms of all possible future generations be contained within each and every seed - that in creating Adam, God had in a quite literal sense created all men. Such a theory, of course, precluded any belief in biological change or evolution.

Foremost among naturalists contemporary with Linnaeus, and strongest in his opposition to him on certain points (notably, as we shall see, on the question of genera), was the Comte de Buffon (1707-88). Scattered throughout his very extensive, and not always very co-ordinated or orderly, writings are the germs at least of most of the ideas Darwin needed a century later.

For instance, Buffon like Darwin was no mean geologist. And by contrast with most of his contemporaries, he played down the importance of the unique and the catastrophic in the geological history of this globe, searching instead for explanations in terms of slowly operating and continuing forces and causes.

... we must take the earth as it is, examine its different parts with minuteness, and, by induction, judge of the future from what at present exists. We ought not to be affected by causes which seldom act, and whose action is sudden and violent. These have no place in the ordinary course of nature. But operations uniformly repeated, motions which succeed one another without interruption, are the causes which alone ought to be the foundation of our reasoning.¹⁵

Such a belief not only entails a geological time-scale of the order to permit biological evolution; it also invokes in geology the same kind of slow, ordered, natural (as opposed to sudden, arbitrary, and

supernatural) mechanisms as were needed in biology if evolution was ever to become a tenable hypothesis. The actual letter of Buffon's geology may in many instances have been inaccurate, but the spirit was closely in accord, as we shall see, with that of Hutton and Lyell, to whose geology Darwin owed so much.

In addition, Buffon recognised fossils as evidence of long extinct species, and acknowledged the Malthusian role in nature of disease, famine and flood.

Its (Nature's) movements are performed on two steady pivots, unlimited fecundity, and those innumerable causes of destruction which reduce the product of this fecundity to a determined measure, and preserve at all periods nearly an equal number of individuals in each species.¹⁶

Moreover, he seems to have grasped to the full the extent to which man can direct, intensify and employ the capacity of a species to vary - something which, as already mentioned, deeply impressed Darwin.

Wheat, for example, has been so greatly altered by man, that it is now nowhere to be found in a natural state. It has a similarity to darnel, dog's-grass, and several other grasses; but still we know not to which of these plants it ought to be referred: and, as it is annually renewed, is used as the common food of man, and more cultivated than any other vegetable, its nature, of course, has undergone the greatest alterations. Hence man is able, not only to make every individual in the universe answer his ends, but, with the assistance of time, he can change, modify, and improve their species. This is the chief power he possesses over Nature. To have transformed a barren herb into wheat; is a kind of creation.¹⁷

Finally, and most impressively, there is his awareness of a basic similarity of structure ("uniformity of design") in outwardly very

dissimilar creatures.

If, from the immense number of animated beings which people the universe, we select a single animal, or even the human body, as a standard, and compare all other organized beings with it, we shall find that each enjoys an independent existence, and that the whole are distinguished by an almost infinite variety of gradations. There exists, at the same time, a primitive and general design, which may be traced to a great distance, and whose degradations are still slower than those of figure or other external relations: for, not to mention the organs of digestion, of circulation, or of generation, without which animals could neither subsist nor reproduce, there is, even among the parts that contribute most to variety in external form, such an amazing resemblance, as necessarily conveys the idea of an original plan upon which the whole has been conceived and executed. When, for example, the parts constituting the body of a horse, which seem to differ so widely from that of man, are compared in detail with the human frame, instead of being struck with the difference, we are astonished at the singular and almost perfect resemblance. In a word, take the skeleton of a man, incline the bones of the pelvis, shorten those of the thighs, legs and arms, lengthen the bones of the feet and hands, join the phalanges of the fingers and toes, lengthen the jaws by shortening the frontal bone, and, lastly, extend the spine of the back: this skeleton would no longer represent that of a man, but would be the skeleton of a horse; for, by lengthening the back-bone and the jaws, the number of vertebrae, ribs, and teeth, would likewise be augmented; and it is only by the number of these bones, which may be regarded as accessory, and by the prolonging, contracting, or junction of others, that the skeleton of a horse differs from the skeleton of a man. But, to trace these relations more minutely, let us examine separately some parts which are essential to the figure of animals, as the ribs: these we find in man, in all quadrupeds, in birds, in fishes, and the vestiges of them are apparent even in the shell of the turtle: let us next consider, that the foot of a horse, so seemingly different from the hand of a man, is, however, composed of the same bones, and that, at the extremity of each finger, we have the same small bone, resembling a horse-shoe, which bounds the foot of that animal.

From these facts we may judge, whether this hidden resemblance is not more wonderful than the apparent differences; whether this constant uniformity of design, to be traced from men to quadrupeds, from quadrupeds to the cetaceous animals to birds, from birds to reptiles, from reptiles to fishes, &c., in which the essential parts, as the heart, the intestines, the spine, the senses, &c., are always included, does not indicate, that the Supreme Being, in creating animals, employed only one idea, and, at the same time, diversified it in every possible manner, to give men an opportunity of admiring equally the magnificence of the execution and the simplicity of the design.

At this point the modern reader can scarcely refrain from jumping to the conclusion that Buffon is about to propound a whole-hogging theory of evolution. And in fact both Maupertuis, for whom Buffon had a great respect (Venus Physique, 1751), and Diderot (Pensees sur l'Interpretation de la Nature XII, 1754)¹⁸ had already suggested, partly on the basis of such uniformity of design, that widely differing, and perhaps even all, forms of life might have had a common origin, the latter citing the former as being in agreement with such views, and Buffon as disagreeing. And certainly, as these ensuing paragraphs show, Buffon was quite cognizant of such a line of argument. (N.B. The passage here quoted is from the first volume of Buffon's Histoire des Quadrupeds, 1755-67, and therefore represents his views at about the time Diderot was writing.)

In this view, not only the horse and ass, but man, monkeys, quadrupeds, and every species of animal may be considered as one family. But from this are we warranted to conclude, that, in this great and numerous family, which were brought into existence by the Almighty alone, there are lesser families conceived by Nature, and produced by time, of which some should only consist of two individuals, as the horse and ass, others of several individuals, as the weasel, the ferret, the martin, the pole-cat, &c.,

and, at the same time, that, among vegetables, there are families consisting of ten, twenty, thirty &c., plants? If these families really existed, they could only be produced by the mixture and successive variation and degeneration of the primary species: and if it be once admitted, that there are families among plants and animals, that the ass belongs to the family of the horse, and differs from him only by degeneration¹⁹; with equal propriety may it be concluded, that the monkey is a man degenerated; that man and the monkey have sprung from a common stock, like the horse and ass; that each family, either among animals or vegetables, has been derived from the same origin; and even that all animal beings have proceeded from a single species, which, in the course of ages, has produced, by improving and degenerating, all the different races that now exist.

Those naturalists (i.e. Linnaeus) who, on such slight foundations, have established families among animals and vegetables, seem not to have considered, that, if their doctrine were true, it would reduce the product of the creation to any assignable number of individuals, however small: for, if it were proved, that animals and vegetables were really distributed into families, or even that a single species was ever produced by the degeneration of another, that the ass, for instance, was only a degenerated horse, no bounds could be fixed to the powers of Nature: she might, with equal reason, be supposed to have been able, in the course of time, to produce, from a single individual, all the organized bodies in the universe.

But this is by no means a proper representation of Nature. We are assured, by the authority of revelation, that all animals have participated equally of the favours of creation; that the two first of each species were formed by the hands of the Almighty; and we ought to believe that they were then nearly what their descendants are at present.²⁰

Strange the irony that the very standpoint which Buffon is here attacking as a logical extension of Linnaeus' introduction of genera (i.e. that species which are members of the same genus may/must be

presumed to have derived one from the other, by "improving" or "degenerating"), and which as we have seen Linnaeus did come close to occupying later in life, is in fact substantially Buffon's own, again later in life.

Buffon fait donc dériver tout le règne animal d'un certain nombre de types originels dont certains (espèces majeures ou isolées) ont persistés à peu pres tels qu'ils étaient, tandis que d'autres engendraient, par dérivation ou dégénération, toute une famille d'espèces voisines.²¹

But almost incredible the irony²² that Buffon should have here in his hand the jaw-bone of evolution, and use it merely to belabour Linnaeus' ass. Similarly, thirty odd years later, in a passage quoted in more than one history of evolutionary ideas²³ as a prime example of an eighteenth century belief in evolution, Kant marshals the same evidence as Buffon, and some more, into a magnificent paragraph,²⁴ merely in order to demonstrate how the evolutionary hypothesis (or, indeed, any conceivable hypothesis), while "a daring venture on the part of reason" which "cannot be shown to be absurd" even though "experience offers no example of it", is none the less unable to offer a satisfactory non-teleological explanation of life, since we should still be left groping for a cause which knew what it was doing. Whether they believed it or not is less important for our purposes, however, than that both Kant and Buffon had encountered an evolutionary hypothesis of sorts when they wrote those passages. Goethe, too shows scattered traces of evolutionary thought in his writings. The idea that life was capable of changing over the centuries from one

form to another, and that many forms of life had developed from few, was current in certain circles during the second half of the eighteenth century. But it was a tremendous step, to move from regarding creation as a quite static chain, or ladder, to seeing it as a continuously ascending escalator. Ladders lead down as well as up; it was possible for a Buffon or a Diderot to concede, reluctantly or readily, that species were no longer the unchanging categories of John Ray and Genesis, and for him still not to attribute any general upward direction to such changes as might take place. Degeneration is surely at least as probable as improvement, and monkeys seem rather more likely to derive from men than vice-versa. Indeed, "loin qu'il (Buffon) voie dans la variation, dans la mutabilité, un agent de progrès, de perfectionnement organique, il y attache plutôt une idée de dégradation, de déchéance, ce que marque bien d'ailleurs son terme de *dégénération*,"²⁵

Two things were requisite: that these new ideas in biology should become associated naturally, and probably unconsciously, in men's minds with current notions of social and historical progress, and that some mechanism of change should be suggested which would tend to lead to, or favour, improvements or beneficial changes rather than the reverse.

For progress was becoming, as has already been intimated, an important strand in the texture of eighteenth century thought. The difficulty for us is to conceive of its ever not having been an

integral part of man's way of thinking about the universe. Yet, as Dean Inge reminds us in his Romanes Lecture of 1920, "The ancient Pagans, we are told, put their golden age in the past, we put ours in the future. The Greeks prided themselves on being the degenerate descendants of gods, we on being the very creditable descendants of monkeys." Similarly, the middle ages certainly had no earthly notion of progress as we use the term. Mankind, so far from moving towards an eventual earthly perfection, had fallen from an original one. What was to be the future on this planet of the human species was a meaningless question; there was only individual salvation, followed by individual immortality in another state of being. Moreover, such changes, let alone progress, as did in fact take place in the middle ages must have been so slow as to be all but imperceptible to most observers.

Professor Bury, in The Idea of Progress (London 1920), summarises the position as follows: before the idea of progress could make much headway there had to be an end to any undue reverence for antiquity (which, of course, persisted into the Renaissance), together with a shift from otherworldly to more worldly values, while agencies for change (notably science) had to increase their powers to accelerate progress to such a point that faith in those powers was strengthened because the progress became perceptible. Nothing, it seems, progresses quite like progress.

These conditions began to be fulfilled during the Renaissance, and bore their full fruit in the eighteenth century. Not that there were no rearguard actions (battles of ancients and moderns, or of books), but at least the "Augustan" age seemed to feel that any lost ground had been made up, that it could "look antiquity in the eye", and that from here on all was "clear profit". Not that there weren't, in the same way, inconsistencies. Rousseau, firm believer in the perfectibility of man²⁶, could still quite happily use the myth of the noble savage when it suited his purpose. Historians and philosophers such as Fontenelle, Helvetius, Turgot and Condorcet, strong in their condemnation of the present and loud in their advocacy of a consequent need for progress in the future, became so convinced of the inevitability of such progress²⁷ that they began to discover, as confirmatory evidence, signs of a similar progress in the history which had led up to the present they had begun by so roundly condemning. Meanwhile, here in England, Burke, magnificently complacent about the need or scope for any kind of progress, past, present or future²⁸, elsewhere still reviews lovingly the "slow but well-sustained progress" that has been made - and may still be made, if only it be done slowly enough. To Priestly progress is essentially a product of laissez-faire²⁹, yet, though Godwin would agree with him that progress takes place and that government is in the main inimical to it³⁰, that is as far as they would agree. Everyone, it seems, and especially so towards the end of

the century, believes in progress, though one man's progress may well be another's anathema. Even Malthus, spectre at such a feast of optimism, by no means precludes all hope of progress³¹. And Gibbon, specialist in quite other processes, than progress, nevertheless permits us to "acquiesce in the pleasing conclusion that every age of the world has increased, and still increases, the real wealth, the happiness, the knowledge, and perhaps the virtue of the human race."³²

Decisive, however, as must have been the influence of this whole climate of opinion in favour of progress in human affairs on emerging ideas of biological evolution, it is not easy to document, precisely because the assumptions were becoming so widespread and therefore often unspoken.

First witness is Lord Monboddo (1714-99), an eccentric Scottish Law Lord with an early passion for linguistics and anthropology in general. Monboddo was convinced, as possibly were Rousseau and others, that the orang outang (a term used indiscriminately for all higher apes) was a primitive form of man.³³

There are, I know, many, who will think this progress of man, from a quadruped and an Ourang-Outang to men such as we see them now a days, very disgraceful to the species. But they should consider their own progress as an individual. (In the womb, man is no better than a vegetable; and, when born, he is at first more imperfect, I believe, than any other animal in the same state, wanting almost altogether that comparative faculty, which the brutes, young and old, possess.) If, therefore, there be such a progress in the individual, it is not to be wondered at that there should be progress also in

the species, from mere animal up to the intellectual creature: But, on the contrary, I should think it not agreeable to that wonderful order and progression of things that we observe in nature, if it were otherwise ...³⁴

Elsewhere³⁵ Monboddo writes of "a progress in this species (Man) which is characteristic of it, distinguishing it from every other ..", and again, that "it is evident that there is a progress in civil society, at least, such as is not to be found in natural things, but only in things of human institution." It would seem to be quite clear, therefore, that like Rousseau (Ch. I, note 26) he did not believe in the capacity of any species (as opposed to individual) to progress biologically, except in the case of man. Nevertheless, man at least is judged capable of biological as well as social and intellectual progress, as a species. Moreover, the word "progress" is used in a strongly biological context (both the progress of the individual, and that of the species), and is significantly (though perhaps unintentionally) echoed by its derivative when Monboddo refers, in a quite ordinary and perfunctory eighteenth century way, to the great chain of being as "that wonderful order and progression of things that we observe in nature". Some cross-fertilization, or cross-infection, must surely be taking place.

Clearer, if perhaps more limited, in its relevance is the following from Condorcet's Sketch for a Historical Picture of the Progress of the Human Mind.

We may conclude then that the perfectibility of man is indefinite. Meanwhile we have considered him as possessing the natural faculties and organization that he has at present. How much greater would be the certainty, how much vaster the scheme of our hopes if we could believe that these natural faculties could also be improved? ... Finally, may we not extend such hopes to the intellectual and moral faculties? May not our parents, who transmit to us the benefits or disadvantages of their constitution, and from whom we receive our shape and features, as well as our tendencies to certain physical affections, hand on to us also that part of the physical organization which determines the intellect, the power of the brain, the ardour of the soul or the moral sensibility? Is it not probable that education, in perfecting these qualities, will at the same time influence, modify and perfect the organization itself?³⁶

Condorcet does not so much deduce the likelihood of previous biological progress from the certainty of future socio-intellectual progress, as foresee the two marching hand in hand into the future. But he does link the two together, and impute, to man if to no other species, a sort of Lamarckian ability to improve his body by the exercise of his mind.

The two authors so far quoted have not been professional or professing biologists. The next has a much greater claim to be considered as such, yet still retains something of his amateur status. It is often just such dilettante dabblers in more than one discipline (Diderot, Herbert Spencer, H. G. Wells) who most clearly reflect the cross-currents of opinion and play of ideas in any one age. And such a figure is the French philosophe, J. B. Robinet (1735-1820). Robinet not only believed that great variations have taken place on the basis of just a few (or even one) "prototypes", as he called them, but saw

direction and a sense of purpose in such variations - so much so that he reads almost like an eighteenth century Bergson, using the phrase puissance active where the latter used elan vital.

In the prodigiously varied sequence of the animals below man, I see Nature in labour advancing fumblingly towards that excellent being who crowns her work. However imperceptible the progress which she makes in one step, that is, in each new production, in each variation upon the original design which she achieves, nevertheless the advance becomes clearly sensible after a certain number of metamorphoses ... All the varieties intermediate between the prototype and man I regard as so many essays of Nature, aiming at the most perfect, yet unable to attain it except through this innumerable sequence of sketches. I think we may call the collection of the preliminary studies the apprenticeship of Nature learning to make a man.³⁷

This is of course to imply not just a progress which can be perceived in retrospect, but one where the goal was determined and striven after from the start; it is, if you like, to recognise the anthropocentric teleology implicit in any attempt to impute progress to natural processes which have as their end product man, and then boldly to attribute such anthropocentricity to the processes themselves.

But perhaps the clearest example of the idea of progress spreading to other fields of study (including the biological) from those of purely human affairs is to be found in the writings of Erasmus Darwin (1731-1802) - grandfather of Charles, and the first English evolutionist on record -, who openly acknowledges Hume the philosopher as one of the sources of his ideas.

The late Mr. David Hume, ... concludes that the world itself might have been generated, rather than created; that is, it might have been gradually produced from very small beginnings, increasing by the activity of its inherent principles, rather than by a sudden evolution of the whole by the Almighty fiat. - What a magnificent idea of the infinite power of THE GREAT ARCHITECT! THE CAUSE OF CAUSES! PARENT OF PARENTS! ENS ENTITUM!

For if we may compare infinities, it would seem to require a greater infinity of power to cause the causes of effects, than to cause the effects themselves. This idea is analogous to the improving excellence observable in every part of creation; such as in the progressive increase of the solid or habitable parts of the earth from water; and in the progressive increase of the wisdom and happiness of its inhabitants; and is consonant to the idea of our present situation being a state of probation, which by our exertions we may improve, and are consequently responsible for our actions.

Thus it would appear, that all nature exists in a state of perpetual improvement by laws impressed on the atoms of matter by the great CAUSE OF CAUSES; and that the world may still be in its infancy, and continue to improve FOR EVER AND EVER.³⁸

There is, it seems, a principle of improvement built into the very fabric of the universe, to which can be attributed with equal likelihood any progress in matters geological, biological, or purely human, though the last named - "the progressive increase of the wisdom and happiness of its (the earth's) inhabitants" - may reasonably be presumed to have been the first to have come to the notice of both Hume and Darwin, and to have suggested the rest.

Finally, when we reach the first widely acknowledged pre-Darwinian evolutionist, Pierre Lamarck (1744-1829), we find an additional,

purely biological reason for thinking of life as having developed upward from humble origins. Lamarck wishes to show the whole history of life as being controlled by the operation of an impersonal agency or set of laws which he calls nature. The sole, arbitrary, and supernatural act of the Creator was to establish such laws in the first place. (Compare Darwin's remarks above about it requiring "a greater infinity of power to cause the causes of effects, than to cause the effects themselves".) And the spontaneous generation of life from inanimate matter is easier to conceive of as being governed by such laws - as a natural rather than a supernatural phenomenon - when the form that life assumes in the first instance is very simple. Moreover, by assuming that such spontaneous generation continues even today, Lamarck is able to argue that we know from experience that complex forms of life are not spontaneously generated.

If, indeed, bodies which possess life are really productions of nature, she must have had and still have the faculty of producing some of them spontaneously. She must then have endowed them with the faculty of growth, multiplication and increasing complexity of organization and the power of varying according to time and circumstances. She must have done this if all that we now observe are really the products of her power and efforts.

After recognising the necessity for these acts of direct creation, we must enquire which are the living bodies that nature may produce spontaneously, and distinguish them from those which only derive their existence indirectly from her. Assuredly the lion, eagle, butterfly, oak, rose, do not derive their existence immediately from nature; they derive it as we know from individuals like themselves who transmit it to them by means of reproduction; and we may be sure that if the entire species of the lion or oak chanced to be destroyed

in those parts of the earth where they are now distributed, it would be long before the combined powers of nature could restore them.

I propose then to show what is the method apparently used by nature for forming, in favourable places and conditions, the most simply organized living bodies and through them the most perfect animals; how these fragile animals, which are the mere rudiments of animality directly produced by nature, have developed, multiplied and become varied; how at length, after an infinite series of generations, the organization of these bodies has advanced in complexity and has extended ever more widely the animal faculties of the numerous resulting races.³⁹

Both Erasmus Darwin and Lamarck are best known, of course, for providing the evolutionary hypothesis with an hypothetical mechanism. This had only become necessary since the general direction of biological change had come to be thought of as being upward. Chance variations which go up or down purely as chance directs are a different matter from variations whose cumulative effect, over vast stretches of time, is consistently upward or towards the more complex. And it is the recognition of this faculty of created life to improve, to pull itself up by its own bootstrings, which is the innovation in this next passage by Erasmus Darwin, taken from a few pages earlier than the passage already quoted about progress in general.

From thus meditating on the great similarity of the structure of the warm-blooded animals, and at the same time of the great changes they undergo both before and after their nativity; and by considering in how minute a portion of time many of the changes of animals above described have been produced; would it be too bold to imagine, that in the great length of time, since the earth began to exist, perhaps millions of ages before the commencement of the history of mankind, would it be

too bold to imagine, that all warm-blooded animals have arisen from one living filament, which THE GREAT FIRST CAUSE endued with animality, with the power of acquiring new parts, attended with new propensities, directed by irritations, sensations, volitions, and associations;⁴⁰ and thus possessing the faculty of continuing to improve by its own inherent activity, and of delivering down those improvements by generation to its posterity, world without end! ⁴¹

And from there he goes on to speculate whether reptiles, fish, insects, even plants, may not all have sprung in like manner from the same, single "living filament". What really matters at this stage in the history of evolutionary ideas, however, is the suggestion that an animal may be able to improve itself during its own lifetime by its own efforts, and then hand on that improvement to its offspring, an idea developed at much greater length and much more thoroughly by Lamarck in all his writings.

The conditions necessary to the existence of life are all present in the lowest organizations, and they are here also reduced to their simplest expression. It became therefore of importance to know how this organism, by some sort of change, had succeeded in giving rise to others less simple, and indeed to the gradually increasing complexity observed throughout the animal scale. By means of the two following principles, to which observation had led me, I believed I perceived the solution of the problem at issue.

Firstly, a number of known facts proves that the continued use of any organ leads to its development, strengthens it and even enlarges it, while permanent disuse of any organ is injurious to its development, causes it to deteriorate and ultimately disappear if the disuse continues for a long period, through successive generations. Hence we may infer that when some change in the environment leads to a change of habit in some race of animals, the organs that are less used die away little by little, while those which are more used develop better, and acquire a vigour and size proportional to their use.

Secondly, when reflecting upon the power of the movement of the fluids in the very supple parts which contain them, I soon became convinced that, according as this movement is accelerated, the fluids modify the cellular tissue in which they move, open passages in them, form various canals, and finally create different organs, according to the state of the organization in which they are placed.⁴²

In his recent study of Erasmus Darwin⁴³, Desmond King-Hele tries to make a case for Erasmus Darwin placing no more stress on Lamarckian mechanisms than did his grandson, and for Erasmus understanding the role of sexual and even natural selection at least as well as Charles. And true it is that the following extract shows, among other things, that Erasmus Darwin was very much aware of the importance of sex as part of the mechanism of biological change, even of biological improvement.

Fifthly, from the first rudiment, or primordium, to the termination of their lives, all animals undergo perpetual transformations; which are in part produced by their own exertions in consequence of their desires and aversions, of their pleasures and pains, or of irritations, or of associations; and many of these acquired forms, or propensities, are transmitted to their posterity. See Sect. XXXI, i.⁴⁴

As air and water are supplied to animals in sufficient profusion, the three great objects of desire, which have changed the forms of many animals by their exertions to gratify them, are those of lust, hunger, and security. A great want of one part of the animal world has consisted in the desire of the exclusive possession of the females; and these have acquired weapons to combat each other for this purpose, as the very thick, shield-like, horny skin on the shoulder of the boar is a defence only against animals of his own species, who strike obliquely upwards, nor are his tusches for other purposes, except to defend himself, as he is not naturally a carnivorous animal. So the horns of the stag are sharp to offend his adversary, but are branched for the purpose of parrying or receiving

the thrusts of horns similar to his own, and have therefore been formed for the purpose of combating other stags for the exclusive possession of the females; who are observed, like the ladies in the times of chivalry, to attend the car of the victor.

The birds, which do not carry food to their young, and do not therefore marry, are armed with spurs for the purpose of fighting for the exclusive possession of the females, as cocks and quails. It is certain that these weapons are not provided for their defence against other adversaries, because the females of these species are without armour. The final cause of this contest amongst the males seems to be, that the strongest and most active animal should propagate the species, which should thence become improved.⁴⁵

The last sentence in particular seems to show Erasmus Darwin on the brink of enlarging sexual selection into natural selection, yet nowhere does he actually take the further step and show how "the strongest and most active ... propagate the species" not only by acquiring more wives but also by surviving longer amidst nature's perpetual struggle for existence - a struggle he was very well aware of⁴⁶. Moreover, the first paragraph of the extract and the first sentence of the second, to say nothing of the earlier section referred to, are quite clearly Lamarckian in character.

It is probably fair to say that Erasmus Darwin, in a rather vague and unsystematic way, regarded sexual cross-breeding, and sexual selection or competition, as of at least as great importance in biological improvement as the Lamarckian efforts of animals to improve themselves. And ultimately, both these agencies of biological improvement, and any

others, were merely manifestations of the truth that "all nature exists in a state of perpetual improvement by laws impressed on the atoms of matter by the great CAUSE OF CAUSES".⁴⁷

The mechanisms suggested by Erasmus Darwin and Lamarck were wrong or inadequate, as things turned out, but this has blinded people to the facts that Lamarck's was the first, full-length, scholarly attempt to advance an evolutionary hypothesis, that he brought such ideas to the notice of many others, including Sir Charles Lyell, and that he did make several valuable contributions to the growing body of ideas on evolution. In the passage quoted above, for instance, there is stress on the importance of climatic and other changes in the environment as an agency for prompting changes in bodily structure.

With Lamarck we appear to have reached a temporary halt in the march of evolution. His immediate successors in France - men like Geoffroy Saint-Hilaire - did little more than to consolidate his work, while England, who, in Erasmus Darwin, began to take an almost family interest in the matter, became for the time being very suspicious of anything so new-fangled and French, not to say "revolutionary", as evolution. The concept had taken shape in certain men's minds that life has evolved from simple beginnings, and one attempt was made to explain how this might have come about. The attempt was premature, and failed; a great deal more preparatory work in a number of fields - notably geology - was necessary before a more successful one could be made.

CHAPTER II

THE IDEA OF EVOLUTION IN EIGHTEENTH CENTURY POETRY

It is clear by now that evolutionary ideas, in one form or another, were in the air for at least a century prior to The Origin of Species. Obviously there must have been some time lag between the earliest prose expressions of such theories, and their appearance in verse. Nevertheless, some surprisingly early instances can be found; and certainly a movement of ideas towards evolution, not only in biology but in astronomy and other such subjects, is perceptible in eighteenth century poetry - indeed more so than in early nineteenth century poetry.

This is partly because much eighteenth century poetry is of a reflective, informative, and/or didactic kind, in which the philosophic, religious and scientific beliefs of the time are able to take their natural and rightful place. Obvious examples are: Thomson's The Seasons (1726-30), Pope's An Essay on Man (1733-4), Young's Night Thoughts (1742-5), Johnson's The Vanity of Human Wishes (1749), Goldsmith's The Traveller (1764), and Cowper's The Task (1785). And like most tendencies, this one is even more marked in the less well-known writers of the period. The following, for instance, is a list of miscellaneous "scientific" minor poems from the eighteenth century, a surprising number of whose authors were doctors.

John Phillips, Cyder (1708),

Sir Richard Blackmore, Creation (1712),

Henry Baker, F.R.S., The Universe (1728),
 Henry Brooke, Universal Beauty (1735)
 Mark Akenside, The Pleasures of Imagination (1744),
 John Armstrong, The Art of Preserving Health (1744),
 Christopher Smart, The Hop-Garden (1752)
 James Grainger, The Sugar Cane (1764)
 Robert Dodsley, Agriculture (1772),
 William Mason, The English Garden (1772-81),
 Erasmus Darwin, The Botanic Garden (comprising Pt. I, The
 Economy of Vegetation (1791) and Pt. II, The Loves of
 the Plants (1789)), and The Temple of Nature (1803).

The sight of Smart's name may well call to mind his Song of David (1763), surely as passionate and "poetic" a paean to plenitude as one could wish. But to return to the more pedestrian and explicit kind of eighteenth century verse here under discussion, it should first be noted that the great chain of being is still putting in fairly frequent appearances. The best-known example is in An Essay on Man - a quite unequivocal statement of belief in a chain whose links, though often barely distinguishable from one another, are yet for ever and unchangeably themselves.

Far as Creation's ample range extends,
 The scale of sensual, mental pow'rs ascends:
 Mark how it mounts, to Man's imperial race,
 From the green myriads in the peopled grass:
 What modes of sight betwixt each wide extreme,
 The mole's dim curtain, and the lynx's beam:
 Of smell, the headlong lioness between,

I: 210

And hound sagacious on the tainted green:
 Of hearing, from the life that fills the flood,
 To that which warbles thro' the vernal wood:
 The spider's touch, how exquisitely fine!
 Feels at each thread, and lives along the line:
 In the nice bee, what sense so subtly true
 From pois'nous herbs extracts the healing dew: 220
 How Instinct varies in the grov'ling swine,
 Compar'd, half-reas'ning elephant, with thine:
 'Twixt that, and Reason, what a nice barrier;
 For ever sep'rate, yet for ever near!
 Remembrance and Reflection how ally'd;
 What thin partitions Sense from Thought divide:
 And Middle natures, how they long to join,
 Yet never pass th'insuperable line! ...
 See, thro' this air, this ocean, and this earth,
 All matter quick, and bursting into birth.
 Above, how high progressive life may go!
 Around, how wide! how deep extend below!
 Vast chain of being, which from God began,
 Natures aethereal, human, angel, man,
 Beast, bird, fish, insect! what no eye can see,
 No glass can reach! from Infinite to thee, 240
 From thee to Nothing! - On superior pow'rs
 Were we to press, inferior might on ours:
 Or in the full creation leave a void,
 Where, one step broken, the great scale's destroy'd:
 From Nature's chain whatever link you strike,
 Tenth or ten thousandth, breaks the chain alike.¹

Similarly James Thomson in The Seasons, though not referring
 very often to the chain of being, and certainly not being guided by
 it in the order in which the various forms of life he describes are
 catalogued, clearly subscribes to such a belief, and, like Pope,
 defends the totality of creation from the criticisms of those who,
 by their nature as human beings, cannot comprehend the overall design.

Let no presuming impious railer tax
 Creative Wisdom, as if aught was form'd
 In vain, or not for admirable ends. 320

Shall little haughty ignorance pronounce
 His works unwise, of which the smallest part
 Exceeds the narrow vision of her mind?
 As if upon a full proportion'd dome,
 On swelling columns heav'd, the pride of art!
 A critic fly, whose feeble ray scarce spreads
 An inch around, with blind presumption bold,
 Should dare to tax the structure of the whole.
 And lives the man whose universal eye
 Has swept at once the unbounded scheme of things, 330
 Marked their dependence so, and firm accord,
 As with unflattering accent to conclude
 That this availeth nought? Has any seen
 The mighty chain of beings, lessening down
 From Infinite Perfection to the brink
 Of dreary nothing, desolate abyss!
 From which astonish'd thought, recoiling, turns?
 Till then, alone let zealous praise ascend,
 And hymns of holy wonder, to that Power
 Whose wisdom shines as lovely on our minds, 340
 As on our smiling eyes his servant sun.²

Edward Young, too, in Night Thoughts, doffs his cap in the direction of the chain of being when he refers to man as:

Distinguish'd Link in being's endless chain!
Midway from Nothing to the Deity!³

Clearly, too, Pope's conception of the chain of being makes it the manifestation of co-operation and mutual usefulness, rather than the result of competition.

Look round our World; behold the chain of Love
 Combining all below and all above.
 See plastic Nature working to this end,
 The single atoms each to other tend, III: 10
 Atract, attracted to, the next in place
 Form'd and impell'd its neighbour to embrace.
 See Matter next, with various life endu'd,
 Press to one centre still, the gen'ral Good.

See dying vegetable life sustain,
 See life dissolving vegetate again:
 All forms that perish other forms supply,
 (By turns we catch the vital breath, and die)
 Like bubbles on the sea of Matter born,
 They rise, they break, and to that sea return. 20
 Nothing is foreign; Parts relate to whole;
 One all-extending, all-preserving Soul
 Connects each being, greatest with the least;
 Made Beast in aid of Man, and Man of Beast;
 All serv'd, all serving! nothing stands alone;
 The chain holds on, and where it ends, unknown.⁴

Thus, in a line like "All forms that perish other forms supply", evidence which will later, to someone like Erasmus Darwin, imply dog-eat-dog competition, is still being used to support the thesis of the complementary perfection of a highly differentiated creation.

As for progress, though Epistle III of An Essay on Man, in its conventional account of the early development of human society, implies progress in certain respects and of some sort, this is qualified by a Rousseauesque (or Platonic, or Eden-like) idealization of such very early society.

Nor think, in NATURE'S STATE they blindly trod;
 The state of Nature was the reign of God:
 Self-love and Social at her birth began,
 Union the bond of all things, and of Man. III: 150
 Pride then was not; nor Arts, that Pride to aid;
 Man walk'd with beast, joint tenant of the shade;
 The same his table, and the same his bed;
 No murder cloath'd him, and no murder fed.
 In the same temple, the resounding wood,
 All vocal beings hymn'd their equal God:
 The shrine with gore unstain'd, with gold undrest,
 Unbrib'd, unbloody, stood the blameless priest;
 Heav'ns attribute was Universal Care,
 And Man's prerogative to rule, but spare. 160

Ah! how unlike the man of times to come!
 Of half that live the butcher and the tomb;
 Who, foe to Nature, hears the gen'ral groan,
 Murders their species, and betrays his own.
 But just disease to luxury succeeds,
 And ev'ry death its own avenger breeds;
 The Fury-passions from that blood began,
 And turn'd on Man a fiercer savage, Man.⁵

That people at about the time of the publication of An Essay on Man were becoming familiar with the notion of progress, and that some were finding it difficult to reconcile this with the plenitude and perfection of the creation of an all-wise and omnipotent deity, are illustrated by a prose note to Henry Brooke's poem Universal Beauty.

Either there is a present absolute fitness in things; or a fitness in future, that is, in prospect or tendency, and only relative here to what must be absolute hereafter. But if there were an absolute fitness in the present state of things, there could then be no change in any thing; since what is best can never change to better: but things do change, and must therefore have a present relative fitness, tending to, and productive of some future, absolute, and unchangeable fitness or perfection; to which this present relative fitness is by a moral, wise, and orderly necessity, precedent.

The sum of all (which has so long and copiously employed the pens of the learned) is this, - First, that there is a present fitness or beauty sufficiently obvious in things, to demonstrate an Over-ruling Wisdom. - Secondly, that this Over-ruling Wisdom, or God, now does, and ever will conduct all things for the best. - But, thirdly, since things change, they cannot be now in their state of perfection. - Therefore, fourthly, there must be some other or future state, to which all things tend and are directed, for the final and unchangeable perfection of all things.⁶

Yet Brooke, apart from the negative evidence that he does not bring up the subject, disqualifies himself as an evolutionist by his support of the theory of embryological preformationism.

antedating it slightly, and making the male sperm emerge as a "formed" homunculus. God must have done it once for all in a flash at the original act of creation. Brooke clearly belongs to the former school, as, even more clearly, does Sir Richard Blackmore in Creation.

When the crude embryo careful Nature breeds, VI: 280
 See how she works, and how her work proceeds;
 While through the mass her energy she darts,
 To free and swell the complicated parts,
 Which only does unravel and untwist
 Th'invelop'd limbs, that previous there exist.
 And as each vital speck, in which remains
 Th'entire, but rumpled animal, contains
 Organs perplext, and clues of twining veins;
 So every foetus bears a secret hoard,
 With sleeping, unexpanded issue stor'd; 290
 Which numerous, but unquicken'd progeny,
 Clasp'd and inwrapt within each other lie;
 Engendering heats these one by one unbind,
 Stretch their small tubes, and hamper'd nerves unwind:
 And thus, when time shall drain each magazine,
 Crowded with men unborn, unripe, unseen,
 Nor yet of parts unfolded; no increase
 Can follow, all prolific power must cease.⁹

Curious, unwitting amalgum of the role and permanence (without allowing for genetic mutations, or for sexual blending of characteristics) of genes and chromosomes on the one hand, and on the other the slow exhaustion of ova in a female's ovaries! Least equivocal and most succinct of all on the subject is Henry Baker, F.R.S., in The Universe.

So Adam's loins contained his large posterity,
 All people that have been, and all that e'er shall be.¹⁰

From this next extract it would appear that Edward Young subscribes to the second version of preformationism outlined above by Erasmus Darwin; he likens human life in this world, as we wait for

entry to the next, to the embryo's life within its "sire".

This is the bud of being, the dim dawn,
 The twilight of our day, the vestibule;
 Life's theatre as yet is shut, and death
 Strong death, alone can heave the massy bar,
 This gross impediment of clay remove,
 And make us embryos of existence free.
 From real life, but little more remote
 Is he, not yet a candidate for light,
 The future embryo, slumb'ring in his sire.

I; 130

This less extreme form of the belief obviously does not constitute the obstacle to a theory of biological progress which the more extreme one does. And elsewhere Young comes nearer to admitting such a possibility than any other poet so far considered. Returning to his belief in the great chain of being, referred to earlier, here is a longer expression of it.

Look nature through, 'tis neat gradation all.
 By what minute degrees her scale ascends!
 Each middle nature join'd at each extreme,
 To that above it join'd, to that beneath,
 Parts, into parts reciprocally shot,
 Abhor divorce: what love of union reigns!
 Here, dormant matter waits a call to life;
 Half-life, half-death, join there; here, life and sense;
 There, sense from reason steals a glimm'ring ray;
 Reason shines out in man. But how preserv'd
 The chain unbroken upward, to the realms
 Of incorporeal life; those realms of bliss,
 Where death hath no dominion! Grant a make
 Half-mortal, half-immortal; earthy part;
 And part, aethereal; grant the soul of man
 Eternal; or in man the series ends.¹²

VI: 720

Nowhere is there any direct suggestion that the steps or stages in Nature's "gradation" are other than fixed; yet nowhere is there Pope's clear assertion of such fixedness. Young is clearly emphasising,

above all, the continuous nature of the chain, and the linking function of "middle natures". He is, in fact, using this aspect of the doctrine to reinforce man's claim to immortality (man being, of course, a "middle nature" linking two levels or kinds of existence), and this, taken in conjunction with what seems to be a veiled reference to the theory of spontaneous generation ("Here, dormant matter waits a call to life"), would appear to constitute a half-admission (even if unconscious) of the possibility of one link in the chain "metamorphosing" into the next. This, though a first step, is still a long way from a belief in evolution. Mankind, like "dormant matter" (and caterpillars), will continue till the end of time having to go through the same metamorphosis in order to become spirit/life (butterflies), whereas homo sapiens has once for all (rather like Adam and original sin) acquired erect, bi-pedal posture, on behalf of his foreseeable posterity. Nevertheless, there is a lessening of emphasis on rigidity. And in Night the Ninth, after taking us on a protracted excursion into some very post-Copernican heavens, the poet apostrophises his supposed companion, Lorenzo, as follows:

Swear by the Stars, by Him who made them, swear,
 Thy heart, henceforth, shall be as pure as they:
 Then thou, like them, shalt shine; like them, shalt rise IX:1950
 From low to lofty; from obscure to bright;
 By due gradation, Nature's sacred law.
 The stars, from whence? - Ask Chaos - he can tell.
 These bright temptations to idolatry,
 From darkness, and confusion, took their birth;
 Sons of deformity! from fluid dregs

Tartarean, first they rose to masses rude;
 And then, to spheres opaque; then dimly shone;
 Then brighten'd; then blaz'd out in perfect day.
 Nature delights in progress; in advance
 From worse to better ...¹³ 1960

Gradation, "nature's sacred law", has clearly become "progressive". Indeed, the concept of progress has been transferred to such an extent from human affairs to the processes of nature that we almost have the reverse here - the unprogressive human being sent not to the ant but to Nature. True, the only explicit example of progress in nature here cited is the progressive formation of heavenly bodies; evolution is as yet only cosmic in scale. But the principle has been very clearly enunciated that "Nature delights in progress; in advance from worse to better".

Perhaps the clearest example of an eighteenth century poet not subscribing to evolutionary ideas, and yet having access to much of the evidence which was swaying others, is Goldsmith in his An History of the Earth and Animated Nature (1744). Here are his comments on the possibility of men and orang outangs being related to one another.

From this description of the Ouran Outang, we perceive at what a distance the first animal of the brute creation is placed from the very lowest of the human species. Even in countries peopled with savages, this creature is considered as a beast; and in those very places where we might suppose the smallest difference between them and mankind, the inhabitants hold it in the greatest contempt and detestation ... The gradations of Nature in the other parts of nature are minute and insensible; in the passage from quadrupedes to fishes we can scarcely tell where the quadrupede ends and the fish begins; in the descent from beasts to insects we can hardly distinguish the steps of the progression; but in the ascent from brutes

to man, the line is strongly drawn, well marked, and unpassable.¹⁴

True, the more human-seeming orang outang has displaced Pope's "half-reas'ning elephant" as the nearest approach of the animal kingdom to the state of being human, but the line of demarcation is even more strongly drawn than by Pope, and very much more so than by Young, Soam Jenyns, or, of course, Monboddo. Indeed, one is tempted to say that a word like "unpassable" is not normally used except in answer to a contrary suggestion, and that it expresses a Verdun-like determination rather than a dispassionate, objective certainty with regard to the matter. Goldsmith, one feels, knows too much for comfort. Here, for instance, is his comment on the mule.

If the mule, or the monster bred between two animals, whose form nearly approaches, is no longer fertile, we may then conclude, that these animals, however resembling, are of different kinds. - Nature has providently stopped the fruitfulness of these ill-formed productions, in order to preserve the form of every animal uncontaminated: were it not for this, the races would quickly be mixed with each other; no one kind would preserve its original perfection; every creature would quickly degenerate; and the world would be stocked with imperfection and deformity.¹⁵

It is true that, if one had no knowledge of the eliminating mechanism of natural selection, Goldsmith's fears would seem eminently justified. But he seems almost to hurry away from the subject, as, despite specific acknowledgement of his particular indebtedness to Buffon on the subject of horses, asses and mules, this is the only allusion he makes to Buffon's lengthy digression on the subject of

one species being derivable from another. And though he summarises Buffon's theory of the "evolution" of the solar system - the planets being thrown out by the sun - , he himself does not subscribe to it. Elsewhere in the work he shows himself aware of the difficulty of accounting for fossils - particularly fossil shells found in the pyramids, which must surely have been built too soon after the flood to allow the shells to have become petrified in the intervening period. He also shows himself, incidentally and in passing as it were, quite well acquainted with the marked similarities of skeletal structure and the arrangement of internal organs in apparently widely differing species.

The bat in scarce any particular resembles the bird, except in its power of sustaining itself in the air. It brings forth its young alive; it suckles them; its mouth is furnished with teeth; its lungs are formed like those of quadrupeds; its intestines, and its skeleton, have a complete resemblance, and even are, in some measure, seen to resemble those of mankind.¹⁶

However, if we disregard such overtones as I have tried, above, to impute to a word like "unpassable", nowhere does Goldsmith show any awareness of the evolutionary implications of evidence like this. This is perhaps not surprising, since his History was undertaken merely as hack work, and such writing as he ever undertook from choice confines itself almost exclusively to that section of "Animated Nature" we term "human".

Certainly the clearest, probably the most interesting, and perhaps the most baffling of these examples of evolutionary or quasi-evolutionary ideas making their appearance in eighteenth century poetry occurs as early as Mark Akenside's The Pleasures of Imagination (1744). Five years earlier, in the same poet's Hymn to Science, there had been what appears an innocuous enough reference to the chain or scale of being, words like "ascent" and "progressive" seeming to demand merely the usual, static, eighteenth century interpretation when used in such a context.

Then launch through being's wide extent;
 Let the fair scale with just ascent
 And cautious steps be trod;
 And from the dead, corporeal mass,
 Through each progressive order, pass
 To Instinct, Reason, God.¹⁷

But the passage yet to be examined almost makes one revise one's opinion in retrospect.

The extract in question has been noted and commented on briefly by Douglas Bush in Science and English Poetry,¹⁸ and also by G. Potter in an article in Modern Philology,¹⁹ the latter basing his comments largely on Akenside's revised (but far from invariably improved) version of the poem, The Pleasures of the Imagination, published in 1757.

Akenside was a physician, and, as Potter noted, published (also in 1744) a thesis for his M.D. at Leyden entitled De Ortu et Incremento Foetus Humani. In this he revives the epigenesis theory of embryology

(first advanced by William Harvey in De Generatione Animalium), according to which, contrary to the current preformationist theory, the embryo develops from a simple, undifferentiated original particle of living matter and acquires its form and differentiated parts during the course of growth. This, suggests Potter, would predispose Akenside to think along evolutionary lines; certainly it would remove the obstacle offered by belief in the extreme form of preformationism.

Elsewhere in the poem, too, Akenside shows himself well aware of many contemporary scientific attitudes and opinions. His universe, for instance, is even larger than Young's.

Now amazed she views
 The empyreal waste, where happy spirits hold
 Beyond this concave heaven, their calm abode;
 And fields of radiance, whose unfading light
 Has travelled the profound six thousand years, I: 205
 Nor yet arrives in sight of mortal things.²⁰

To this there is added the following note.

It was a notion of the great Mr. Huygens, that there may be fixed stars at such a distance from our solar system, as that their light should not have had time to reach us, even from the creation of the world to this day.

And yet, very early in the poem, it is made clear that Akenside's universe is also essentially Platonic.

Ere the radiant sun
 Sprung from the East, or 'mid the vault of night I: 60
 The moon suspended her serener lamp;
 Ere mountains, woods, or streams adorned the globe;
 Or Wisdom taught the sons of men her love;
 Then lived th'Eternal One: Then, deep-retired
 In his unfathomed essence, viewed at large

The uncreated images of things;
 The radiant sun, the moon's nocturnal lamp,
 The mountains, woods and streams, the rowling globe,
 And Wisdom's form celestial. From the first
 Of days, on them his love divine he fixed, 70
 His admiration; till in time complete,
 What he admired and loved, his vital smile
 Unfolded into being. Hence the breath
 Of life informing each organic frame;
 Hence the green earth, and wide resounding waves;
 Hence light and shade alternate; warmth and cold
 And all the fair variety of things.²¹

Moreover, the creator of "all the fair variety of things" is quite specifically Platonic in his "benignant" motivation for creating them in the first place, (cf. p. 3 above, quotation from Timaeus), and the perfection of the resultant plenitude is quite orthodoxly eighteenth century in its neo-Platonism.

Know then, the Sovran Spirit of the world,
 Though, self-collected from eternal time,
 Within his own deep essence he beheld
 The circling bounds of happiness unite; II: 310
 Yet, by immense benignity inclined
 To spread around him that primeval joy
 Which filled himself, he raised his plastic arm,
 And sounded thro' the hollow depth of space
 The strong, creative mandate. Straight arose
 These heavenly orbs, the glad abodes of life,
 Effusive kindled by his breath divine
 Through endless forms of being. Each inhaled
 From him its portion of the vital flame,
 In measure such, that, from the wide complex 320
 Of co-existent orders, one might rise, -
 One order, all-involving and entire.
 He too, beholding in the sacred light
 Of his essential reason all the shapes
 Of swift contingence, all successive ties
 Of action propagated through the sum
 Of possible existence, he at once,

Down the long series of eventful time,
 So fixed the dates of being, so disposed
 To every living soul of every kind
 The field of motion and the hour of rest,
 That all conspired to his supreme design,
 To universal good: with full accord
 Answering the mighty model he had chose -
 The best and fairest of unnumbered worlds
 That lay from everlasting in the store
 Of his divine conceptions.²²

330

However, within the perfection of this plenitude, Akenside, like Henry Brooke, is concerned to find room for improvement, as seen in this earlier extract.

Call now to mind what high capacious powers
 Lie folded up in man: how far beyond
 The praise of mortals may the eternal growth
 Of Nature, to perfection half divine,
 Expand the blooming soul?²³

I: 225

This concern (to leave room for improvement) seems, in Book I, to lead to nothing more startling than a description of the aspirations of man, and his need to fulfil himself in new discoveries and achievements, though the phrase "the eternal growth Of Nature" might, in such a context, seem unnecessarily grandiloquent. But the highly Platonic and wholly orthodox extract from Book II (ll. 307-37), quoted immediately above, continues thus:

Nor content,
 By one exertion of creative power
 His goodness to reveal; through every age,
 Through every moment up the tract of time
 His parent-hand, with ever new increase
 Of happiness and virtue has adorned
 The vast harmonious frame: his parent-hand,
 From the mute shell-fish gasping on the shore

II: 340

To men, to angels, to celestial minds
 For ever leads the generations on
 To higher scenes of being; while supplied
 From day to day with his enlivening breath,
 Inferior orders in succession rise
 To fill the void below. As flame ascends, 350
 As bodies to their proper centre move,
 As the poised ocean to the attracting moon
 Obedient swells, and every headlong stream
 Devolves its winding waters to the main;
 So all things which have life aspire to God, -
 The sun of being, boundless, unimpaired,
 Centre of souls! Nor does the faithful voice
 Of Nature cease to prompt their eager steps
 Aright; nor is the care of heaven withheld 360
 From granting to the task proportioned aid;
 That in their stations all may persevere
 To climb the ascent of being, and approach
 For ever nearer to the life divine.²⁴

This is the passage quoted by Bush; what follows is the revised,
 1757 version used by Potter.

For his right arm
 Was never idle: his bestowing love
 Knew no beginning; was not as a change
 Of mood that woke at last and started up
 After a deep and solitary sloth
 Of boundless ages. No, he now is good,
 He ever was. The feet of hoary Time II: 240
 Through their eternal course have travelled o'er
 No speechless, lifeless desert; but through scenes
 Cheerful with bounty still; among a pomp
 Of worlds, for gladness round the Maker's throne
 Loud-shouting, or, in many dialects
 Of hope and filial trust, imploring thence
 The fortunes of their people: where so fixed
 Were all the dates of being, so disposed
 To every living soul of every kind
 The field of motion and the hour of rest, 250
 That each the general happiness might serve;
 And, by the discipline of laws divine
 Convinced of folly, or chastised from guilt,
 Each might at length be happy. What remains
 Shall be like what is passed; but fairer still,
 And still increasing in the godlike gifts

Of Life and Truth. The same paternal hand
 From the mute shell-fish gasping on the shore
 To men, to angels, to celestial minds,
 Will ever lead the generations on 260
 Through higher scenes of being: while, supplied
 From day to day by his enlivening breath,
 Inferior orders in succession rise
 To fill the voids below. As flame ascends,
 As vapours to the earth in showers return,
 As the poised ocean toward the attracting moon
 Swells, and the ever-listening planets, charmed
 By the sun's call, their onward pace incline,
 So all things which have life aspire to God,
 Exhaustless fount of intellectual day! 270
 Centre of souls! Nor doth the mastering voice
 Of Nature cease within to prompt aright
 Their steps; nor is the care of Heaven withheld
 From sending to their toil external aid;
 That in their stations all may persevere
 To climb the ascent of being, and approach
 For ever nearer to the life divine.²⁵

Some of the earlier Platonic emphasis has been omitted, but
 Akenside would still seem clearly to be implying a perfect plenitude,
 only this time a truly infinite and eternal one. Instead of a deity
 who, though "self-collected from eternal time",

Yet, by immense benignity inclined
 To spread around him that primeval joy
 Which filled himself, he raised his plastic arm,
 And sounded through the depth of hollow space
 The strong, creative mandate,

we have one whose

bestowing love
 Knew no beginning; was not as a change
 Of mood that woke at last and started up
 After a deep and solitary sloth
 Of boundless ages. No, he now is good,
 He ever was. The feet of hoary Time
 Through their eternal course have travelled o'er
 No speechless, lifeless desert; but through scenes
 Cheerful with bounty still; among a pomp
 Of worlds ...

But the passage which seems at first sight to anticipate Erasmus Darwin by some fifty or so years remains, in substance if not in phraseology, virtually unchanged. It might be argued that a change from

while supplied
From day to day with his enlivening breath,
Inferior orders in succession rise
To fill the void below

to

while, supplied
From day to day by his enlivening breath,
Inferior orders in succession rise
To fill the void below

indicates a stronger belief in spontaneous generation (which, as we have seen in the cases of Lamarck and Young, tends to accompany belief in evolution, or at the least to imply that all life was not once for all created during those first few days - that innovation may be possible) at the time Akenside wrote the first version of his poem. But this is to construct a great deal on a change from one small word to another small word. Potter even goes so far as to argue that for Akenside to change

nor is the care of heaven withheld
From granting to the task proportioned aid

to

nor is the care of heaven withheld
From sending to the toil external aid

indicates that he had come, in the intervening thirteen years, to appreciate the importance of external factors, such as changes of

climate, in any evolutionary process. This seems to me to place a very much greater construction on an almost equally small change of phraseology, from one fairly vague phrase to an equally vague phrase. Moreover, it assumes that Akenside was truly an evolutionist in at least a Lamarckian sense, which clearly is not the case. As Bush argues:

Nothing here or in the context or in the notes (which can be copious) indicates that the writer was conscious of launching a novel idea, and it was not novel ... One may suggest that much of the substance and some of the words are Miltonic. In the fifth book of Paradise Lost, Raphael's discourse to Adam begins, at lunch, with an account of angelic digestion, which may seem quaint, but it leads into one of Milton's bold ideas. The discourse proper begins, fittingly, with that pivotal conception, the chain of being, but Milton proceeds to reject the traditional division between matter and spirit. All creation consists of "one first matter", which is ever, unless depraved, moving upward toward God. It is a universe of becoming. And, though the process has "bounds Proportioned to each kind," it seems to allow for plants transcending planthood, and for material man, "Improved by tract of time," turning "all to spirit," like the angels. In Akenside, as in Milton, the main emphasis is on a general process of becoming, of all life aspiring to God. What seems to be Akenside's one clear singularity - and neither poet's idea is quite clear - is God's continuous creation of new species to fill the void left by those that have advanced, though the perpetual ascent of being appears to be Miltonically qualified by the words "in their stations." At any rate, there are new species and they develop.²⁶

My own reading of the passage in question from Paradise Lost²⁷ is that the "one first matter" aspires, within whatever form of life it constitutes and is as it were imprisoned in, to achieve as exalted a manifestation as is possible and still appropriate to that particular

form of life - i.e. within the plant to produce flowers and fruit, and within man to produce a reasoning soul. As for "plants transcending planthood", this is achieved by their fruits being eaten by animals, men, and, in this case, an angel.

flours and their fruit
 Mans nourishment, by gradual scale sublim'd
 To vital Spirits aspire, to animal,
 To intellectual, give both life and sense
 Fancies and understanding, whence the soule
 Reason receives ...

Men are, of course, a rather different matter, with a foot in each of two differing states of being, and may presume to hope, as Young also argued, to improve their station.

However, there is certainly a very real sense in which this Miltonic creation "aspires". As with Linnaeus and the naturalists, so with Pope and the poets: not until the eighteenth century is it thought necessary to insist on a rigid immutability of species. So Akenside may well have been reaching back to a pre-scientific, as well as forward to a fully scientific, fluidity of species. Certainly, in his own comment on the passage, in his notes, he seems almost self-consciously careful to remain a Platonist, though (pace Bush) claiming to go one step further than Plato.

This opinion, though not held by Plato nor any of the ancients is yet a very natural consequence of his principles. But the disquisition is too complex and extensive to be entered upon here.²⁸

And it is certainly no part of any true evolutionist's theories, whether Lamarckian or Darwinian, that the end product be determined before the process begins.

Returning once more to Akenside's poetry, it is possible to show him as very much more obviously the product of the age he lived in than might seem the case from his most-quoted passage. To read the following, for instance, is surely to be irresistably reminded of passages from An Essay on Man, with their message to "submit".

Vain are thy thoughts, O child of mortal birth!
 And impotent thy tongue. Is thy short span
 Capacious of this universal frame?
 Thy wisdom all sufficient? Thou, alas!
 Dost thou aspire to judge between the Lord
 Of Nature and his works? to lift thy voice
 Against the sovereign order he decreed,
 All good and lovely? to blaspheme the bands
 Of tenderness innate and social love,
 Holiest of things! by which the general orb
 Of being, as by adamantine links
 Was drawn to perfect union and sustained
 From everlasting?²⁹

II: 250

The extract is also clearly reminiscent of the one quoted above from Pope (p. 38), in which he stresses the harmony of the whole creation, and the mutual usefulness of its parts. Moreover, even from the passage we have been examining so closely, the lines immediately preceding any suggestion of progressive change are, in the 1744 version, unequivocally descriptive of a "best of all possible worlds" where "Whatever IS, is RIGHT".

... he at once,
 Down the long series of eventful time,
 So fixed the dates of being, so disposed

To every living soul of every kind
 The field of motion and the hour of rest,
 That all conspired to his supreme design,
 To universal good: with full accord
 Answering the mighty model he had chose -
 The best and fairest of unnumbered worlds
 That lay from everlasting in the store
 Of his divine conceptions.

What follows is surely the logical extension of what we have noted already in Brooke and Young - merely the most ingenious attempt made in the eighteenth century to reconcile those two ideas we have ~~already~~ ^{commented on} and more than once ~~noted~~ as being so apparently irreconcilable: plenitudinous perfection on the one hand, and on the other the liberating possibility of progress. The image of an escalator, sometimes used to distinguish the concept of evolution from that of a static ladder of being, could be applied much more precisely to Akenside's picture of creation. All the steps or grades in nature's gradation were there at the moment of original creation; all aspire towards, and are enabled by God to attain, higher and higher forms of being; yet the original and necessarily complete range of possible kinds of existence is kept entire by being replenished from below by divinely prompted "spontaneous" generation. Thus Pope's fear that

On superior pow'rs
 Were we to press, inferior might on ours;
 Or in the full creation leave a void
 Where, one step broken, the great scale's destroy'd³⁰

is circumvented, and man's ambitious nature can be viewed as God-given. His soul may, and indeed should,

Through all the ascent of things enlarge her view
 Till every bond at length should disappear
 And infinite perfection close the scene.³¹

Obviously the concealed, "Wheel-of-Fortune" descent of the steps of an escalator does not apply to Akenside's world-picture. The upper steps continue on upward. And though Akenside does not enlarge on this point, presumably the creation at the outset of "One order, all-involving and entire" of "the sum of possible existence" still left room for considerable if not infinite improvement at its upper end, thanks to the peculiarly elastic qualities of infinity.

As for the mechanism of this upward development, Akenside says no more than that it is God-given, and consists of inner guidance on the one hand, and "proportioned" and/or "external" aid on the other - which probably means no more than that He "leads the generations on/To higher scenes of being" with the aid of both nature (instinct) and nurture (environment - necessary food, etc.). However, being predetermined from above and all eternity, Akenside's mechanisms obviously have more in common with Erasmus Darwin's principle of improvement which is present even in the very atoms of creation, or with the predetermined improvements through successive creations of nineteenth century progressionists, such as we shall meet in Chapter III, than with the mechanisms of either Lamarck or Darwin.

Clearly Akenside is somewhat ahead of many of his contemporaries in his familiarity with current, and even advanced, scientific ideas,

and, through his studies in Holland, with continental as well as English thought in this field. And as his poem The Pleasures of Imagination (and later of the Imagination) was widely read and admired, it must have helped in the spread of such ideas as were a prerequisite of any general acceptance of evolutionary ideas, including that unconscious association postulated in Chapter I between progress within human society and progressive changes within the realm of biology. At a conscious level, however, few if any seem to have realised the possible implications of this short extract from a long and elsewhere rather dull poem. Even Coleridge, who found Akenside much to his taste,³² and who, as we shall see, was very well aware of the evolutionary hypothesis, has left no written evidence of ever having connected the two together in his mind. Moreover, as has already been indicated, and certainly judging by the brevity of his treatment of this subject compared with the interminable longueurs he lavishes on very much less seminal concepts, one doubts whether Akenside himself was aware of the importance of the suggestion he appears to be throwing out.

A much better and more successful doctor than Akenside, and a rather worse though again perhaps more successful poet, Erasmus Darwin was certainly aware, writing half a century later, of the importance of the evolutionary ideas he versified. Curiously, though, he is far from giving the impression of writing half a century later.

His virtues and his vices are robustly Augustan. Indeed, it is probably against Darwin's use of personification and poetic diction as much as anyone's that Wordsworth and Coleridge were reacting.

Here o'er piazza'd courts and long arcades,	I: 89
The bowers of PLEASURE root their waving shades ...	
Here young DIONE arms her quiver'd Loves,	97
Schools her bright Nymphs, and practices her Doves ...	
Behind in twilight gloom with scowling mein	106
The demon PAIN, convokes his court unseen ...	
Deep-whelm'd beneath, in vast sepulchral caves,	113
OBLIVION dwells amid unlabell'd graves ...	
While on white heaps of intermingled bones	121
The muse of MELANCHOLY sits and moans ...	
Shrin'd in the midst majestic NATURE stands,	129
Extends o'er earth and sea her hundred hands. ³³	

Moreover, as a sheerly dexterous though often somewhat mechanical versifier, scorning to claim any freedom outside the heroic couplet, of what to lesser mortals might have seemed some very intractable material, Darwin is clearly Pope's contemporary and sincere flatterer.

In earth, sea, air, around, below, above,	
Life's subtle woof in Nature's loom is wove;	
Points glued to points a living line extends,	
Touch'd by some goad approach the bending ends;	
Rings join to rings, and irritated tubes	
Clasp with young lips the nutrient globes or cubes;	
And urged by appetencies new select,	
Imbibe, retain, digest, secrete, eject.	
In branching cones the living web expands,	
Lymphatic ducts, and convoluted glands;	I: 260
Aortal tubes propel the nascent blood,	
And lengthening veins absorb the refluent flood;	
Leaves, lungs, and gills, the vital ether breathe	
On earth's green surface, or the waves beneath.	

Granted one cannot form any clear impression from this of what is going on. But then, neither could one from an equivalent passage in Zoonomania or any comparable prose work on the subject. It is of

the nature of medicine in the eighteenth century that no one knew very precisely what went on in the body, and Darwin is better in this respect than most. In any case, is it the intention of the passage to give a precise picture, or merely to convey a sense of fevered yet ordered activity?

Granted, too, that the rhythmic cliches obtrude and pall.

To follow

In earth, sea, air, around, below, above,
so closely with

Imbibe, retain, digest, secrete, eject
is, to put it no more severely, careless. And if "Rings joined to rings" clicks a little too smoothly and too soon into place after "Points glued to points", it may serve to call to mind

Cords grapple cords, and webs with webs unite³⁵

or

Thoughts join to thoughts, to motions motions cling³⁶

or

Pil'd rocks on rocks, on mountains mountains raised³⁷

or even

Orbs wheel in orbs, round centres centres roll³⁸

elsewhere in Darwin's work. Yet even in this, he is acknowledging as his master and model the poet who wrote, in a couplet surely intended to out-Pope himself,

Where Wigs with Wigs, with Sword-knots Sword-knots strive,
Beaus banish Beaus, and Coaches Coaches drive.³⁹

Not only in style, but also in subject matter, Darwin harks back to the earlier part of the century. Contemporaries such as Cowper, Crabbe and Goldsmith, to say nothing of the young Wordsworth or the young Coleridge, had turned to narrative verse, or at least to subjects with more "human interest". Certainly their work had lost that encyclopedic quality, with the verse often supplemented by copious prose footnotes, which makes Darwin's poems so reminiscent of Brooke's Universal Beauty, Blackmore's Creation, and even to a lesser extent Thomson's Seasons, Young's Night Thoughts and Pope's Essay on Man.

Interestingly, it is while he is writing of Pope in Biographia Literaria that Coleridge turns to Darwin, as presenting an even more obvious and culpable example of what he is trying to say about the relationship between Pope's style and subject matter.

Meantime, the matter and diction (i.e. of Pope) seemed to me characterized not so much by poetic thoughts, as by thoughts translated into the language of poetry. On this last point I had occasion to render my own thoughts gradually more and more plain to myself, by frequent amicable disputes concerning Darwin's Botanic Garden, which, for some years, was greatly extolled, not only by the reading public in general, but even by those whose genius and natural robustness of understanding enabled them afterwards to act foremost in dissipating these "painted mists" that occasionally rise from the marshes at the foot of Parnassus.⁴⁰

Note that Coleridge is here referring to The Botanic Garden,

far and away the most widely read of Darwin's works. It is only fair to add that, from reading that poem alone, it would be impossible to gather that Darwin held any evolutionary views. It is therefore necessary to be clear that a reference by some contemporary or subsequent author to Darwin's work includes within its scope either the later and less widely read Temple of Nature, or the more specialist Zoömania, before being able to be sure that this implies any knowledge of Darwin's evolutionary beliefs.

True, somewhere in the rag-bag of contents to Part I of The Botanic Garden, one meets much of the information and many of the ideas needful if one is to arrive at an evolutionary hypothesis. The stars and planets have, in some way or other, "evolved".

"LET THERE BE LIGHT!" proclaimed the ALMIGHTY LORD,
 Astonish'd chaos heard the potent word; -
 Through all his realms the kindling Ether runs,
 And the mass starts into a million suns;
 Earths round each sun with quick explosions burst,
 And second planets issue from the first;
 Bend, as they journey with projectile force,
 In bright ellipses their reluctant course; I: 110
 Orbs wheel in orbs, round centres centres roll,
 And form, self-balanced, one revolving whole.⁴¹

Similarly, behind all his irritating poetic mechanism of Gnomes or Sylphs or Nymphs, Darwin obviously has a fair idea of the kind of mechanisms by which the surface of the earth has been evolved - slow, geological mechanisms and processes which imply, presumably, a time scale such as to allow life to have evolved.

You (Gnomes) trod with printless steps Earth's tender globe,
 While Ocean wrap'd it in his azure robe;
 Beneath his waves her hardening strata spread, II: 35
 Rais'd her PRIMEVAL ISLANDS from his bed,
 Stretched her wide lawns, and sunk her winding dells,
 And deck'd her shores with corals, pearls and shells.⁴²

When it comes to the origin of life, however, Darwin is somewhat evasive, concentrating less on the unique, first appearance of life and more on the continual, everyday transformation of the inanimate into the animate, and sheltering for once, one suspects, behind the poetic "machinery" of his Gnomes.

You! Whose fine fingers fill the organic cells
 With virgin earth, of woods and bones and shells;
 Mould with retractile glue their spongy beds,
 And stretch and strengthen all their fibre-threads. -
 Late when the mass obeys its changeful doom
 And sinks to earth, its cradle and its tomb, II: 580
 GNOMES! with nice eye the slow solution watch,
 With fostering hand the parting atoms catch,
 Join in new forms, combine with life and sense,
 And guide and guard the transmigrating Ens.⁴³

It even seems that, so far as plants were concerned, Darwin at this stage believed in at least a modified form of the preformationism he was to attack in Zoonomania some five years later.

Lo! on each SEED within its tender rind
 Life's golden threads in endless circles wind;
 Maze within maze the lucid webs are roll'd,⁴⁴
 And, as they burst, the living flame unfold.
 The pulpy acorn, ere it swells, contains
 The Oak's vast branches in its milky veins;
 Each ravel'd bud, fine film, and fibre-line
 Trac'd with nice pencil on the small design.
 The young Narcissus, in its bulb compres'd,
 Cradles a second nestling on its breast; II: 390
 In whose fine arms a younger embryo lies,
 Folds its thin leaves, and shuts its floret-eyes;
 Grain within grain successive harvests dwell,
 And boundless forests slumber in a shell.⁴⁵

It has been argued⁴⁶ that The Botanic Garden (1789-91) was Darwin's most popular work precisely because it was his first - that it came early enough to escape a late eighteenth century and early nineteenth century reaction away from eighteenth century rationalism and reverence for science. This reaction, so the argument runs, was the result partly of the evangelical revival (both are surely symptoms of something more general, though doubtless influencing one another), and partly of an extreme, anti-Jacobin conservatism in all matters, which was in its turn a reaction to events in France. Thus, for example, the non-conformist Whig Monthly Review (June 1793) "was particularly impressed by Darwin's non-scriptural and geological theories, and recommended them to the 'serious consideration of the philosophic reader'." And even Zoonomania (1794-6) was nowhere attacked on the grounds of its evolutionary views. Whereas The Temple of Nature (1803) was savaged by the Critical Review, Monthly Review, Edinburgh Review, Anti-Jacobin Review, and British Critic. And it is true, no doubt of it, that anti-Jacobin, reactionary sentiment was on the increase throughout this period. Nevertheless, it cannot be ignored that the anti-biblical elements of The Botanic Garden are incidental, minor, and relatively unobtrusive, and its evolutionary implications virtually non-existent; and that the evolutionary views expressed in Zoonomania (a lengthy and scholarly prose work for experts, not a poem for the general public)

are far from central to Darwin's main theses, and could even be overlooked by a careless reviewer; whereas The Temple of Life devotes its first canto almost exclusively to a detailed exposition of the evolutionary hypothesis.⁴⁷

First, as in Young and Akenside, stars, planets and moons "evolve" - along lines sometimes almost word for word parallel to those in The Botanic Garden. Then we have waters covering the face of the earth, and within those waters the spontaneous generation of life. Finally we have the development by life of its various distinguishing characteristics, culminating in Reason. In lines which are probably, today, his best known, Darwin recapitulates.

ORGANIC LIFE beneath the shoreless waves
 Was born and nurs'd in Ocean's pearly caves;
 First forms minute, unseen by spheric glass,
 Move on the mud, or pierce the watery mass;
 These, as successive generations bloom,
 New powers acquire, and larger limbs assume:
 Whence countless groups of vegetation spring,
 And breathing realms of fin, and feet, and wing.

I: 300

Thus the tall Oak, the giant of the wood,
 Which bears Britannia's thunders on the flood;
 The Whale, unmeasured monster of the main,
 The lordly Lion, Monarch of the plain,
 The Eagle soaring in the realms of air,
 Whose eye undazzled drinks the solar glare,
 Imperious man, who rules the bestial crowd,
 Of language, reason, and reflection proud,
 With brow erect who scorns this earthy sod,
 And styles himself the image of his God;
 Arose from rudiments of form and sense,
 An embryo point, or microscopic ens!⁴⁸

310

Reverting to life within the sea, Darwin shows how it was

largely the slow accumulation of its crustaceous corpses into sedimentary rocks and corals, together with a certain amount of volcanic activity, which led in the first place to the emergence of dry land above the surface of the waters. And then he draws on still-existing amphibious or quasi-amphibious forms of life (beavers, whales, lizards), on creatures such as tadpoles and mosquitoes which appear to begin life in the water and then graduate to land and air, and on the way all embryonic forms of life seem in their early stages to be aquatic and only later to develop mammalian or other non-aquatic characteristics, to render more credible that all-important transition when life first took to dry land. And on this last point he all but anticipates the use Haeckel and others (see pp. 79-80) were to make of nineteenth century theories of embryonic recapitulation to support evolution.

The entire first canto is very vague, however, as to the mechanism(s) needed to bring about such changes, leaving it all to

"attractions", "appetencies", "volitions" and the like. Lines such as

These, as successive generations bloom,
New powers acquire, and larger limbs assume I: 300

and, even more,

As in dry air the sea-born stranger roves,
Each muscle quickens, and each sense improves I: 332

have a certain Lamarckian ring to them, but do not really commit themselves to any standpoint. Even the prose Appendix which he wrote on the subject⁴⁹ is content to rely very largely on that principle.

of improvement inherent in the universe which Darwin was so fond of referring to, though it does also mention the possible beneficial effects of sexual cross-breeding.

However, the remaining three cantos do show that, though Erasmus Darwin never really settled on a mechanism for his evolution, and certainly did not forestall his more famous grandson on this point, he did have within his grasp much of the information and some of the ideas which were necessary before the theory of natural selection could be formulated. And first, there was the importance of sexual reproduction. Darwin saw clearly that asexual reproduction gives no opportunity for more favourable combinations of characteristics to emerge in the offspring than are present in either of the parents.

Birth after birth the line unchanging runs,
 And fathers live transmitted in their sons;
 Each passing year beholds the unvarying kinds,
 The same their manners, and the same their minds ..50 II: 110

Later in the same canto there follows a poetic version of the extract already quoted (pp.32-3) from Zoonomania in which Erasmus seems to come so close to anticipating Charles in the matter of sexual selection being a vehicle for natural selection. (Darwin even goes so far as to include the relevant paragraphs from Zoonomania as a footnote, so Coleridge was right, literally!)

Here Cocks heroic burn with rival rage,
 And Quails with Quails in doubtful fight engage;
 Of armed heels and bristling plumage proud,
 They sound the insulting clarion shrill and loud,

With rustling pinions meet, and swelling chests,
 And seize with closing beaks their bleeding crests;
 Rise on quick wing above the struggling foe,
 And aim in air the death devoting blow. II: 320
 There the hoarse Stag his croaking rival scorns,
 And butts and parries with his branching horns;
 Contending Boars with tusk enammel'd strike,
 And guard with shoulder-shield the blow oblique;
 While female bands attend in mute surprise,
 And view the victor with admiring eyes.⁵¹

The next extract, from Cano III (entitled Progress of the Mind) describes at even greater length the armour and weapons of a variety of creatures - or their facilities for escaping from the weapons of others - , but with the emphasis this time on the competitiveness between different species, and the differing means of survival they employ. Line by line, almost, one is waiting for Darwin to arrive at the idea of the survival of the fittest, but of course he never does. And then, when he reaches man, how very close he seems to come to anticipating even Wallace,⁵² with his insight into the need for no more than the hand and brain as organs of survival, once the intelligence reaches human level.

On rapid feet o'er hills, and plains, and rocks,
 Speed the scared leveret and rapacious fox;
 On rapid pinions cleave the fields above
 The hawk descending, and escaping dove;
 With nicer nostril track the tainted ground
 The hungry vulture and the prowling hound;
 Converge reflected light with nicer eye
 The midnight owl, and microscopic fly; III: 100
 With finer ear pursue their nightly course
 The listening lion, and the alarmed horse.
 The branching forehead with diverging horns
 Crests the bold bull, the jealous stag adorns;

Fierce rival boars with side-long fury wield
 The pointed tusk, and guard with shoulder-shield;
 Bounds the dread tiger o'er the affrighted heath
 Arm'd with sharp talons and resistless teeth;
 The pouncing eagle bears in clinched claws
 The struggling lamb, and rends with ivory jaws; 110
 The tropic eel, electric in his ire,
 Alarms the waves with unextinguish'd fire;
 The fly of night illumines his airy way,
 And seeks with lucid lamp his sleeping prey;
 Fierce on his foe the poisoning serpent springs,
 And insect armies dart their venom'd stings.

Proud Man alone in wailing weakness born,
 No horns protect him, and no plumes adorn;
 No finer powers of nostril, ear, or eye,
 Teach the young Reasoner to pursue or fly. - 120
 Nerv'd with fine touch above the bestial throngs,
 The hand, first gift of Heaven! to man belongs;
 Untipt with claws the circling fingers close,
 With rival points the bending thumbs oppose,
 Trace the nice lines of Form with sense refined,
 And clear ideas charm the thinking mind ...53

Maddeningly, however, Darwin at this point digresses - from our point of view - onto Bishop Berkley's theory that our knowledge of the world is in the main a compound of touch and sight, and thence to Burke's (though Darwin attributes it to Hogarth) distinctly Freudian theory that appreciation of beauty (in which curved shapes, he argues, are so prominent) in landscape and natural forms stems from joys associated with the mother's breast.

As for Canto IV, we have already seen (Ch. I, note 46) how in it Darwin shows himself well aware of the Malthusian carnage throughout nature, associated largely with the very competitiveness described immediately above. And what deduction or moral does he draw? Merely

that out of death shall come, in the most crassly materialistic sense, new life.

When thus a squadron or an army yields,
 And festering carnage loads the waves or fields;
 When few from famines or from plagues survive,
 Or earthquakes swallow half a realm alive; -
 While Nature sinks in Time's destructive storms,
 The wrecks of Death are but a change of forms;
 Emerging matter from the grave returns,
 Feeds new desires, with new sensations burns; ?
 With youth's first bloom a finer sense acquires, IV: 400
 And Loves and Pleasures fan the rising fires. -
 Thus sainted PAUL, "O Death!" exulting cries,
 "Where is thy sting? O Grave! thy victories?"⁵⁴

The mind boggles at what Voltaire would have made of such biological Panglossery. And yet how does it differ, except in the tone and tact of the verse, from what Pope was quoted as saying in the extract on page 38-9? It was there argued that Pope's line, "All forms that perish other forms supply" would, in Erasmus Darwin's hands, have been used to illustrate competition between different forms of life, rather than co-operation and mutual usefulness. And so it would, earlier in the canto. But here, as he nears the peroration, Darwin yet again nails his Augustan colours to the mast, and wholesale slaughter is used as evidence to establish the existence, not of natural selection, but of co-operation and overall harmony.

And so, in the end, it all comes to so much less than it might have done. Neither his insight into sexual selection and its importance in determining the nature and quality of the future species,

nor his vivid awareness of the struggle for existence surrounding us, led to his formulating a theory of natural selection. Partly it is, of course, that Erasmus Darwin comes early in the story, before so much work by nineteenth century geologists and biologists; partly that he was, by nature, an arch-dilettante - as the quality of his verse, even more than that of his biology, demonstrates all too clearly. And yet, for all our patronising condescension, Erasmus Darwin was clearly a most remarkable man who, by reason, by intuition, and by faith, achieved the most penetrating insights for a man of his time into a wide variety of subjects, and became the first Englishman and one of the first men of any nationality to be quite certain that life had evolved from the simplest of origins.

An anachronist to the end, Erasmus Darwin lasted well on into the gathering Romantic movement, which reacted unfavourably not only to his poetic style, but to the rational, scientific standpoint he stood for. But more of that story in Chapter IV.

CHAPTER III

THE IDEA OF EVOLUTION IN THE NINETEENTH CENTURY

Chapter I traced the idea of evolution in the writings of naturalists and scientists down as far as Erasmus Darwin and Lamarck, to provide a background to the study, in Chapter II, of the appearance of those same ideas in eighteenth century poetry, again finishing with Erasmus Darwin. In some ways it would have been convenient to repeat the procedure down to, say, 1859 and the appearance of The Origin of Species, leaving the consideration of post-Darwinian evolutionary ideas to a later chapter. Unfortunately, however, the corresponding chapters on the poetry could not easily have followed the same pattern, since both Tennyson and Browning thought and wrote about evolution before and after 1859, and it seemed better to devote a continuous chapter to each. So this chapter will deal briefly with evolutionary ideas in the writings of scientists and philosophers throughout the nineteenth century, and the following five chapters will examine in some detail their impact on the poetry of the period.

Hitherto it has been assumed in this study that the more specimens naturalists collected, described and classified, the more complete the chain of being, and the nearer the day when people saw it as some sort of a record of past progress - a ladder rather than a chain, an escalator rather than a ladder. Further thought will show, however, that, beyond a certain point, it must have required more and more

ingenuity to fit all known forms of life into a single scale of being leading to a single summit, man. An important, if tentative, suggestion made by Lamarck was that creation was branching - like a tree rather than a ladder, with man at the top of the topmost branch, but with other branches leading to lesser crowning glories. This idea was taken much further by Cuvier, who divided animal life into four great groups: Vertebrates, Mollusca, Articulata, and Radiata. His scheme has been modified since, obviously, but the first important step had been taken.

Ironically, Cuvier's chief antagonist on this point was Geoffroy Saint-Hilaire, an incipient evolutionist. Saint-Hilaire's chief preoccupation, however, was to demonstrate that all living things conformed to a single, basic plan or design. To this end, some of the analogies and links he and his followers suggested have little to recommend them but their ingenuity. And by insisting too rigorously on his own particular concept of unity, Saint-Hilaire obstructed the work of Cuvier, who, though no evolutionist himself, was in fact preparing the way for the evolutionists to come.

Cuvier (1769-1832) was a paleontologist - the first of those magicians who, by using the knowledge of comparative anatomy they derive from living forms, are able to build up whole skeletons of extinct creatures from a few fossil fragments. Such spectacular achievements played their own important part in preparing men's minds to accept evolution, since they made people vividly and immediately

aware of the earth's possible antiquity, and of the strange things that might have had time to happen - more so than many scholarly theses and much learned talk.

Cuvier also noted of certain excavations near Paris, in his Essay on the Theory of the Earth (translated from the French and published in Edinburgh, 1815): "There is a determinate order observable in the disposition of these bones in regard to each other, which indicates a very remarkable succession in the appearance of the different species."¹ In particular, Cuvier noticed that the more recent the deposits, the nearer to present day species the remains which he found. Similarly, William Smith, a practising surveyor for companies building canals in England, had noticed that he could identify rock strata of different ages by the changing fossil forms embedded in them, and published his findings in a number of papers early in the century. It was becoming increasingly clear that the story of past life was written in the rocks.

However, Cuvier and Smith were far from being evolutionists. They both subscribed to the then fashionable catastrophic school of geology. Time was when geologists had been able to attribute most of their insoluble problems to the biblical flood. But by now there were too many fossils of extinct species, too many strata of rock patently laid down by the sea, too much altogether to be accounted for by one flood. So a whole series of such catastrophes, with associated volcanic and other disturbances, were postulated, separated

by long stretches of intervening calm. As Smith said of his fossils: "Each layer of these fossil organized bodies must be considered as a separate creation."² Or here, at greater length, is T.H.Huxley's description of such beliefs in his The Coming of Age of the Origin of Species:

One and twenty years ago, in spite of the work commenced by Hutton and continued with rare skill and patience by Lyell, the dominant view of the past history of the earth was catastrophic. Great and sudden physical revolutions, wholesale creations and extinctions of living beings, were the ordinary machinery of the geological epic brought into fashion by the misapplied genius of Cuvier. It was gravely maintained and taught that the end of every geological epoch was signalled by a cataclysm, by which every living being on the globe was swept away, to be replaced by a brand-new creation when the world returned to quiescence. A scheme of nature which appeared to be modelled on the likeness of a succession of rubbers of whist, at the end of each of which the players upset the table and called for a new pack, did not seem to shock anybody.³

In an odd kind of way, catastrophism spawned its own bastard form of evolution, referred to sometimes as "progressionism". For each successive creation was, of course, an improvement on its predecessor, with more, and more advanced, forms of life. The chain became a chain of creations as well as a chain of creatures. Moreover, it extended back into time and could therefore be said to "lead up" to man in more than a purely figurative sense. The unity of design so clearly running through the various stages or layers of life in this progress was seen as reassuring evidence of a sense of purpose since the beginning of time, of a divine master plan by which the whole creation, or rather series of creations, had moved toward this far-off

human event. Hugh Miller used, in fact, to refer to fossils as "geological prophecies". Even those who rejected the idea of successive catastrophes were for the most part willing to grant that successive, though not quite such wholesale, acts of creation were probably the most satisfactory way of explaining the record of past life preserved in the rocks. It was just that the requisite creations, and extinctions, had taken place in a more scattered, piecemeal, and natural-seeming way.

A further source of support for an evolutionary hypothesis was provided by the increasing study of embryology, and the way the foetus, in its early stages, appeared to go through forms appropriate to more primitive kinds of life. Charles Lyell, in the second volume of his Principles of Geology, puts it thus:

There is yet another department of anatomical discovery, to which we must not omit some allusion, because it has appeared to some persons to afford a distant analogy, at least, to that progressive development by which some of the inferior species may have been gradually perfected into those of more complex organization. Tiedemann found, and his discoveries have been most fully confirmed and elucidated by M. Serres, that the brain of the foetus, in the highest class of vertebrated animals, assumes, in succession, the various forms which belong to fishes, reptiles, and birds, before it acquires those additions and modifications which are peculiar to the mammiferous tribe. So that in the passage from the embryo to the perfect mammifer, there is a typical representation, as it were, of all those transformations which the primitive species are supposed to have undergone, during a long series of generations, between the present period and the remotest geological era.⁴

Something of the sort, argues G. R. de Beer⁵, had long been known. "William Harvey in 1645 wrote thus: 'Nature, by steps which are the same in the formation of any animal whatsoever, goes through the forms of all animals, as I might say egg, worm, embryo, and gradually acquires perfection with each step'." However, as we have already seen (pp. 40-2.), eighteenth century embryology abandoned Harvey's view of the matter and thought of the embryo (or in some cases the sperm) as being from the beginning a fully formed but minute replica of the adult creature. So the truth was for the early nineteenth century to rediscover. Serres published his Anatomie Comparee du Cerveau in 1824. A translation of Tiedemann's The Anatomy of the Foetal Brain, with a comparative exposition of its structure in animals was published in Edinburgh in 1826. And in 1828, the year Tennyson went up to Cambridge, came the publication in Germany of the results of the work done in this field by von Baer, the name most commonly associated with this whole subject. In fact von Baer never did subscribe to a full-blooded theory of recapitulation (according to which each individual passes, during its foetal development, through the adult forms of all the major preceding stages of living beings) such as was propounded in the 1860's by Haeckel, in support of Darwin, though he is often spoken of as doing so. On the contrary, he believed that all embryos begin life in an undifferentiated and scarcely distinguishable state, and share certain

early immature stages of development, but gradually become more and more clearly differentiated from one another, though the closer the eventual adult forms are to one another, the longer their embryonic forms share the same path of development.

This is fairly close to the modern view of the matter, and when expressed in their true form von Baer's views seem, from an evolutionary point of view, self-evident and inevitable. (Though von Baer himself never did accept the evolutionary hypothesis.) But in their popular distortion, with the foetus pointlessly recapitulating adult forms of life it has no intention of eventually assuming, the ^{parallel} ~~similarity~~ may seem more striking to those similarly pointless, earlier creations of the catastrophists. Certainly, as will be seen from the following extract by Agassiz, the eminent Franco-American naturalist and geologist, both geology and embryology were thought to provide the progressionists with parallel or corresponding maps of the strangely circuitous route by which the deity had planned that life should arrive at his eventual purpose.

The Fish is unquestionably lower than the Reptile; the Reptile is superior in every respect to the Fish, the Bird is in every respect superior to the Reptile, and among Mammals there are none we should feel inclined to place below Birds. This gradation we see at once, upon examination of their structures, is a marked feature among them. In the circulation of their blood we find a difference. It is simple among Fishes. Their mode of breathing is through gills; their blood is cold; they lay a large number of eggs, with very few exceptions

taking no care of them whatever. Then we have the class of Reptiles, in which the circulation is more complicated, whose mode of respiration is aërial, and though they lay eggs, those eggs are fewer in number, and there is a more close relation of parent and offspring than among Fishes. Coming to Birds, we have warm blood, a more complicated circulation, fewer eggs, and though in some cases the young when hatched are sufficiently developed to take care of themselves, as among hens and ducks, there are others in which the young are so imperfectly developed that they require the nursing care of the parent. Then, as we come to Mammals, we find a new feature introduced, - the dependence of the young upon the mother, the nourishing of the young by the mother from her own body. And this dependence is proportioned to the standing of the young. There is not so helpless a being born as the human infant, and yet he occupies the highest position according to his organization.

So these four classes are so linked together that from the Fish to the Man we have an unbroken succession. The plan of Man's organization begins with the Fish. And we can trace it through the successive geological formations in the same way. In the lowest fossiliferous strata we find Fishes, subsequently we find Reptiles, then Birds, then Mammals, and lastly Man. So here in the order of succession we have a coincidence with their gradation according to structure. And let us see if this coincidence does not exist in their mode of development. Take the egg of a Bird, and examine the growth of the young animal. At first it has all the features of a Fish; the structure coincides very closely. So here again we have the same thought in the mode of development.

Is it, then, too much to say, that, when the first vertebrate was called into existence, in the shape of a Fish, it was part of the plan of that framework into which life was moulded, that it should end with Man, the last and highest in the order of succession⁶

It is hard to credit, reading the above, that another "part of the plan" according to Agassiz was a series of annihilating catastrophes, and this, moreover, as late as 1862.

However, as Huxley implied above, not everyone was a catastrophist. As early as 1785, in an address to the Royal Society of Edinburgh entitled Theory of the Earth (subsequently enlarged and published as a book), James Hutton had put forward a quite different conception of geology and the way changes had been brought about in the earth's crust. His views made little impact at the time, and what reactions there were were mostly hostile. But in 1830 Charles (later Sir Charles) Lyell (1797-1875) advanced much the same views in his Principles of Geology, quoting with approval the following passage from Hutton.

The ruins of an older world are visible in the present structure of our planet, and the strata which now compose our continents have been once beneath the sea, and were formed out of the waste of pre-existing continents. The same forces are still destroying, by chemical decomposition or mechanical violence, even the hardest rocks, and transporting the materials to the sea, where they are spread out, and form strata analogous to those of more ancient date. Although loosely deposited along the bottom of the ocean, they become afterwards altered and consolidated by volcanic heat, and then heaved up, fractured and contorted.⁷

It is difficult, nowadays, when so much of what Hutton and Lyell were then saying for the first time has become mere commonplace, to realise what a watershed such remarks represented. Lyell was determined, above all, that Geology should be treated as a science. What had happened hitherto in the formation of the earth's crust, just as much as what was happening at the time he wrote, had been

subject to and was subject to, and entirely explicable in terms of, the ordinary laws governing the behaviour of physical bodies. It was the business of the geologist to perceive how the correct application of these laws could in fact account for all that he found, rather than have recourse to extra-ordinary, not to say supernatural, deluges and other cataclysms in order to explain puzzling evidence.

With Principles of Geology we are almost on the threshold of The Origin of Species. Darwin took the first volume with him on the voyage of the Beagle, insisted on the second being forwarded to him, and has acknowledged his great indebtedness to the book. And indeed no wonder. Not only was the time-scale required by Lyell's kind of geology just the one needed for natural selection; not only was Lyell's whole approach to geology - his insistence on a mechanism of natural laws - just the kind of approach Darwin would have to insist on in the case of biology. But even as Darwin was no mean geologist, so Lyell was no mean biologist, and the second of the three volumes to Principles of Geology was in fact concerned almost exclusively with biology and its relationship to geology. There was, for instance, the discussion already sampled on embryological development. And before this there had been a very fair summary of Lamarck's views on evolution, together with a frank airing of the puzzling features about variation within species which might lead some people (mistakenly in Lyell's view) to agree with Lamarck. And though it

may in fact have been Malthus on population whom Darwin read on his return from the voyage of the Beagle, just at the propitious time for the struggle for existence there described to click into place alongside Darwin's own thinking, he must have earlier read (even if he did not remember doing so) the same near commonplace of eighteenth century biological thought, if not in his grandfather's poetic version (Ch. I, note 46), then in the second volume of Principles of Geology.

"All the plants of a given country," says Decandolle in his usual spirited style, "are at war one with another. The first which establish themselves by chance in a particular spot, tend, by the mere occupancy of space, to exclude other species - the greater choke the smaller, the longest livers replace those which last for a shorter period, the more prolific gradually make themselves masters of the ground, which species multiplying more slowly would otherwise fill." In this continual strife, it is not always the resources of the plant itself which enable it to maintain or extend its ground. Its success depends, in a great measure, on the number of its foes or allies among the animals and plants inhabiting the same region.⁸

What is more, Lyell used this competitiveness of life as a further argument against catastrophism, demonstrating how, assisted by quite normal and fairly gradual changes of climate, it could account for all those extinctions of species which we know to have taken place, and thus removing the need for more cataclysmic means of destruction to be called into play. All the negative or destructive side to natural selection is there, explained in great detail, in Principles of Geology.

For the introduction of new forms of life, however, Lyell relied on periodic acts of creation by God. They would need to have been successive, if only to give herbage time to establish itself before the arrival of the herbivores, and herbivores time to establish themselves before the arrival of the carnivores. But the number of separate acts of creation, and their successive or "progressive" nature, were aspects of the whole process Lyell preferred to play down, postulating that, if only one pair (or a single individual where this was sufficient) of a species were created in the first place, subsequent migrations, and variations within prescribed limits, in response to new conditions, might sometimes give the appearance of new creations elsewhere on the globe where none had in fact taken place.

This reluctance to let the successive creations needed to explain fossil remains assume too progressive an air is, of course, of a piece entirely with the non-progressive nature of Hutton's or Lyell's geology. So too, perhaps, is his rejection, for so long, of the evolutionary hypothesis. In the opinion of Loren Eiseley, any idea of "progress" in either biology or geology was so firmly associated in Lyell's mind with the unscientific, catastrophic "progressionism" of those geologists whose views were so diametrically opposed to his own, that he was almost bound to be profoundly suspicious of evolutionary ideas. Moreover, he himself found no sufficient mechanism of a kind he could accept (of the kind he demanded in geology) to account for variation

on the scale and of the kind required for evolution. And that his scepticism should have continued for some years, even after Darwin and Wallace had found such a mechanism, is perhaps not very surprising.

To recapitulate, then, on the story of evolutionary ideas prior to Darwin, the eighteenth century inherited the great chain of being; an essentially static system according to which all living things were arranged hierarchically. It then added huge numbers of newly discovered living beings to the chain, and devised certain improved ways of classifying them. A few pioneers, realising that the earth was a great deal older than man had hitherto thought and suspecting that fossils were often the remains of now extinct species, perceiving a remarkable unity of design even in apparently widely dissimilar animals and noting the extent to which a single species could vary, especially with man's assistance, took the further step of postulating that one species might evolve from another, and that all life might have evolved from a comparatively few original forms - or even, thought some, a single source. In this case, the links or gradations in the chain or scale of being would mark the stages through which life had diversified itself by evolution. As yet, however, these "aboriginal" species were not thought of as being necessarily at the most primitive level, and the development or evolution of new species could, it was thought, have equally well been the result of degeneration as of improvement.

However, as it was becoming increasingly a commonplace of eighteenth century thought that the story of the human race was one of continuous and probably inevitable progress, this notion transferred itself and became attached to the emerging concept of biological change and development. But with the idea that all changes were in an upward direction came the need for a mechanism to explain how the capacity of a species to vary, which human breeders were able to harness and exploit by artificial selection, could under natural conditions harness itself, so to speak, to the improvement of the species as a whole and ultimately, of course, to the emergence of a new species. No proposed solution was forthcoming until Erasmus Darwin and Lamarck suggested that changes in the structure of animals could result from their efforts to do new things (e.g. giraffes stretching for higher and higher leaves) or their ceasing to do old ones (e.g. fish in caves no longer needing to use their eyes). Whether from use or disuse, such changes would often be the indirect result of new external conditions - climate mainly - and would be heritable by the animal's offspring.

The early nineteenth century saw developments and changing ideas in a number of associated fields which were to help the cause of evolution. The scale of being was shown to branch as it ascended, while fossils were shown to change with the age of the rocks they were found in, becoming more and more similar to existing forms of

life as the rocks became younger. And in geology, those who saw the development of the earth's crust in terms of a series of catastrophic interventions by a deity who had planned the progress of things in a series of somewhat arbitrary jerks were being challenged, and with increasing success, by those who saw it all in terms of the slow operation of universally applicable laws. This was essentially the same kind of development as Darwin and his followers were to postulate for life. Lastly, the development of the embryo was discovered suggestively to appear to recapitulate the history of earlier, more primitive forms of life in the same order of progression as that revealed by the fossil record.

The time had come for a second, and successful, attempt to find the right mechanism - natural selection. As Darwin himself showed, in the not very exhaustive Historical Sketch of the Progress of Opinion on the Origin of Species with which he prefaced The Origin of Species, many people's labours had preceded his, and most of the necessary notions were there for the using, though sometimes in a fragmentary or rudimentary form. Buffon, Lamarck, and his own grandfather (whom he relegated to a footnote) had all, Darwin acknowledged, thought of the idea of evolution before him. An impressive list of nineteenth century geologists, biologists and naturalists were all of the opinion, as Darwin quoted them, that species can vary so considerably as to give rise to new species;

some even went so far as to recognise a tendency towards improvement of some kind in the new species which arise in this way. But only two came really close to anticipating Darwin and Wallace on the issue of natural selection itself.

In 1813 Dr. W. C. Wells read a paper to the Royal Society entitled An Account of a White female, part of whose skin resembles that of a Negro. Darwin writes of it as follows:

In this paper he distinctly recognises the principle of natural selection, and this is the first recognition which has been indicated; but he applies it only to the races of man, and to certain characters alone. After remarking that negroes and mulattoes enjoy an immunity from certain tropical diseases, he observes, firstly, that all animals tend to vary in some degree, and, secondly, that agriculturalists improve their domesticated animals by selection; and then, he adds, but what is done in this latter case "by art, seems to be done with equal efficacy, though more slowly, by nature, in the formation of varieties of mankind, fitted for the country which they inhabit. Of the accidental varieties of man, which would occur among the first few and scattered inhabitants of the middle regions of Africa, some one would be better fitted than the others to bear the diseases of the country. This race would consequently multiply, while the others would decrease; not only from their inability to sustain the attacks of disease, but from their incapacity of contending with their more vigorous neighbours. The colour of this vigorous race I take for granted, from what has already been said, would be dark. But the same disposition to form varieties still existing, a darker and darker race would in the course of time occur: and as the darkest would be the best fitted for the climate, this would at length become the most prevalent, if not the only race, in the particular country in which it had originated." He then extends these same views to the white inhabitants of colder climates.⁹

And there we have it in a nutshell- the theory of natural selection. But just as it was possible for Lamarck to believe in

evolution without natural selection, so it was possible for Wells to fail to apply his principle widely enough for it to lead to a belief in evolution. (Though he did not quite, as Darwin implies, restrict its relevance to the colour of human skins.) Patrick Matthew, the other man whom Darwin acknowledged to have anticipated him in his book Naval Timber and Arboriculture (1831), did in fact see the principle of natural selection as probably having operated through much of geological time and having exercised a decisive influence on the development of life. But he only broached the idea very briefly in an appendix, and in any case he remained a catastrophist all his life, and never really reconciled this with his new theory. Moreover, so far as we are here concerned, the views of neither Wells nor Matthew on natural selection were known beyond a very small circle till Darwin acknowledged them in his Historical Sketch.

Very different was the case of Robert Chambers and his Vestiges of the Natural History of Creation (1844), the odd man out on Darwin's list. Chambers was a gifted amateur so far as science was concerned, who published the book anonymously in the first place, so that its heretical views should not bring his whole family and their publishing house into public odium. It was the first full-length attempt in English and in prose (Erasmus Darwin having written of evolution at much greater length in verse than in prose) to put the case for evolution; certainly it was the first

to reach a wide reading public. And as such it was castigated by many reviewers as immoral and godless. It was also the work of an amateur, and as such rather naïve and full of scientific errors. But it had enormous success. By 1860 twenty-four thousand copies had been sold, and in the words of G. M. Young, "the Vestiges of Creation, issued with elaborate secrecy and attributed by a wild surmise to Prince Albert, was a national sensation; translated into golden verses by Tennyson, evolution became almost a national creed."¹⁰

Chambers' evolution is like a modified form of progressionism, with overtones from both Lyell and Lamarck. Cosmic and geological evolution (i.e. the evolution of the solar system, and then of the earth's crust to its present form) he saw clearly in terms of the unhurried and law-abiding processes beloved of Hutton and Lyell, but with a sense of direction added - an overall and pre-determined "progressive" element. Biology too he saw in terms of purposive, planned progression. But he lacked a Hutton or Lyell to supply the appropriate processes, and his own lack of scientific training showed up more obviously. Like Agassiz, he interpreted the "recapitulatory" behaviour of the embryo as further evidence of the progressive plans laid down in the first instance by the creator; unlike Agassiz, he favoured a quasi-evolutionary rather than a catastrophic mechanism for the achievement of life's step-by-step

improvements.

It has pleased Providence to arrange that species should give birth to one another, until the second highest gave birth to man: be it so, it is our part to admire and to submit. The very faintest notion of there being anything ridiculous or degrading in the theory - how absurd does it appear, when we remember that every individual amongst us, actually passes through the stages of the insect, the fish, the reptile (to speak nothing of others) before he is permitted to breathe the breath of life.¹¹

Chambers may have prejudiced a few of his more scientific readers against evolutionary ideas by his elementary mistakes or naivety (he is very insistent, for instance, that spontaneous generation of life still takes place, and describes an experiment to demonstrate this); he may even have made some of them more cautious for fear of sharing any ridicule he might attract. But with the general reading public, though one may feel that G. M. Young slightly overstates the case, it was a very different matter. As Darwin himself, a shade condescendingly, says of the Vestiges: "In my opinion it has done excellent service in this country in calling attention to the subject, in removing prejudice, and in thus preparing the ground for the reception of analogous views."¹²

A further indication, though not one quoted by Darwin, of how widely evolutionary ideas were becoming known before the actual publication of The Origin of Species is an article entitled The Development Hypothesis by Herbert Spencer in The Leader of March 20th, 1850. The opening paragraphs clearly show the subject to be one

which was quite openly and generally debated in certain circles.

In a debate upon the development hypothesis, lately narrated to me by a friend, one of the disputants was described as arguing that, as in all our experience we know of no such phenomenon as the transmutation of species, it is unphilosophical to assume that transmutation of species ever takes place. Had I been present, I think that, passing over his assertion, which is open to criticism, I should have replied that, as in all our experience we have never known a species created, it was, by his own showing, unphilosophical to assume that any species ever had been created.

Those who cavalierly reject the theory of Lamarck and his followers, as not adequately supported by facts, seem quite to forget that their own theory is supported by no facts at all.

And so, finally, to Darwin himself and the theory of natural selection. Here, in his own words, is an account of how his thoughts on the subject developed.

From September 1854 onwards I devoted all my time to arranging my huge pile of notes, to observing, and experimenting, in relation to the transmutation of species. During the voyage of the Beagle I had been deeply impressed by discovering in the Pampean formation great fossil animals covered with armour like that on the existing armadillos; secondly, by the manner in which closely allied animals replace one another in proceeding southwards over the Continent; and thirdly, by the South American character of most of the productions of the Galapagos archipelago, and more especially by the manner in which they differ slightly on each island of the group; none of these islands appearing to be very ancient in a geological sense.

It was evident that such facts as these, as well as many others, could be explained on the supposition that species gradually became modified; and the subject haunted me. But it was equally evident that neither the action of the surrounding conditions, nor the will of the organisms (especially in the case of plants), could account for the innumerable cases in which organisms of every kind are beautifully adapted to their habits of life, - for instance,

a woodpecker or tree-frog to climb trees, or a seed for dispersal by hooks or plumes. I had always been much struck by such adaptations, and until these could be explained it seemed to me almost useless to endeavour to prove by indirect evidence that species have been modified.

After my return to England it appeared to me that by following the example of Lyell in Geology, and by collecting all facts which bore in any way on the variation of animals and plants under domestication and nature, some light might perhaps be thrown on the whole subject. My first note-book was opened in July 1837. I worked on true Baconian principles, and without any theory collected facts on a wholesale scale, more especially with respect to domestic productions, by printed enquiries, by conversation with skilful breeders and gardeners, and by extensive reading. When I see the list of books of all kinds which I read and abstracted, including whole series of Journals and Transactions, I am surprised at my industry. I soon perceived that selection was the keystone of man's success in making useful races of animals and plants. But how selection could be applied to organisms living in a state of nature remained for some time a mystery to me.

In October 1838, that is, fifteen months after I had begun my systematic enquiry, I happened to read for amusement Malthus on Population, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The result of this would be the formation of new species. Here, then, I had at last got a theory by which to work; but I was so anxious to avoid prejudice, that I determined not for some time to write even the briefest sketch of it. In June 1842 I first allowed myself the satisfaction of writing a very brief abstract of my theory in pencil in 35 pages; and this was enlarged during the summer of 1844 into one of 230 pages, which I had fairly copied out and still possess.

But at that time I overlooked one problem of great importance; and it is astonishing to me, except on the principle of Columbus and his egg, how I could have

overlooked it and its solution. This problem is the tendency in organic living beings descended from the same stock to diverge in character as they become modified. That they have diverged greatly is obvious from the manner in which species of all kinds can be classed under genera, genera under families, families under sub-orders, and so forth; and I can remember the very spot in the road, whilst in my carriage, when to my joy the solution occurred to me; and this was long after I had come to Down. The solution, as I believe, is that the modified offspring of all dominant and increasing forms tend to become adapted to many and highly diversified places in the economy of nature.

Early in 1856 Lyell advised me to write out my views pretty fully, and I began at once to do so on a scale three or four times as extensive as that which was afterwards followed in my "Origin of Species"; yet it was only an abstract of the materials which I had collected, and I got through about half the work on this scale. But my plans were overthrown, for early in the summer of 1858 Mr. Wallace, who was then in the Malay archipelago, sent me an essay "On the Tendency of Varieties to depart indefinitely from the Original Type"; and this essay contained exactly the same theory as mine. Mr. Wallace expressed the wish that if I thought well of his essay, I should send it to Lyell for perusal.

The circumstances under which I consented at the request of Lyell and Hooker to allow of an abstract from my MS., together with a letter to Asa Gray, dated September 5, 1857, to be published at the same time with Wallace's Essay, are given in the "Journal of the Proceedings of the Linnean Society", 1858, p. 43. I was at first very unwilling to consent, as I thought Mr. Wallace might consider my doing so unjustifiable, for I did not then know how generous and noble was his disposition. The extract from my MS. and the letter to Asa Gray had neither been intended for publication and were badly written. Mr. Wallace's essay, on the other hand, was admirably expressed and quite clear. Nevertheless, our joint productions excited very little attention, and the only published notice of them which I can remember was by Professor Haughton of Dublin, whose verdict was that all that was new in them was false, and what was true was old. This shows how necessary it is that any new view should be explained at considerable length in order to arouse public attention.¹³

And here is Wallace, in an extract from the "Essay" in question, of whose prose style Darwin stood in so much awe.

The hypothesis of Lamarck - that progressive changes in species have been produced by the attempts of animals to increase the development of their organs, and thus modify their structure and habits - has been repeatedly and easily refuted by all writers on the subject of varieties and species, and it seems to have been considered that when this was done the whole question has been finally settled; but the view here developed renders such an hypothesis quite unnecessary, by showing that similar results must be produced by the action of principles constantly at work in nature. The powerful retractile talons of the falcon and cat tribes have not been produced or increased by the volition of those animals; but among the different varieties which occurred in the earlier and less highly organized forms of these groups, those always survived longest which had the greatest facilities for seizing their prey. Neither did the giraffe acquire its long neck by desiring to reach the foliage of the more lofty shrubs, and constantly stretching its neck for the purpose, but because any varieties which occurred among its antetypes with a longer neck than usual at once secured a fresh range of pasture over the same ground as their shorter-necked companions, and on the first scarcity of food were thereby enabled to outlive them. Even the peculiar colours of many animals, especially insects, so closely resembling the soil or the leaves or the trunks on which they habitually reside, are explained on the same principle; for though in the course of ages varieties of many tints may have occurred, yet those races having colours best adapted to concealment from their enemies would inevitable survive the longest.¹⁴

Wallace was always much the more trenchantly anti-Lamarckian, just as he is here. But even Darwin, in these early days, placed most of the emphasis on natural selection as the agent for biological improvement over the ages. It is, one may note in passing, a more automatic, impersonal, and also a more ruthless mechanism than

Lamarck's, with its explicit denial of any role played by the consciously exerted efforts of the creatures concerned, and its emphasis on struggle and a weakest-to-the-wall philosophy. Some (including, for instance, Basil Willey, in Darwin and Butler: two Versions of Evolution) might think Darwinian mechanisms of evolutionary progress to be peculiarly in tune with Victorian English ideas of laissez-faire economics and human progress in general, and Lamarckian mechanisms more in keeping with the revolutionary ardour of France at the turn of the previous century.

To keep to a purely biological brief as yet, however, it must be recorded that the battle was by no means won. Neither Darwin nor Wallace strictly speaking knew what they meant by "variations" or "varieties". Neither of them properly understood (nobody did, for that matter) how anything - even those features remaining constant, let alone variations - was inherited. The paper by Father Gregor Mendel which, in 1865, could have told them so much of what they needed to know, was to remain buried in obscurity until many years later, and Weissman's distinction between body-plasm and germ-plasm (a distinction fatal to Lamarckian mechanisms) was not made till the 1880's. So Darwin and Wallace often found it difficult to defend themselves when under heavy attack.

One of the most devastating of the purely scientific attacks on the theory of natural selection was mounted by Fleeming Jenkin, a Scottish engineer, who argued in an article in the North British

Review in 1867 that single variations (i.e. variations in a single member of a species) could never affect the whole species, since they would soon become swamped by cross-breeding with normal individuals of the species - just as one white man would not seriously dilute the colour of the skins of an islandful of negroes, even though he were "successful" enough to become King of the island. (Mendel held the answer here; truly heritable factors never become "swamped"; they may recede or lie dormant, but can reappear "undiluted" in later more favourable genetic combinations. Armed with this knowledge, one could soon show how, provided the possession of a lighter skin continued in succeeding generations to be of real advantage in the matter of acquiring power and a large number of wives, one white man could make a quite perceptible difference to the pigmentation of his islandful of negroes.)

Jenkin also asserted (and Johanssen later demonstrated experimentally) that most variations (e.g. those of height and size), including many that Darwin and Wallace had counted on, are not such as would be of any assistance in a process of natural selection. Either they are not strictly heritable, but the result of factors like variations in food supply and climate, or they can only be used - by livestock breeders, for instance - to secure strictly limited changes or improvements. (There is, in fact, a "regression to the mean" of a kind similar to that postulated

by Lyell, in Principles of Geology, when refuting Lamarck.) Again, more work was needed to show that the kind of variation upon which the mechanism of natural selection largely depends was the rarer kind resulting from genetic mutation - the kind known popularly as "sports".

Finally, Lord Kelvin and other godfearing nineteenth century physicists invoked the second law of thermodynamics. Spurred on, one suspects, by the extra-scientific satisfaction of raising objections to so impious a theory, they calculated that both the sun and the earth must be cooling at speeds which made it very unlikely that life could possible have existed on this planet for longer than twenty to forty million years. This was a severe blow to evolutionary biologists, who, encouraged by geologists like Lyell, had happily been working on assumptions more in the region of three-hundred million years (Darwin, in the 1st edition of The Origin). Kelvin's figure was certainly inadequate for the cumulative effect of a leisurely natural selection of the best of often very small variations to add up to the total biological difference between an amoeba and a man. Early in the twentieth century it was shown, of course, that classical physics was not enough, since its calculations took no account of atomic energy, and Darwin has by now had the greater part of his original estimate restored to him. But at the time, this attack, together with the others, drove

him back more and more in the direction of Lamarckian "aids" to natural selection in order to speed up the process, and successive editions of The Origin of Species show more and more emendations in this direction.

Much more immediate than such scientific attacks on the theory of natural selection, however, and usually much more passionate not to say vituperative, were the theological attacks. The first salvo was fired by Samuel Wilberforce, Bishop of Oxford, in an article in the Quarterly Review of July 1860, to be followed later in the year by his legendary clash with T. H. Huxley over the question of man's ancestry at the meeting in Oxford of the British Association for the Advancement of Science. Wilberforce's methods of attack - personal, and on the whole ill-informed - set the tone for sermons of denunciation from pulpits up and down the land, and for some time the voices of moderation found it difficult to make themselves heard. It must not be lost sight of, however, that some did manage to reconcile their Darwinism and their Christianity, and recognise that God was at liberty to choose to create gradually, by means of natural selection, rather than abruptly. Naturally enough, supporters of Darwin such as Huxley and Tyndall, stung to counter-attack, made similarly far more sweeping claims for natural selection and for science in general than the retiring Darwin had put forward in The Origin of Species.

The grounds for religious concern were in the main threefold, though they overlapped, and often no very clear distinction was made between them in the heat of the controversy. First, and in the long run perhaps least important, there was the undermining of the scriptural authority of Genesis. In this Darwinism was aided and abetted by much recent biblical scholarship, most of it German but publicised in this country by the notorious Essays and Reviews of 1860. Clearly The Origin of Species was only rather worse in this respect than Lyell's Principles of Geology, Chambers' Vestiges, or even the writings of such catastrophic progressionists as Miller and Agassiz, though its greater notoriety, together with its lack of any special acts of creation (even if widely spaced in time) and/or teleological role for God, exacerbated the offence it gave on this count.

An extreme example of the lengths to which some were prepared to go to reconcile Genesis with the new geological evidence which lay behind evolutionary theories is provided by Phillip Henry Gosse, zoologist, Plymouth Brother, and father of Edmund Gosse¹⁵. In his book Omphalos (1857) - the word is Greek for "navel" - Gosse argued that, just as Adam was created complete with navel, so the earth was created complete with fossils and other geological evidence of an apparently prolonged prior existence. Clearly, however, many more moderate churchmen had for some time been coming to the

conclusion that the pronouncements of the Old Testament on matters about which, by the mid-nineteenth century, science was much more entitled to speak, could not seriously or for long be defended. The mere threat to Genesis was by no means the aspect to Darwinism which caused thoughtful Christians the greatest concern.

Much more serious in its implications was the fact that Darwinism seemed to provide a mechanism which dispensed with the need for teleology - and hence, many assumed, God. For, though strictly speaking survival of the fittest can under certain circumstances mean the survival of less complex organisms rather than more complex ones, by and large natural selection did go much of the way to providing a tenable non-teleological explanation as to why life had evolved more and more complex forms, and it held out a kind of promise that eventually all life's secrets might be explicable in like terms.

Eighteenth century mechanistic views of the universe conceived of it as a vast machine, constructed in the first place by a mathematically minded deity, and functioning according to laws which he had established and man was capable bit by bit of discovering. And in the 1860's, matter having not yet disintegrated into Heisenbergian indeterminacies and unpredictable quanta of energy, Darwinism could be viewed as an extension into biology of just such an eighteenth century mechanistic view of the universe. However,

since in the eighteenth century important functions still reserved for deity had been the creation of different species of life, and in particular that of mankind, there was a real danger that the mechanism might now become autonomous and dispense with its need for a mechanic. The ultimate example of this kind of scientific arrogance seemed to many to come with Tyndall's Belfast address to the British Association for the Advancement of Science in 1874, which contained the following sentences.

We claim, and we shall wrest, from theology, the entire domain of cosmological theory. All schemes and systems which thus infringe upon the domain of science, must, in so far as they do this, submit to its control, and relinquish all thought of controlling it.¹⁶

What Tyndall is in fact claiming on behalf of science is not, to twentieth century minds, in the least outrageous; even the tone of voice is understandable if one remembers those used by his opponents. Indeed, neither Tyndall nor Huxley ever claimed that all spheres of human knowledge or experience fell within the "domain of science"; merely that much which religion had hitherto thought of as its own was rightfully science's. But to those who were here having notice served on them to quit, Tyndall and Huxley and others seemed to be making even larger claims for science than the enormous ones they were in fact making.

More immediately shocking, though perhaps ultimately no more serious, were the implications of Darwinism as to man's ancestry. In the first place there was what amounted for many to an almost

gratuitous affront to man's dignity. And in the second, even more profound and disturbing questions were raised as to the precise moment in time when man acquired his distinguishingly immortal soul - as to whether, in fact, any such absolute distinction could any longer be insisted on. The revolution this entailed in man's thinking about himself and his place in nature was probably a good deal more fundamental than that entailed by the change from a geocentric to a heliocentric universe, and somehow much more deeply personal and degrading. Moreover, thanks to greatly improved means of disseminating new knowledge, far more people were made aware far more quickly of this second dethronement.

Darwin himself had deliberately avoided making more than an oblique reference to the question of man's ancestry in The Origin of Species, wishing not to prejudice acceptance of the theory of natural selection by associating it with so emotionally charged an issue. The hope was a forlorn one, however. From the outset, this implication of the theory was apparent above all others, and above all others debated. Huxley, Darwin's self-appointed champion, was involved in highly personal clashes not only with Bishop Wilberforce, but with the revered scientific figure of Professor Owen, whom he accused, apparently with some justice, of distorting the evidence to be derived from a comparative study of the brains of apes and men. And in Man's Place in Nature (1863) Huxley showed

that there are, in fact, greater differences between the brains and general bodily structures of the lowest and highest apes, and even (in the case of brains) between the lowest and highest of humans, than between the highest apes and lowest humans.

Probably the turning point in the battle came, in that same year of 1863, with the publication of Lyell's The Antiquity of Man. Lyell, the grand old man on the sidelines to whom both sides looked for support, came down eventually, almost reluctantly, but conclusively, on the side of Darwin - and chose, moreover, this very issue of the ancestry of man as the issue on which to do so.

Of the two original champions of natural selection it was, in fact, Wallace in 1864 who was first in the field on the subject of man's ancestry, with an article entitled The Origin of Human Races and the Antiquity of Man Deduced from the Theory of Natural Selection.¹⁷ Wallace was answering those who had been puzzled by the apparent stability and unchanged quality of man's body, as far as could be deduced from remains which had been unearthed, compared with marked evolutionary changes in structure and appearance which were known to have taken place in other species during the same span of time. The important physical changes, as Wallace saw them - the acquisition of erect, bipedal posture, and consequent freeing of the hands, followed by changes to the thumb - had occurred early in man's evolution, preceding the full emergence of the brain, since they were necessary for the possession of greatly superior

intelligence to be of full benefit in the struggle for survival. But once the brain had become the all-important agent for survival, there was little or no further need, as Wallace pointed out, for bodily adaptation to changing circumstances. Instead of having to grow more hair, develop longer arms or legs or claws, and give birth to more or fewer offspring at a time, as changes in climate and the nature of competition from other forms of life happened to dictate, man began to use tools, wear clothes, make fire, plant crops, build dwellings, and organize himself in increasingly complex social patterns.

Modern writers on the subject have endorsed Wallace's clear perception of the changed nature of man's evolution since the emergence of the truly human brain. They have pointed out that, because man's specialization has been mental, he has been able to dispense with such limiting specialisms of the body as help one animal to dig superbly but hinder it from running, and enable another to run superbly but limit its digging.

Darwin was strong in his approval, at this time, of Wallace's main lines of argument on the subject of the origin of man. It was over the origin of man's intellectual, moral and aesthetic powers and perceptions that they parted company. In 1869 Wallace first expressed himself dissatisfied with natural selection as a sufficient explanation of the origin of these aspects to man's nature, by which time Darwin was already at work on The Descent of

Man. This was designed to show precisely how natural selection ("aided by" a touch of neo-Lamarckianism) was quite sufficient to account for the origin of all such awareness of moral and other values in human society. So Darwin, who had been less belligerently insistent than Wallace on the paramount importance of natural selection in the evolution of the body, was to be more insistent than Wallace when it came to the mental and social sphere.

These faculties (intellectual and moral) are variable; and we have every reason to believe that the variations tend to be inherited. Therefore, if they were formally of high importance to primeval man and his ape-like progenitors, they would have been perfected through natural selection. Of the high importance of the intellectual faculties there can be no doubt, for man mainly owes to them his predominant position in the world. We can see, that in the rudest state of society, the individuals who were the most sagacious, who invested and used the best weapons and traps, and who were best able to defend themselves, would rear the greatest number of offspring. The tribes which included the greatest number of men thus endowed, would increase in number and supplant other tribes ...

Turning now to the social and moral faculties. In order that primeval man, or the ape-like progenitors of man, should become social, they must have acquired the same instinctive feelings, which impel other animals to live in a body; and they no doubt exhibited the same general disposition. They would have felt uneasy when separated from their comrades, for whom they would have felt some degree of love; they would have warned each other of danger, and have given mutual aid in attack and defence. All this implies some degree of sympathy, fidelity, and courage. Such social qualities, the paramount importance of which to the lower animals is disputed by no one, were no doubt acquired by the progenitors of man in a similar manner, namely, through natural selection, aided by inherited habit. When two tribes of primeval man, living in the same country, came into competition,

if (other circumstances being equal) the one tribe included a greater number of courageous, sympathetic and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would succeed better and conquer the other ... Thus social and moral qualities would tend slowly to advance and be diffused throughout the world.¹⁸

Darwin had probably been wise to hold his own hand over the question of the origin of man until this subsequent occasion. By 1871 the concept of natural selection had taken firm root in men's minds - such firm root that Walter Bagehot had no qualms about using it in a wholly human context.

Three laws, or approximate laws, may, I think, be laid down ...

First. In every particular state of the world, those nations which are strongest tend to prevail over the others; and in certain marked peculiarities the strongest tend to be the best.

Secondly. Within every particular nation the type or types of character then and there most attractive tend to prevail; and the most attractive, though with exceptions, is what we call the best character.

Thirdly. Neither of these competitions is in most historic conditions intensified by extrinsic forces, but in some conditions, such as those now prevailing in the most influential part of the world, both are so intensified.

These are the sort of doctrines with which, under the name of "natural selection" in physical science, we have become familiar; and as every great scientific conception tends to advance its boundaries and to be of use in solving problems not thought of when it was started, so here, what was put forward for mere animal history may, with a change of form, but an identical essence, be applied to human history.¹⁹

And if the "boundaries" of "natural selection" are "advanced" beyond "mere animal history" so as to "be applied to human history", there

can surely be no great objection to its being applied to the intervening stage.

More important from our point of view, however, is the clear indication given in this passage of the extent to which the concept of evolution by natural selection had become a part of some people's habitual modes of thought. "Natural selection", survival of the fittest", "weakest to the wall" - these were becoming the intellectual catch phrases of the time. "Progress" and "development", those other nineteenth century indispensables, were almost always thought of as coming to pass by competitive rather than co-operative means.²⁰

Thus the eighteenth century situation is almost completely reversed. Then the firm belief in man's social progress had influenced slowly emerging theories of biological evolution; now a coherent and virtually proven theory of biological evolution was influencing still rather vague ideas about how man's social progress or development had been brought about. This is clearly illustrated, in a cheerful sort of way, by the following from Grant Allen:

Darwinism does not degrade our race - it elevates it. For the fall of man it substitutes the rise of man; for a hopelessly degraded lapse from an imaginary Paradise in the past it substitutes a hopeful progress towards a perfectible and realisable Paradise in the future.²¹

But just how nakedly, even brutally, Darwinian people's ideas of human progress could become is best illustrated, perhaps, by a

further pair of quotations from Bagehot.

The progress of the military art is the most conspicuous, I was about to say the most showy, fact in human history. Ancient civilization may be compared with modern in many respects, and plausible arguments constructed to show that it is better; but you cannot compare the two in military power. Napoleon could indisputably have conquered Alexander; our Indian army would not think much of the Retreat of the Ten Thousand. And I suppose the improvement has been continuous.²²

Let us consider in what a village of English colonists is superior to a tribe of Australian natives who roam about them. Indisputably in one, and that a main sense, they are superior. They can beat the Australians in war when they like; they can take from them anything they like, and kill any of them they choose.²³

Best known of the thinkers who applied this dominating theme of "struggle" to the interpretation of human affairs was probably Herbert Spencer.

To survive, every species of every creature must fulfil two conflicting requirements. During a certain period each member must receive benefits in proportion to its incapacity. After that period, it must receive benefits in proportion to its capacity. Observe the bird fostering its young or the mammal rearing its litter, and you see that imperfection and inability are rewarded; and that as ability increases, the aid given in food and warmth becomes less. Obviously this law that the least worthy shall receive most, is essential as a law for the immature: the species would disappear in a generation did not parents conform to it. Now mark what is, contrariwise, the law for the mature. Here individuals gain rewards proportionate to their merits. The strong, the swift, the keen-sighted, the sagacious, profit by their respective superiorities - catch prey or escape enemies as the case may be. The less capable thrive less, and on the average of cases rear fewer offspring. The least capable disappear by failure to get prey or from inability to escape. And by this process is maintained that average quality of the species which enables it to survive in the struggle for existence with other species. There is thus, during mature life, an absolute reversal of the principle that rules during immature life.

Already we have seen that a society stands to its citizens in the same relation as a species to its members and the truth which we have just seen holds of the one holds of the other ... Clearly with a society, as with a species, survival depends on conformity to both of these antagonistic principles. Import into the family the law of the society, and let the children from infancy upward have life-sustaining supplies proportioned to their life-sustaining labours, and the society disappears forthwith by death of all its young. Import into the society the law of the family, and let the life-sustaining supplies be inversely proportioned to the life-sustaining labours, and the society decays from the increase of its least worthy members and the disappearance of its most worthy members: it must fail to hold its own in the struggle with other societies, which allow play to the natural law that prosperity shall vary as efficiency.²⁴

One scarcely knows where to begin in one's objections to such a passage. There is Spencer's use of terms such as "worthy" and "merits" in the purely biological context of the first paragraph, presumably so as to facilitate the transfer of his analogy to a human and social context in the second paragraph, and prepare the way for his assumption that the qualities conducive to sheer survival in an utterly competitive society are necessarily the "worthiest". Then there is the way he ignores the fact that plants and lower animals can afford to be completely indifferent to the fate of their offspring, and that it is not until we reach birds, marsupials and mammals that some measure at least of care and concern for the weak and helpless acquires biological significance - a line of argument, surely, which if extended still further to human society would seem to justify an increasing level of benevolence.

Above all, perhaps, there is his chilly, bachelor's-eye view of the human family as society's means of distributing such "life-sustaining supplies" to its "least worthy" immature members as are necessary for it to "hold its own in the struggle with other societies". However, what matters from our point of view is that here, in the writings of a widely respected thinker of the time, we see very clearly the extent to which the concept of biological evolution by natural selection was permeating and influencing men's ways of thinking in general. More specifically, it is easy to see, from both Spencer²⁵ and Bagehot, how convenient some would find the theory of natural selection as means of justifying the harsher, less creditable aspects of an expanding, laissez-faire economy which, on the whole, was proving eminently able to "hold its own in the struggle with other societies".

Spencer was, of course, an arch-synthesizer, anxious not only to establish analogies between separate disciplines such as biology and sociology, but to show that there was a single, determining, unifying principle behind all branches of human knowledge - analogous in his mind to the law of gravity, but of much more universal application. To this end his life's work, entitled Synthetic Philosophy, was a many-volumed attempt to synthesize all knowledge along lines which he laid down as early as 1857, in an essay called Progress, its Law and Cause. Particularly interesting from our point of view are that Spencer drew his unifying principle in the first

place from biology, that it can be applied to biological evolution much more precisely and probably more usefully than to many of the other disciplines and areas of knowledge to which Spencer applied it, and that it was in fact none other than a law of progress, or evolution.

... let us ask what Progress is in itself.

In respect to that progress which individual organisms display in the course of their evolution, this question has been answered by the Germans. The investigations of Wolff, Goethe, and Von Baer, have established the truth that the series of changes gone through during the development of a seed into a tree, or an ovum into an animal, constitute an advance from homogeneity of structure to heterogeneity of structure ...

Now, we propose in the first place to show, that this law of organic progress is the law of all progress. Whether it be in the development of the Earth, in the development of Life upon its surface, in the development of Society, of Government, of Manufactures, of Commerce, of Language, Literature, Science, Art, this same evolution of the simple into the complex, through successive differentiations, holds throughout. From the earliest traceable cosmical changes down to the latest results of civilization, we shall find that the transformation of the homogeneous into the heterogeneous, is that in which Progress essentially consists.²⁶

Spencer is probably right in that, in those areas of human knowledge and experience where it is at all appropriate to talk of progress, there has been a development from the less complex to the more complex. Where he falls badly down is in trying to apply his principle in a field of experience where the idea of progress is inappropriate - when, for instance, he seems almost to be suggesting

that excellence and heterogeneity can be equated in Art. But even in those fields where the principle can be said to apply, it is so generalized, so vague, and probably so circular a proposition anyway, as to offer no really meaningful insight into anything - insight such as might form the basis for further hypotheses and further insight.

However, Spencer was very much in step, in this type of approach, with most nineteenth century theorizing on the subject. Progress was no longer a fact of existence merely to be noted; it had to be systematized, and given a pattern or structure. The best known example of this is probably to be found in the writings of Marx and Engels, who were both, moreover, very conscious of the support Darwinism could seem to afford to their particular mechanisms of historical development. Neither the separate lives nor the purposive endeavours of individuals within the species had any more significant rôle to play in their inevitable historical processes than they had in Darwin's biological ones. Which merely goes to show how Darwin could seem to favour political views other than Spencer's extreme laissez-faire capitalism.

Earlier than these, and eventually quite widely known in England thanks to G. H. Lewes' advocacy, had been Auguste Comte, with his law of historical progression.

M. Comte's law may thus be stated:-

Every branch of knowledge passes successively through three stages: 1st, the supernatural, or fictitious; 2nd, the metaphysical, or abstract; 3rd, the positive, or scientific... Thus in Astronomy we may trace the gradual evolution from Apollo and his chariot, to the Pythagorean ideas of numbers, Harmonies, and so many other metaphysical abstractions, to the firm basis on which it is now settled: the law of gravitation.²⁷

More Germanic, less precise, and with an option therefore on a kind of seminal profundity even today which Comte no longer enjoys, is Hegel. Progress for him is a built-in tendency or force, operating socially and racially, whose ultimate target is in one sense predetermined and inevitable, since in the last analysis all change is cyclical — a return of the particular, through various stages of being, to the general. Yet in another sense it is unknown, since the general was in some way incomplete until it manifested itself to itself in the particular. Progress has become less parochially anthropocentric, more the result of a truly cosmic process. Interestingly, this particular extract shows Hegel specifically distinguishing between change in human affairs and change in nature. Neither he (1770-1831) nor Comte (1798-1857) could have come directly under Darwin's influence, and it is obvious there was no thought in Hegel's mind as he wrote the following of any biological evolution. And yet he gives to his "impulse of Perfectibility" or "principle of Development" a strange, quasi-biological quality.

The mutations which history presents have been long characterised in the general, as an advance to something better, more perfect. The changes that take place in Nature, how infinitely manifold soever they be, exhibit only a perpetually self-repeating cycle; in Nature there happens "nothing new under the sun", and the multiform play of its phenomena so far induces a feeling of ennui; only in those changes which

take place in the region of the Spirit does anything new arise. This peculiarity in the world of mind has indicated in the world of man an altogether different destiny from that of merely natural objects - in which we find always one and the same stable character, to which all change reverts; - namely, a real capacity for change, and that for the better, - an impulse of perfectibility ... This principle of Perfectibility is almost as indefinite a term as mutability in general; it is without scope or goal, and has no standard by which to estimate the changes in question: the improved, more perfect state of things towards which it professedly leads is altogether undetermined.

The principle of Development (however) involves also the existence of a latent germ of being - a capacity or potentiality striving to realize itself. This formal conception finds actual existence in Spirit; which has the History of the World for its theatre, its possession, and the sphere of its realization. It is not of such a nature as to be tossed to and fro amid the superficial play of accidents, but is rather the absolute arbiter of things: entirely unmoved by contingences, which, indeed, it applies and manages for its own purposes ...

... In actual existence Progress appears as an advancing from the imperfect to the more perfect; but the former must not be understood abstractly as only the imperfect, but as something which involves the very opposite of itself - the so called perfect - as a germ or impulse.²⁸

Such attribution of a sense of purpose and direction to the process itself is reminiscent of Robinet. It is a neat, if ultimately perhaps not very meaningful, way of sidestepping the teleological element which, as Hegel freely admits, underlies most theories or notions of progress. One is tempted to add that it sounds much more impressive if you rename the process "Development", but this is a word which really did come to mean something in the nineteenth century -

something different from the "progress" of the eighteenth century - carrying with it an implication of process, method, mechanism. The following quotation from a letter by George Eliot shows her referring to the theory of evolution itself as the "Doctrine of Development" (Herbert Spencer - p. 93 - calls it the "development Hypothesis"), and also indicates how much it is a part of the very texture of her way of thinking that things should come to be by means of processes, or "develop".

It (i.e. The Origin of Species) makes an epoch, as the expression of his (Darwin's) thorough adhesion, after long years of study, to the Doctrine of Development - and not the adhesion of an anonym like the author of the Vestiges, but of a long-celebrated naturalist ... It will have a great effect in the scientific world, causing a thorough and open discussion of a question about which people have hitherto felt timid. So the world gets on step by step towards a brave clearness and honesty! But to me the Development theory, and all other explanations of the processes by which things came to be, produce a feeble impression compared with the mystery that underlies the process.²⁹

John Baillie, in The Belief in Progress, takes up this distinction between eighteenth century "progress" and its nineteenth century successor, "development".

Development thus implies the rejection of the notion that there is a transcendent, unchanging reality behind or beyond the historical process, and makes that process the only reality there is ... Development is no longer conceived as occurring merely within reality. Reality itself is developing.³⁰

Something like this concept lies behind all the writings of Hegel, for whom matter, life and mind are merely stages in a process

of development, as are bud and leaf or seed, plant and flower, reality consisting of the process as a whole. But Hegel, because still rooted in the eighteenth century, could, as we have seen, only allow mind to possess true, open-ended powers of progress or development - powers which, standing on the shoulders of past development, increase with time. Similarly, Schelling (1775-1854), Schopenhauer (1788-1860) and his disciple von Hartmann (1842-1906) personified, in quasi-mystical fashion, the overall powers and processes of development of the physical world as the Unconscious or the Will. But though Schopenhauer and von Hartmann were ultimately pessimists and could see no continuing and improving future to development of this kind, Schelling went so far as to conceive of God Himself coming to be and developing through the processes of nature and history.³¹

All of which underlies a strange paradox. On the one hand, the theories, systems, laws of historical progress which the nineteenth century gave birth to came to bear more and more resemblance to those of geological and biological progress. They became more and more autonomous, inexorable and process-like, less and less the manifestation of anything other than themselves - least of all a deity. In some cases they were even, as we have seen, directly influenced by Darwinism, or conceived of as a sort of continuation of biological natural selection. (Bagehot subtitled Physics and Politics - a suggestive enough title - Thoughts on

the applications of the Principles of "Natural Selection" and "Inheritance" to Political Society. And Nietzsche (1844-1900), though a non-progressive in the sense that he held the universe to be based on a system of endless recurrence, nevertheless based much of his theorising about the aspirations of man, and the need to reject the Christian virtues of humility and kindness, on an expanded version of Darwinism. Yet on the other hand, with the increasing disappearance of any other kind of ultimate reality, there was this strange propensity for their authors and their adherents to become quite mystical about, almost at times to deify, the processes themselves. Thus Hegel made his principle of Development imperiously override any mere "play of accidents" - whereas, of course, natural selection may virtually be said to consist of the play of accidents. Thus the dialectical materialism of Marx and Engels has acquired many of those same transcendental attributes which they found so reprehensible in former objects of human piety. And thus Bergson and the creative evolutionists, at and beyond the turn of the century, tried to elevate biological evolution itself to a level more worthy of their rhapsodical veneration.

Bergson and his followers accepted all that Darwin had to teach them about the extent of evolution, but rejected what he had to say about the means. Like Samuel Butler, they were horrified at the mechanistic character of pure Darwinian natural selection. Unlike him, however, they were not content merely to restore to

individual creatures a Lamarckian power to help shape their species' evolutionary destinies. Instead, borrowing the concept of a Vital or Life Force (i.e. that which gives a body life) from a now forgotten school of physiologists, they inflated it into a pulsating, dynamic, creative force which expresses itself within, and hence directs, the whole course of evolution. There is an obvious similarity to Robinet's puissance active, but there are also strong Hegelian and later nineteenth century overtones (though in fact Bergson does not once, throughout Creative Evolution, mention Hegel by name). For instance the following passage, even more insistently than Hegel, presents the initiating elan vital or "impulse of perfectibility" as being no more than an impulse, implying no kind of teleologically predetermined target, yet emphasising its power and upward tendency. The Life Force is, it seems both purposive and blind.

No doubt there is progress, if progress mean a continual advance in the general direction determined by a first impulsion; but this progress is accomplished only on the two or three great lines of evolution on which forms ever more and more complex, ever more and more high, appear; between these lines run a crown of minor paths in which, on the contrary, deviations, arrests, and set-backs are multiplied ... We must recognise that all is not coherent in nature ... We shall not witness the detailed accomplishment of a plan. Nature is more and better than a plan in course of realization. A plan is a term assigned to a labour: it closes the future whose form it indicates. Before the evolution of life, on the contrary, the portals of the future remain wide open. It is a creation that goes on for ever in virtue of an initial movement.³²

Clearly Bergson and those who thought like him, in trying to avoid the two extremes of mechanism and teleology, were unfairly determined to have the best of both. Nevertheless, and in spite of their irritating and inappropriate lyricism, they did speak for many who, while accepting in the main the proposed Darwinian mechanisms of progress, still hankered after a more positive underlying parental principle than mere chance. They also voiced a nagging and persisting sense, even among some scientists, of the inadequacy of natural selection to account unaided for, on the one hand the riotous proliferation of species as a whole, and on the other the extraordinary complexity of certain species. Mere survival, one feels, could have been achieved more economically; after all, many of the earliest and simplest forms of life have in fact survived. Certainly, when it comes to man, Bergsonians are joined by many scientists in expressing dissatisfaction with natural selection as a sufficient explanation of the emergence and development of human nature and human society as we know them. Wallace himself had deeply angered Darwin by eventually coming to suppose that "some higher intelligence may have directed the process by which the human race was developed".³³ And yet, ironically, he had been able to cite in his support, only a few pages earlier, Darwin himself as having "taken care to impress upon us that natural selection has no power to produce absolute perfection, no power to advance any being much beyond his fellow beings, but only

just so much beyond them as to enable it to survive them in the struggle for existence." And truly, mankind would seem to have outstripped other animals by rather more than was strictly needful to ensure his survival. Even the competition of man with man would be hard put to it to account for a good many of his achievements.

T. H. Huxley, in his Romanes Lecture of 1893, while calling in no "higher intelligence" as Wallace had done, is equally unconvinced that natural selection can account for the ethical bases of society.

There is another fallacy which appears to me to pervade the so called "ethics-of-evolution". It is the notion that because, on the whole, animals and plants have advanced in perfection of organization by means of the struggle for existence and the consequent "survival of the fittest", therefore men in society, men as ethical beings, must look to the same process to help them towards perfection ...

Men in society are undoubtedly subject to the cosmic process. As among other animals, multiplication goes on without cessation and involves severe competition for the means of support. The struggle for existence tends to eliminate those less fitted to adapt themselves to the circumstances of their existence. The strongest, the most self-assertive, tend to tread down the weaker. But the influence of the cosmic process on the evolution of society is the greater the more rudimentary its civilization. Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process; the end of which is not the survival of those who may happen to be the fittest, in respect of the whole of the conditions which exist, but of those who are ethically the best ...

Let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combatting it.³⁴

And his grandson, Sir Julian Huxley, considers that evolution, having been directionless and mechanistic until the emergence of human civilization, can now continue and be given a sense of direction and of values by the conscious efforts of mankind. This ^{surely} reaches the nub of the matter. When Darwin invoked his "inherited habits" as an aid to natural selection in the evolution of tribal man, he seemed quite to overlook the fact that habits are more usually caught or inculcated. For surely, with the careful and extended upbringing and training given to human offspring by the family and society, and particularly since the advent of language (and writing, and printing, and libraries, etc.), human evolution has become "Lamarckian". Acquired characteristics can - like acquired possessions - be inherited by our children, if not by nature, then certainly by nurture. After all, if domestic animals need no longer rely on natural selection, because their owners can perform its functions so much more efficiently themselves, why should we assume that human society and civilization are still dependant on or subject to it?

To conclude, after the publication of The Origin of Species, the theory of natural selection came under heavy scientific attack, but survived almost unscathed, to be confirmed and strengthened by much subsequent work on genetics.

More relevant from our point of view, Darwinism was the centre of fierce religious controversy, and seemed to many to provide great

support for those who sought to explain the universe in wholly mechanistic terms, and therefore to constitute a grave threat to religious values.

Among those who accepted Darwinism, its influence was considerable, and soon extended far beyond the usual confines of biology. Darwin himself, in The Descent of Man, argued that natural selection could have accounted for the initial development of social and moral standards in human communities, and Herbert Spencer and others extended this relevance of natural selection to include the history, politics, sociology and philosophy of more modern man.

Finally, there were those who, while accepting Darwinian mechanisms of biological improvement, did not accept that they were manifestations of an ultimately mechanistic reality - preferred to think of them as the channel through which an ultimately non-mechanistic reality expressed itself. For some, this ultimate reality was still the Christian god. For others, notably Bergson, it took the form of what came to be called a Life-Force. This Life-Force was dynamic, thrusting, purposeful almost, in a blind kind of way - yet wholly impersonal, unconscious and non-teleological in its workings.

CHAPTER IV

EVOLUTION AND THE ROMANTICS

After Erasmus Darwin the subject of evolution virtually disappears from English poetry for several decades. Indeed, as we have seen, poetry of the kind likely to give expression to such scientific theories had, with the exception of the Darwin throw-back, been written less and less towards the end of the eighteenth century. And the full-throated outbreak of romanticism intensified this tendency with its reaction away from the rationalism of so many aspects to eighteenth century life - and not least the rationalism of its poetry.

Not that the romantic poets, with the exception of Blake, were particularly hostile to science as such. Coleridge conducted a lifelong love-hate relationship with it, such as is possible only between intimates. And Shelley was fascinated by aspects of it, and always willing to use it as raw material for his poetry where it sufficiently engaged his imagination. A famous and elementary example occurs in The Cloud.

I am the daughter of Earth and Water,
And the nursling of the Sky;
I pass through the pores of the ocean and shores,
I change, but I cannot die.
For after the rain when with never a stain
The pavilion of Heaven is bare,

And the winds and sunbeams with their convex gleams
 Build up the blue dome of air,
 I silently laugh at my own cenotaph,
 And out of the caverns of rain,
 Like a child from the womb, like a ghost from the tomb
 I arise and unbuild it again.¹

But no longer is it merely a question of scientific "thoughts translated into the language of poetry". As Wordsworth puts it in the Preface to the Second Edition of Lyrical Ballads;

The remotest discoveries of the Chemist, the Botanist, or the Mineralogist, will be as proper objects of the Poet's art as any upon which it can be employed, if the time should ever come when these things shall be familiar to us, and the relations under which they are contemplated by the followers of these respective sciences shall be manifestly and palpably material to us as enjoying and suffering beings.²

Poetry is no longer, therefore, an appropriate medium for informing us of scientific discoveries or theories, but is qualified to handle such knowledge once it has become so familiar as to have entered into and become a part of the emotional and imaginative texture of our lives. For poetry has become, as every schoolboy knows, "the spontaneous overflow of powerful feelings" - the vehicle not of the truths of reason, but of emotional truth.

Then again, the whole subject was one which, despite Darwin, became associated in many people's minds with France and Frenchmen (Lamarck and Geoffroy St. Hillaire, for instance); and the Napoleonic and immediately post-Napoleonic period was one when most things French were suspect. Added to this, the theory was obviously

subversive from a religious point of view, and bound to encounter hostility from the faithful - who were probably both more faithful and more vociferous about it than their eighteenth century counterparts.

Belief there still was in progress; even the later Wordsworth could write, albeit somewhat grudgingly:

The vast Frame

Of social nature changes evermore
 Her organs and her members, with decay
 Restless, and restless generation, powers
 And functions dying and produced at need, -
 And by this law the mighty whole subsists:
 With an ascent and progress in the main;
 Yet oh! how disproportioned to the hopes
 And expectations of self-flattering minds!³

VII: 1000

Wordsworth himself had, presumably, been one of these same "self-flattering minds" at the time of his enthusiasm for France. As for biological progress, however, it is clear that so far as Wordsworth is concerned creation is still a fixed hierarchy.

Happy is he who lives to understand,
 Not human nature only, but explores
 All natures, - to the end that he may find
 The law that governs each; and where begins
 The union, the partition where, that makes
 Kind and degree, among all visible Beings;
 The constitutions, powers, and faculties,
 Which they inherit, - cannot step beyond, -
 And cannot fall beneath; that do assign
 To every class its station and its office,
 Through all the mighty commonwealth of things;
 Up from the creeping plant to sovereign Man.⁴

IV: 340

This too is an extract from The Excursion, but there seems to be no evidence that his views on this subject had changed - that an earlier, more radical Wordsworth had ever held biologically radical

views.

The romantic poet who is most aware of, and most - though tantalizingly - interesting on evolution is Coleridge. As one would expect, he is well-read on the subject. There are a dozen or more references to Darwin in his letters, one at least of which clearly indicates that he knew of Darwin's evolutionary views, and another of which refers to views which Darwin expresses only in Zoonomania.⁵ It is also almost certain that he met the theory in his reading of Kant (see Ch. I, note 24), and we know that he owned a copy of Hutton's Theory of the Earth,⁶ and even, the year before his death, read the first volume of Lyell's Principles of Geology.⁷

Even on so seemingly innocuous and widely accepted a proposition as progress in the affairs of mankind, however, he is reluctant to commit himself, as is shown in this early letter to Wedgewood.

Before I left England I had read the book of which you speak (Malthus's Essay on Population) - I must confess, that it appeared to me exceedingly illogical. Godwin's and Condorcet's Extravagancies were not worth confuting; and yet I thought that the Essay on Population had not confuted them ...

But do not, my dear Sir! suppose that because unconvinced by this Essay I am therefore convinced of the contrary. - No! God knows - I am sufficiently sceptical and in truth more than sceptical, concerning the possibility of universal Plenty and Wisdom but my doubts rest on other grounds. - I had some conversation with you before I left England on this subject; and from that time I had proposed to myself to examine as thoroughly as it was possible for me the important Question - Is the march of the Human Race progressive, or in Cycles? - But more of this when we meet.⁸

And when, in The Friend, he goes so far as to discuss the actual

nature of progress, he begins with an equivocation, and then allows for as circuitous a kind of progress as possible.

Let us allow and believe that there is a progress in the species (i.e. mankind) towards unattainable perfection, or whether this be so or not, that it is a necessity of a good and greatly-gifted nature to believe it; surely it does not follow that this progress should be constant in those virtues and intellectual qualities, and in those departments of knowledge, which in themselves absolutely considered are of most value, things independent and in their degree indispensable. The progress of the species neither is nor can be like that of a Roman road in a right line. It may be more justly compared to that of a river, which, both in its smaller reaches and larger turnings, is frequently forced back towards its fountains by objects which cannot otherwise be eluded or overcome; yet with an accompanying impulse that will insure its advancement hereafter, it is either gaining strength every hour, or conquering in secret some difficulty, by a labour that contributes as effectually to further it in its course, as when it moves forward uninterruptedly in a line, direct as that of the Roman road with which I began this comparison.⁹

Nevertheless, we may well feel, on reading such a description of human progress, that it is a good deal closer in spirit to the truly organic, unpredetermined, trial-and-error kind of biological progress outlined in The Origin of Species than many more rigid, "progressionist" theories to be met later in the century. This still holds even when, elsewhere in The Friend, Coleridge obviously experiences a need, when referring to the "works of nature", to be able to talk in terms of "final causes". He acknowledges a strong pre-disposition towards "a belief that the productive power, which in nature acts as nature, is essentially one (that is, of one kind) with the intelligence, which is in the human mind above nature ... Hence proceeds the introduction

of final causes in the works of nature equally as those in man."¹⁰
 This, of course, would imply as markedly a teleological form of biological progress (if such exists) as that postulated by the "progressionists", but there are other forms of teleology than the successive special creations of "progressionism".

Just such a combination of teleology and organic development is implied by a marginal note which Coleridge wrote on the following passage from an article, published in 1818, by Geoffroy St. Hilaire.¹¹

Nature constantly employs the same materials, and only displays her ingenuity in varying their forms ... If one organ is found of an extraordinary size, the neighbouring parts are less developed; yet each of them is not the less preserved, although in a degree so minute as frequently to render them almost useless. They become so many rudiments, which bear witness in some measure to the permanence of the general plan.¹²

Coleridge's comment on this reads as follows:

i.e. in the simplest living organism, ex. gr., the Polyp, all the powers of life are potentially contained in the lowest; but as productive power cannot be without product, we must assume, even in the minimum of energy, a correspondent minimum of Product - and a production bearing the character of potentiality, answering to the potential state of the productivity - viz., of no or obscure use to the animal, yet prophetic of an important function in some higher genus or species - or again historic of a bygone use.¹³

The phrase "prophetic of an important function in some higher genus or species" indicates a final cause at work, while the alternative "historic of a bygone use" seems very clearly to imply genuine biological development or evolution, whether teleological or not,

rather than successive special creations.

Certainly I am not wholly convinced by G.R. Potter's suggestion¹¹ that, at this date at all events, Coleridge believed in successive and progressive acts of creation on the part of God as the only possible explanation of the increasingly inescapable evidence that, in one sense or another, life was progressive. Granted that three years earlier, in a letter to Wordsworth in 1815 on the subject of the proposed plan, as Coleridge remembered it, of The Recluse, he wrote thus:

Next, I understood that you would take the Human Race in the concrete, have exploded the absurd notion of Pope's Essay on Man, Darwin, and all the countless Believers - even (strange to say) among Xtians of Man's having progressed from an Ouran Outang state - so contrary to all History, to Religion, nay to all Possibility - to have affirmed a Fall in some sense, as a fact, the possibility of which cannot be understood from the nature of the Will, but the reality of which is attested by Experience and Conscience.¹⁴

It is interesting to note, in passing, how widespread - if we can believe Coleridge's somewhat sweeping assertion - the belief in some kind of biological development had become. However, Coleridge dissociates himself from any such belief. And even more trenchantly so, in an extract from a notebook which was not brought to light till two years after Potter wrote his article.

And here once for all, I beg leave to remark that I attach neither belief nor respect to the Theory, which supposes the human race to have been gradually perfecting itself from the darkest Savagery, or still more boldly

tracing us back to the bestial as to our Larva, contemplates Man as the last metamorphosis, the gay Image, of some lucky species of Ape or Baboon. Of the two hypotheses I should, indeed, greatly prefer the Lucretian of the Parturiency of our Mother Earth, some score thousands years ago, when the venerable Elder was yet in her Teens, and her human Litter sucked the milk then oozing from the countless Breasts of warm and genial Mud. For between an hypothetical ... single Incident or Event in a state and during an epoch of the Planet presumed in all respects different from its present condition, and the laws of Nature appropriate to the same, a difference, for the historical verity of which in a smaller extent the metals and their positions have been (thought?) to furnish a plausible argument - between a single and temporary Event, anterior of necessity to all experience, and an assertion of a universal process of Nature now existing (since there is the same reason for asserting the progression of every other race of animal from some lower species) in contradiction to all experience, I can have no hesitation in preferring the former, that, for which Nothing can be said, to that against which Everything may be said. The History I find in my Bible is in perfect coincidence with the opinions which I should form on Grounds of Experience and Common Sense.¹⁵

Almost the gentleman doth protest too much. Clearly his only objection in the first extract, and his main one in the second, is to "Man's having progressed from an Ouran Outang state". One feels that his strong preference for a "single and temporary event, anterior of necessity to all experience" as against "a universal Process of nature now existing" would be much weakened, if not disappear, if the latter could be confined to the development of sub-human species only, and leave untouched the special creation of man. At all events the "explanation" which Coleridge is in search of in his admittedly much later The Theory of Life (1848) and which he is as it were

adumbrating or attempting to define in this next extract, seems remarkably like the "universal process of Nature" he so summarily dismisses above, or at least singularly in keeping with it.

To explain a power, on the other hand, is (the power itself being assumed, though not comprehended, ut qui datur, non intelligitur,) to unfold or spread it out: ex implicito planum facere. In the present instance, such an explanation would consist in the reduction of the idea of Life to its simplest and most comprehensive form or mode of action; that is, to some characteristic instinct or tendency, evident in all its manifestations, and involved in the idea itself. This assumed as existing in Kind, it will be required to present an ascending series of corresponding phenomena as involved in, proceeding from, and so far therefore explained by, the supposition of its progressive intensity and of the gradual enlargement of its sphere, the necessity of which again must be contained in the idea of the tendency itself. In other words, the tendency having been given in kind, it is required to render the phenomena intelligible as its different degrees and modifications. Still more perfect will the explanation be, should the necessity of this progression and of these ascending gradations be contained in the assumed idea of life, as thus defined by the general form and common purport of all its various tendencies. This done, we have only to add the conditions common to all its phenomena, and those appropriate to each place and rank, in the scale of ascent, and then proceed to determine the primary and constitutive forms, i.e. the elementary powers in which this tendency realizes itself under different degrees and conditions.¹⁶

What is being sought here is, admittedly, the mechanism of life itself, not merely that of life's successive improvements or gradations. Yet Coleridge is anxious that the "explanation" or mechanism or principle for which he is searching should account for, almost before it accounts for anything else, this same progressive

nature to life. And the only mechanisms or theoretical principles even attempting to do this, apart from the theory of progressive creations, were evolutionary ones. The passage was clearly not written by a believer in progressive creations. Its whole spirit is antipathetic to any such view point. Whereas, though it studiously skirts round making any comment on the possibility of life's having improved and developed progressively, its whole style and spirit is redolent of its writer's mind's being very well acquainted with, and by no means hostile towards, the development hypothesis.

Most conclusive of all, in 1819, shortly after the publication of the article by Geoffroy St. Hilaire to which Coleridge added the marginal note quoted above, there is the following entry in another of his notebooks.

We might as well attempt to conceive more than the three dimensions of space, as to imagine more than three kinds of living existence - God, man, and beast. And even of these the last (division) is obscure, and scarce endures a fixed contemplation without passing into an unripe or degenerated humanity.¹⁷

The previous, anti-evolution extract from a notebook is undated, but assuming it to be about contemporary with the letter to Wordsworth, or earlier, it seems either as if between about 1815 and 1819 Coleridge overcame his religious scruples sufficiently to admit the possibility of some sort of "process" of biological improvement (and degeneration?), or (and this is perhaps more likely) as if Coleridge, though gradually becoming more aware of the strength of the evolutionary case and

possibly more sympathetic towards it, never really made up his mind. In an early poem, The Eolian Harp, he had described how he could be sensible simultaneously of the fascination and of the perils of an unorthodox belief.

As we have seen, the clearest glimpses into what we will assume to be his ambivalent state of mind are afforded, not surprisingly, by the private, fragmentary, and therefore discontinuous and permissibly inconsistent, jottings of his notebooks. It will come as no great surprise, therefore, to discover that Coleridge's poetry reflects little or nothing of this inner debate. The early Religious Musings (1794) presents a fairly orthodox picture of an ordered and God-pervaded universe.

'Tis the sublime of man,
Our noontide majesty, to know ourselves
Parts and proportions of one wondrous whole!
This fraternises man, this constitutes
Our charities and bearings. But 'tis God
Diffused through all, that doth make all one whole
This the worst superstition, him except
Aught to desire, Supreme Reality!
The plenitude and permanence of bliss!¹⁸

Probably some four or five years later Coleridge wrote Hymn to the Earth (published 1817), a poem in overflowing hexameters which might even have been chosen to suggest the plenitude of their subject matter. These closing lines are strangely reminiscent of Coleridge's reference, in the passage quoted above from his notebook, to the Lucretian "Parturiency of our Mother Earth". Certainly it is a special

and simultaneous rather than progressive, creation he describes.

Say, mysterious Earth! O say, great mother and goddess,
 Was it not well with thee then, when first thy lap was
 ungirdled,
 Thy lap to the genial Heaven, the day that he wooed thee
 and won thee!
 Fair was thy blush, the fairest and first of the blushes
 of morning!
 Deep was the shudder, O Earth! the throe of thy self-
 retention:
 Inly thou strovest to flee, and didst seek thyself at thy
 centre!
 Mightier far was the joy of thy sudden resilience; and
 forthwith
 Myriad myriads of lives teemed forth from the mighty
 embracement.
 Thousand-fold tribes of dwellers, impelled by thousand-
 fold instincts,
 Filled, as a dream, the wide waters; the rivers sang on
 their channels;
 Laughed on their shores the hoarse seas; the yearning
 ocean swelled upward;
 Young life lowed through the meadows, the woods, and the
 echoing mountains,
 Wandered bleating in valleys, and warbled on blossoming
 branches.¹⁹

And in 1816, the year following the letter to Wordsworth about The Recluse, he wrote Human Life, on the Denial of Immortality, a short poem which very clearly shows his antipathy to any philosophy of life which puts us at the mercy of blind chance.

If the breath
 Be life itself, and not its task and tent,
 If even a soul like Milton's can know death;
 O Man! thou vessel purposeless, unmeant,
 Yet drone-hive strange of phantom purposes!
 Surplus of nature's dread activity,
 Which, as she gazed on some nigh-finished vase,
 Retreating slow, with meditative pause,
 She formed with restless hands unconsciously!
 Blank accident! nothing's anomaly!

If rootless thus, thus substanceless thy state,
 Go, weigh thy dreams, and be thy hopes, thy fears,
 The counter-weights! - Thy laughter and thy tears
 Mean but themselves, each fittest to create,
 And to repay the other! ...
 Be sad! be glad! be neither! seek, or shun!
 Thou hast no reason why! ...²⁰

The subject of progress or evolution does not arise in this, or indeed any of his poems, but clearly, judging by this poem (and by much of the prose we have examined), if it did it would need to be a progress directed by final causes. And yet, if we are to judge by such clues as he gives us, a series of progressive creations, though this would unquestionably be directed by final causes, is not to his way of thinking either. He is too steeped in the thought of his time²¹ not to know that, if progress occur, whether in human or in biological affairs, it will occur as a process, and that to find all feasible processes unacceptable is tantamount to denying that the progress in question can take (or have taken) place.

This is an issue on which, perhaps not surprisingly, Coleridge never came to a final conclusion. Apart from anything else, it was obviously not of as great importance or urgency to him as a number of other intellectual dilemmas. Certainly it never impinged even remotely on the writing of such poetry as he is remembered for - notwithstanding Livingstone Lowes' discovery that Coleridge owed several phrases or images in The Ancient Mariner to the prose notes accompanying The Botanic Garden.

Of the rest of the romantics, Byron shows most evidence of being informed, in a casual sort of way, about current theories in geology and biology. Naturally enough, Erasmus Darwin earns himself a place in English Bards and Scotch Reviewers.²² But the footnote "The neglect of the 'Botanic Garden' is some proof of returning taste" indicates that, like so many others, Byron had read no further in Darwin than The Botanic Garden - and not very far even in that, perhaps. Cuvier and catastrophism he was certainly familiar with, however, using the theory for peculiarly his own ends. In the prose preface to Cain (1821) he explains the twist he allows Lucifer to impart to the "notion of Cuvier."

The reader will perceive that the author has partly adopted in this poem the notion of Cuvier, that the world had been destroyed several times before the creation of man. This speculation, derived from the different strata and the bones of enormous and unknown animals found in them, is not contrary to the mosaic account, but rather confirms it; as no human bones have yet been discovered in those strata, although those of many known animals are found near the remains of the unknown. The assertion of Lucifer, that the pre-Adamite world was also peopled by rational beings much more intelligent than man, and proportionably powerful to the mammoth, etc., etc., is, of course, a poetical fiction to help him to make out his case.²³

Byron seems attached to this idea of successive shrinkage, and uses it again in Don Juan (Canto IX), projecting it into the future so as to allow him to envisage a race of pigmy humans excavating the monster George IV.

XXXVII

But let that go: - it will one day be found
 With other relics of "a former world,"
 When this world shall be former, underground,
 Thrown topsy-turvey, twisted, crisp'd, and curl'd,
 Baked, fried, or burnt, turn'd inside-out, or drown'd,
 Like all the worlds before, which have been hurl'd
 First out of, and then back again to chaos,
 The superstratum which will overlay us.

XXXVIII

So Cuvier says; - and then shall come again
 Unto the new creation, rising out
 From our old crash, some mystic, ancient strain
 Of things destroy'd and left in airy doubt:
 Like to the notions we now entertain
 Of Titans, giants, fellows of about
 Some hundred feet in height, not to say miles,
 And mammoths, and your winged crocodiles.

XXXIX

Think if then George the Fourth should be dug up!
 How the new worldlings of the then new East
 Will wonder where such animals could sup!
 (For they themselves will be but of the least:
 Even worlds miscarry, when too oft they pup,
 And every new creation hath decreased
 In size, from overworking the material -
 Men are but maggots of some huge Earth's burial.)

XL

How will - to these young people, just thrust out
 From some fresh Paradise, and set to plough,
 And dig, and sweat, and turn themselves about,
 And plant, and reap, and spin, and grind, and sow,
 Till all the arts at length are brought about,
 Especially of war and taxing, - how,
 I say, will these great relics, when they see 'em,
 Look like the monsters of a new museum?²⁴

Needless to say, there is no telling from either Cain or Don Juan
 whether Byron believed in Cuvier's theories, or merely used them.

The question is irrelevant - for us, and probably for Byron himself. All one can say is that catastrophism certainly seemed to carry no "progressive" overtones for Byron.

Leaving geology and biology aside, progress in the poems of Byron and Shelley, is not always easily distinguishable from freedom, and both are things to be achieved by human endeavour - things which may or may not be achieved. This can be seen from the opening lines to The Age of Bronze.

The "good old times" - all times when old are good -
Are gone; the present might be if they would;
Great things have been, and are, and greater still
Want little of mere mortals but their will ...²⁵

There is no sense of inevitability here at all, and a very real sense that what has been won may be lost, and what remains to be won may never be won. "Mere mortals" do not so readily die for causes which they know must succeed, whether they bestir themselves or not.

Byron's attitude gives a clue, I think, to that of Shelley. At first sight one cannot credit that someone as interested in and attracted by other scientific theories should choose to pay no heed to that of evolution, unless he were ignorant of it. But this is hard to believe. True, when he writes to Hogg, in 1811

I amuse myself, however, with reading Darwin, climbing
rocks, and exploring scenery. Amusement!²⁶

he is almost certainly referring to The Botanic Garden. But our grounds for being so certain of this are that during the following

year he orders two long lists of books from two London booksellers, the one list including the title Zoonomania, and the other The Temple of Nature.²⁷ And one would have thought that, with Shelley's obsessive need to belabour religion, evolution - despite Darwin's perfunctory deism²⁸ - would have seemed to him a useful stick. He is, for instance, quite willing to defend d'Holbach against Godwin (who attacked his materialistic necessitarianism and consequent denial of the possibility of altruism - an attack one would have expected Shelley to second) largely because his La Systeme de la Nature is so uncompromising in its opposition to religious belief.²⁹ Moreover, though Shelley never expresses the evolutionary hypothesis itself in his poetry, the following extract from Prometheus Unbound clearly shows that he was aware of the kinds of discoveries which were being made through excavation, and of the monstrous and extinct nature of many of the fossil forms of life which Cuvier and others were unearthing. Panthea speaks of "vast beams" of light which

Pierce the dark soil, and as they pierce and pass,
 Make bare the secrets of the earth's deep heart;
 Infinite mines of adamant and gold, IV: 280
 Valueless stones, and unimagined gems,
 And caverns on crystalline columns poised
 With vegetable silver overspread;
 Wells of unfathomed fire, and water springs
 Whence the great sea, even as a child is fed,
 Whose vapours clothe earth's monarch mountain-tops
 With kingly, ermine snow. The beams flash on
 And make appear the melancholy ruins
 Of cancelled cycles; anchors, beaks of ships;
 Planks turned to marble; quivers, helms, and spears, 290
 And gorgon-headed targes, and the wheels

Of scythed chariots, and the emblazonry
 Of trophies, standards, and armorial beasts,
 Round which death laughed, sepulchred emblems
 Of dead destruction, ruin within ruin!
 The wrecks beside of many a city vast,
 Whose population which the earth grew over
 Was mortal, but not human; see, they lie,
 Their monstrous works, and uncouth skeletons,
 Their statues, homes and fanes; prodigious shapes 300
 Huddled in grey annihilation, split,
 Jammed in the hard, black deep; and over these,
 The anatomies of unknown winged things,
 And fishes which were isles of living scale,
 And serpents, bony chains, twisted around
 The iron crags, or within heaps of dust
 To which the tortuous strength of their last pangs
 Had crushed the iron crags; and over these
 The jagged alligator, and the might
 Of earth-convulsing behemoth, which once 310
 Were monarch beasts, and on the slimy shores,
 And weed-overgrown continents of earth,
 Increased and multiplied like summer worms
 On an abandoned corpse, till the blue globe
 Wrapped deluge round it like a cloak, and they
 Yelled, gasped, and were abolished; or some God
 Whose throne was in a comet, passed, and cried,
 'Be not!' And like my words they were no more.³⁰

There are, however, a number of contradictions and inconsistencies within the passage which seem to disqualify it even as evidence that Shelley regarded the catastrophism he appears to be subscribing to in the closing lines as particularly progressive. Still less, therefore, can it be taken as evidence that Shelley held evolutionary views. First, one is given the clear impression early in the extract that the "vast beams" are striking further and further down into the earth ("... and as they pierce and pass ...", "The beams flash on ..."), with the result that the secrets they reveal reach further and further back in time. And Shelley seems to imply quite clearly that he understands

the successive antiquity of descending strata by the lines:

The wrecks beside of many a city vast,
 Whose population which the earth grew over
 Was mortal, but not human ...

Moreover, the order in which he describes the remains is the correct one - human civilizations, pre-human society or civilization, prehistoric monsters. And yet, after the description of the remains of civilizations of one kind or another, and in connection with the remains of extinct monsters, there occurs, as introduction to a still earlier layer of remains, the twice-repeated phrase "and over these" rather than "and under these".

Secondly, on re-reading more closely the descriptions of human remains, the wording of "the melancholy ruins/ Of cancelled cycles" might give one pause. And having paused, one might further consider whether the admittedly "uncouth skeletons" who were "mortal, but not human" were so necessarily sub-human. What precisely is meant by "monstrous works" and "prodigious shapes"? There is almost a "Titanic" quality to them which reminds one irresistably of the passage from Don Juan (though here there is no elusively flippant tone) and makes it far from certain that Shelley did regard these buried remains as a temporal record of developing forms of life and society.

In support of this, it is clear from a reading of many of Shelley's more important works (The Revolt of Islam, Prometheus Unbound, Hellas) that, while subscribing to Godwin's belief in human perfectibility, Shelley regarded such future progress in human affairs (again

virtually synonymous with the attainment of liberty) as something to be fought for and won, not awaited passively. The mythology employed (whether eagle and serpent in The Revolt of Islam, or Prometheus and Jupiter, or Greece and Turkey) always implies a struggle between good and evil. There is an evil element to be defeated and driven out, after which all will be well. And there is the corresponding possibility, presumably, that evil may triumph. The whole ethos is poles apart from a slow, inevitable historical process leading gradually and implacably upward like a sort of benevolent juggernaut. Shelley's was too ardent and too altruistic, (or too would-be altruistic) a nature to be attracted by anything of this latter kind. Hence presumably, he rejected - or ignored - its biological counterpart as found in Darwin.

Keats, the poet-surgeon, is silent - in his writings at all events - on the subject of evolution and on any but the most remotely connected of allied subjects, except in this strange and isolated passage from a poetic letter to Reynolds, in which he shows himself (and presumably others) to be well aware of the ruthless struggle for life which goes on all around us. Creation has become a competitive nineteenth century rather than a co-operative eighteenth century affair, and once poetry has recovered from Wordsworth and Coleridge's quasi-mystical relationship with "rocks and stones, and trees", it will be ready to describe nature as being "red in tooth and claw".

Dear Reynolds! I have a mysterious tale,
 And cannot speak it: the first page I read
 Upon a lampit rock of green sea-weed
 Among the breakers - 'Twas a quiet eve;
 The rocks were silent - the wide sea did weave
 An untumultuous fringe of silver foam
 Along the flat brown sand. I was at home,
 And should have been most happy - but I saw
 Too far into the sea; where every maw
 The greater on the less feeds evermore: -
 But I saw too distinct into the core
 Of an eternal fierce destruction,
 And so from happiness I far was gone.
 Still am I sick of it: and though today
 I've gathered young spring-leaves, and flowers gay
 Of periwinkle and wild strawberry,
 Still do I that most fierce destruction see,
 The shark at savage prey - the hawk at pounce, -
 The gentle robin, like a pard or ounce,
 Ravening a worm - Away, ye horrid moods!
 Moods of one's mind! You know I hate them well.³¹

After Darwin, or even Pope, it is a relief to read someone for whom to see "too distinct into the core/ Of an eternal fierce destruction" is a profoundly disturbing experience.

Finally, there is a strange evolutionary passage from the work of another student of medicine, Thomas Lovell Beddoes. The poem in question, Death's Jest Book, was written in the main between 1825 and 1828, though Beddoes continued to revise and add to it for many years after that, and it was not published until 1850, after his death. As it is impossible to date it at all precisely, the extract is largely of curiosity value, though since Beddoes went to Germany to study medicine in 1825, at a time when the embryological studies of Tieddmann and von Baer were at their height, he may well have been in a position

to write these lines during those first three years of composition.

A king's a man, and I will be no man
 Unless I am a king. Why, where's the difference?
 Throne-steps divide us: they're soon climbed perhaps:
 I have a bit of FIAT in my soul,
 And can myself create my little world.
 Had I been born a four-legged child, methinks
 I might have found the steps from dog to man,
 And crept into his nature. Are there not
 Those that fall down out of humanity,
 Into the story where the four-legged dwell?...

It was ever

My study to find out a way to godhead,
 And on reflection soon I found that first
 I was but half-created; that a power
 Was wanting in my soul to be its soul,
 And this was mine to make. Therefore I fashioned
 A will above my will, that plays upon it
 As the first soul doth use in men and cattle.
 There's lifeless matter; add the power of shaping,
 And you've the crystal: add again the organs,
 Wherewith to subdue sustenance to the form
 And manner of oneself, and you've the plant:
 Add power of motion, senses, and so forth,
 And you've all kinds of beasts; suppose a pig:
 To pig add reason, foresight, and such stuff,
 Then you have man. What shall we add to man,
 To bring him higher? I begin to think
 That's a discovery I soon shall make.
 Thus owing nought to books, but being read
 In the odd nature of much fish and fowl,
 And cabbages and beasts, have I raised myself,
 By this comparative philosophy,
 Above your shoulders, my sage gentlemen.
 Have patience but a little, and keep still,
 I'll find means, bye and bye, of flying higher.³²

The steps of his thought are almost Aristotelean, though the suggestion that species may actually mutate is clearly nineteenth century, while the language and spirit of the piece is curiously

akin to that of Paracelsus and the alchemists. Lionel Stevenson, in Darwin Among the Poets, even suggests that Browning may have read the poem in manuscript before writing his Paracelsus (1835), or that Bèddoes added the passage after reading Browning's poem, but this is purest conjecture.

All in all, the subject of evolution was either one the Romantic poets were uninformed about, or one they were not greatly interested in. Theirs was not a poetry of information, like a good deal of eighteenth century verse, and evolution had not yet laid hold on men's emotional lives, as it was to in the Victorian era.

CHAPTER V

EVOLUTION IN THE POETRY OF TENNYSON

As well known as most things about Tennyson is his interest from an early age in science, and in particular the sciences of astronomy and geology. Both of these areas of study, as we have already seen, contributed to the emergence of evolutionary ideas. This is less true of astronomy than geology, though the idea of stars and solar systems developing or evolving from nebulous quantities of gaseous matter accustomed people to the idea of things in general coming to be through processes implying development or evolution, and the new astronomic scales of distance and time reinforced the time-scale for the universe suggested by geology.

To take astronomy first, Hallam Tennyson, in the Memoir of his father's life, reports:

Two of Alfred's earliest lines were:

The rays of many a rolling central star
Aye flashing earthward, have not reach'd us yet.

There is a story current in the family that Frederick, when an Eton schoolboy, was shy of going to a neighbouring dinner-party to which he had been invited. "Fred," said his younger brother, "think of Herschell's great star-patches, and you will soon get over that."¹

Later, but still probably dating from before Tennyson left Somersby for Cambridge, there is this fragment on the moon.

Deep glens I found, and sunless gulfs,
Set round with many a toppling spire,
And monstrous rocks from craggy snouts
Disploding globes of roaring fire.

Large as a human eye the sun
 Drew down the West his feeble lights;
 And then a night, all moons, confused
 The shadows from the icy heights.²

To the seventh line Hallam Tennyson adds the pedantic little footnote (a fair reflection of the rather ostentatiously erudite nature of the line):

"A night, all moons," means that when seen from the airless moon all the principal stars and planets would be very large and bright in the black heavens, and strike the eye there as the moon strikes the eye here.

The Cambridge prize poem, Timbuctoo, and its precursor Armageddon, contain passages showing interest in and knowledge of the stars in a general sort of way; more precise and revealing are the following stanzas, eventually omitted, from The Palace of Art (1833).

Hither, when all the deep unsounded skies
 Shudder'd with silent stars, she clomb,
 And as with optic glasses her keen eyes
 Pierced thro' the mystic dome,

Regions of lucid matter taking forms,
 Brushes of fire, hazy gleams,
 Clusters and beds of worlds, and bee-like swarms
 Of suns, and starry streams.

She saw the snowy poles and Moons of Mars,
 That mystic field of drifted light
 In mid Orion, and the married stars.³

To these lines Tennyson himself added the deprecatory note: "The 'Moons of Mars' is the only modern reading here, all the rest are more than half a century old." An even clearer statement of Laplace's

nebular theory, and acknowledged as being such in a note by Tennyson, is found in The Princess (1847).

This world was once a fluid haze of light,
Till toward the centre set the starry tides,
And eddied into suns, that wheeling cast
The planets: ...⁴

(Incidentally, the way the lines continue seems to show very clearly the transference of the idea of development from astronomy to biology to anthropology.

then the monster, then the man;
Tattoo'd or woaded, winter-clad in skins,
Raw from the prime, and crushing down his mate;
As yet we find in barbarous isles, and here
Among the lowest.)

Turning now to geology, we find the following stanza in The Coach of Death, written when Tennyson was fourteen or fifteen.

That Inn was built at the birth of Time:
The walls of lava rose,
Cemented with the burning slime
Which from Asphaltus flows.⁵

The Princess is probably the most prolific source in Tennyson's verse of geological fragments, of which the following will serve as example.

and then we turn'd, we wound
About the cliffs, the copses, out and in,
Hammering and clinking, chattering stony names
Of shale and hornblende, rag and trap and tuff,
Amygdaloid and trachyte, till the Sun
Grew broader toward his death and fell, and all
The rosy heights came out above the lawns.⁶

But perhaps the "richest" instance comes from Audley Court (1842).

There, on a slope of orchard, Francis laid
A damask napkin wrought with horse and hound,
Brought out a dusky loaf that smelt of home,

And, half-cut-down, a pasty costly-made,
 Where quail and pigeon, lark and leveret lay,
 Like fossils of the rock, with golden yolks
 Imbedded and injellied ...⁷

This is doubtless one of the occasions Sir Harold Nicolson had in mind when he talked of Tennyson dragging his scientific lore into his poems, and the conceit certainly has the metaphysical quaintness almost of Donne's "compasses" or "maps" or "hemispheres", without the poetry possessing the intensity needed to fuse such disparate elements into a single continuum. However, the very fact that, unlike The Princess, Audley Court contains nothing in the way of subject matter to bring to mind geology as a source of imagery suggests that such information was an integrated part of Tennyson's intellectual stock-in-trade, if not always of his poetry, and formed a natural element of his habitual thinking.

Hand in hand with geological knowledge went, of course, knowledge of extinct species, as shown in lines from The Epic (1842):

For nature brings not back the Mastodon,⁸

and The Princess:

Or like an old-world mammoth bulk'd in ice,
 Not to be molten out.⁹

Similarly, in a letter to Tennyson in 1832, Hallam had written:

I do not think I could reside again at Cambridge with any pleasure. I should feel like a melancholy Pterodactyl winging his lonely flight among the linnets, eagles and flying-fish of our degenerate post-Academic world.¹⁰

Admittedly, by 1852 one was to be able to meet a ~~megalosaurus~~^{megalosaurus} on the first page of Bleak House, but it is clear that such beasts were

playfully familiar to Tennyson and his immediate circle a full twenty years earlier.

So far there has been nothing in the examples quoted to show whether Tennyson was a catastrophist in his geology, or, as followers of Hutton and Lyell were called, an uniformitarian. In an early stanza of The Two Voices (1842) there seems to be a suggestion of catastrophism, though all one can really be certain of is that Tennyson is unostentatiously elongating the Genesis time-scale for creation.

I said, 'When first the world began,
Young nature through five cycles ran
And in the sixth she moulded man.'¹¹

Similarly, Section CXVIII of In Memoriam (1850) could be read as implying some form of catastrophism.

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 ...¹²

However, the implications are far from clear, "cyclic storms" being modified by "seeming prey". Much clearer are the indications of uniformitarianism in Section XXXV:

The sound of streams that swift or slow
Draw down AEonian hills, and sow
The dust of continents to be ...¹³

and Section CXXIII:

There rolls the deep where grew the tree.
 O earth, what changes hast thou seen!
 There where the long street roars, hath been
 The stillness of the central sea.

The hills are shadows, and they flow
 From form to form, and nothing stands;
 They melt like mist, the solid lands,
 Like clouds they shape themselves and go.¹⁴

Words like "flow" and "melt" are positively hostile to the idea of catastrophism, in this remarkable evocation (like one of those speeded-up films which show flowers opening under your eyes and clouds swirling like water) of the nature of geological change as described by Hutton and Lyell.

The following extracts from the diary of someone with whom Tennyson was staying in 1848 show us his already familiar interest in geology, and also his considerable knowledge of and interest in biology, and his acceptance of scientific empiricism.

Then he turned to Geology, Weald of Kent, Delta of a great river flowing from as far as Newfoundland. "Conceive," he said, "what an era of the world that must have been, great lizards, marshes, gigantic ferns!" Fancied, standing by a railway at night, the engine must be like some great Ichthyosaurus. I replied how beautiful Hugh Miller's descriptions of that time are: he though so too ...

Next morning (Tuesday, July 25th) Mr Tennyson came again: he talked about lower organisms feeling less pain than higher, but would not fish: could not comprehend the feeling of animals with ganglia, little scattered knots of nerves and no brain; spoke of wonderful variety of forms of life, instinct of plants, etc., told the story of "a Brahmin destroying a microscope because it showed him animals killing each other in a drop of water"; "significant, as if we could destroy facts by refusing to see them!"¹⁵

He became particularly interested in discoveries being made about the stages of embryological development. This had probably happened as early as 1828 or 9, as is indicated in a rather obscure reference in Hallam Tennyson's Memoir.

My father seems to have propounded in some college discussion the theory, that the "development of the human body might be traced from the radiated, vermicular, molluscous and vertebrate organisms." The question of surprise put to him (in a letter from A.H. Hallam) on this proposition was "Do you mean that the human brain is at first like a madrepor's, then like a worm's, etc.? but this cannot be for they have no brain."¹⁶

The same theory appears again in a further two stanzas eventually omitted from The Palace of Art.

'From shape to shape at first within the womb
The brain is moulded, she began,
'And thro' all phases of all thought I come
Unto the perfect man.

All nature widens upward. Evermore
The simpler essence lower lies,
More complex is more perfect, owning more
Discourse, more widely wise.'¹⁷

Here the belief seems clearly associated in Tennyson's mind with some sort of biological progress. And, interestingly, the criterion by which Tennyson judges degree of advancement ("More complex is more perfect") is precisely that chosen by Herbert Spencer for his law of progress, which he probably derived in the first place from von Baer, the embryologist whose name is so closely associated with the work being done at that time on the developmental stages of the foetus.

It is almost certainly this embryological development that Tennyson is again referring to in the Conclusion to In Memoriam, when, alluding to the conception of a child to result from the marriage he has just described, he writes:

A soul shall draw from out the vast
And strike his being into bounds,

And, moved through life of lower phase,
Result in man.¹⁸

Again the context is one of progress - this time the future moral and social progress of mankind. As will become increasingly clear, for Tennyson all forms of progress, whether of the biological species or the individual embryo, whether of the individual soul or the brotherhood of man on earth, are outward manifestations of the same underlying principle at work. So much so that in Part I of De Profundis (part I written 1852; not completed and published till 1880), where the genesis of his child is traced right back through embryological and/or evolutionary progress to the emergence and development of cosmic order out of the original chaos, it is not clear and in a sense does not matter whether the phrase "every phase of ever-heightening life" refers to the "nine long months of antenatal gloom" of the following line, or the slow biological evolution of ever-heightened species and forms of life. If, as seems more likely, the latter is the true meaning, then foetal development follows on as a natural sequel to, and is virtually

suggested by, evolutionary development. But the phrase faces both ways in Empsonianly poised ambiguity.

Out of the deep, my child, out of the deep,
 Where all that was to be, in all that was,
 Whirl'd for a million aeons thro' the vast
 Waste dawn of multitudinous-eddy light -
 Out of the deep, my child, out of the deep,
 Thro' all this changing world of changeless law,
 And every phase of ever-heightening life,
 And nine long months of antenatal gloom,
 With this last moon, this crescent - her dark orb
 Touch'd with earth's light - thou comest, darling boy;
 Our own; a babe in lineament and limb
 Perfect, and prophet of the perfect man ...¹⁹

Once again, progress in the past is a prelude to progress in the future, and there is a kind of progress in the kinds of progress - from stellar to biological to social to spiritual.

Similarly, in the following stanza from Maud, though there is no specific reference to the various stages of embryological development, there is even more clearly a link in Tennyson's mind between the evolutionary development of the species and the foetal development of the individual.

A monstrous eft was of old the Lord and Master of Earth,
 For him did his high sun flame, and his river billowing ran,
 And he felt himself in his force to be Nature's crowning race.
 As nine months go to the shaping an infant ripe for his birth,
 So many a million of ages have gone to the making of man:
 He now is first, but is he the last? is he not too base?²⁰

And lest there be any doubt as to the desired answer to the final rhetorical question, Hallam Tennyson records:

The answer he would give to this query was: "No, mankind is as yet on one of the lowest rungs of the ladder, although every man has and has had from everlasting his true and perfect being in the Divine Consciousness."²¹

At this point, before proceeding to examine the exact nature of Tennyson's beliefs on the subject of biological development or progress or evolution, it might be as well to consider the probable sources of his scientific knowledge and attitudes.

Tennyson's love of nature and close observations of living things began as a child, largely thanks to his mother's influence, though his father too appears to have been interested in such things. Arthur (Alfred's younger brother) Tennyson remembered their father's "tremendous excitement when he got hold of Bewick for the first time: how he paced up and down the lawn for hours studying him, and how he kept rushing in to us in the schoolroom to show us some of the marvellous wood-cuts, and to let us have a share in this new pleasure of his."²² Moreover, among the authors which Hallam Tennyson lists as "most read" by the boys from their father's library is (last in the list, admittedly) Buffon.²³

Buffon may well have been where Tennyson began to acquire his interest in astronomy and geology as well as in natural history. Later in life we know from the Memoir, that in 1837 Tennyson was reading Lyell's Principles of Geology,²⁴ that he ordered a copy of Chamber's Vestiges of the Natural History of Creation in 1884 (the year of its publication),²⁵ that he read Herschel's Astronomy in 1852,²⁶ Whewell's Plurality of Worlds in 1854,²⁷ Darwin's Origin of Species in 1859²⁸ (both these last two in the years they were

published) and Wallace's Darwinism in 1891.²⁹ But already by 1844, in his letter to Moxon ordering Chambers' Vestiges he could write:

I want you to get me a book which I see advertised in the Examiner: it seems to contain many speculations with which I have been familiar for years, and on which I have written more than one poem.²⁵

The poems to which he refers are probably parts of In Memoriam already completed.

Almost certainly Tennyson encountered most of the then current geological and astronomical ideas during his years at Cambridge. G. R. Potter, in "Tennyson and the Biological Theory of Mulability in Species",³⁰ points out that his own tutor was William Whewell, Professor of Mineralogy and a keen geologist, and that his brothers, friends and fellow Apostles seemed mostly to have either Whewell or George Peacock (Professor of Astronomy and Geometry) as their tutors. Other tutors at Cambridge at the time included W. Clark (Professor of Anatomy), Adam Sedgwick (Professor of Geology) and G. B. Airy (Professor of Astronomy and Experimental Philosophy).

Whewell was fairly conservative in his own views. Even as late as Plurality of Worlds (1854) he disagrees with Lyell's uniformitarianism, with Laplace's nebular theory, and with any belief in rational inhabitants of planets other than earth. Tennyson commented on this cautious conservatism: "It is to me anything but a satisfactory book. It is inconceivable that the whole Universe was merely created for us who live in this third-rate planet of a third-rate sun."²⁷

On the other hand, in both that book and his earlier History of the Inductive Sciences (1837) and Indications of the Creator (1845), Whewell had given a very fair summary of the uniformitarian point of view, just as in his review in The Quarterly, in 1831, of the first volume of Lyell's Principles of Geology he had, while disagreeing with its uniformitarianism, praised other aspects of the book very generously.

Whewell also summarised Lamarckian and related views on the possible transformation and interrelatedness of all species in his History of the Inductive Sciences, and while siding with Cuvier in his controversy with Geoffroy Saint-Hilaire over uniformity of design, Whewell did not attempt to exclude or conceal the latter's point of view. Moreover, though by no means agreeing with their extreme form, he showed himself as aware as Lyell of the latest discoveries and theories in embryology, and of the support they seemed to give both to gradualist or evolutionary theories about the development of life, and to Saint-Hilaire's assertions with regard to uniformity of design.

Another application of the principle, according to which creatures the most different are developments of the same original type, may be discerned in the doctrine, that the embryo of the higher forms of life passes by gradations through those forms which are permanent in inferior animals. Thus, according to this view, the human foetus assumes successively, the plan of the zoophyte, the worm, the fish the turtle, the bird, the beast.³¹

It seems impossible to establish for certain how much earlier than 1837 (History of the Inductive Sciences) Whewell became aware of these developments in embryology. The authority he quotes is a paper by his fellow Cambridge don, Dr. Clark, in the British Association Report IV (1834), though we know that two years earlier in 1832 Whewell reviewed the second volume of Principles of Geology, where, (p.78), as we have seen, such theories are referred to. Both of these dates are after Tennyson left Cambridge, but it seems very likely that Whewell and/or Clark would have known of the work of Tiedemann and/or Serres some years earlier. All in all, Whewell would seem to remain Tennyson's most likely source of information on the subject. Unless, placing the following extracts side by side, the first from Lyell summarising Serres, and the second from the earlier, 1833 version of stanzas Tennyson altered in 1842 and finally discarded from The Palace of Art in 1853, one is tempted to speculate that Tennyson read part at least of at least the second volume of Principles of Geology in the year of its publication, and not for the first time in 1837 as suggested by Hallam Tennyson in his Memoir.²⁴

The cerebral hemispheres, then, only arrive at the state which we observe in the higher animals by a series of successive metamorphoses. If we reduce the whole of these evolutions to four periods, we shall see that in the first are born the cerebral lobes of fishes, and this takes place homogeneously in all classes. The second period will give us the organization of reptiles; the third the brain of birds; and the fourth the complex hemispheres of mammalia.³²

'From change to change four times within the womb
The brain is moulded,' she began ...³³

After all, he took the trouble by 1842, when he must surely have read Whewell's History of the Inductive Sciences (see above), to alter the "four periods" to which Lyell had reduced the "series of successive metamorphoses", to:

'From shape to shape at first within the womb
The brain is modelled,' she began ...³⁴

1837, as already stated, saw Tennyson reading, or re-reading, Lyell's Principles of Geology. And just as from Whewell (reinforcing, in all likelihood, what he had already read in Buffon) he had been able to learn of the uniformitarianism which Whewell himself rejected, so from Lyell (if he had not been introduced to it already by Whewell) he was able to learn of a theory of evolution, albeit Lamarckian rather than Darwinian, which Lyell was attempting to disprove. This was followed up, in 1844, by Chambers' Vestiges, which propounded an evolution of a peculiarly teleological, "progressionist", and divinely preordained, though at the same time wholly "uniformitarian", nature. This, as we shall have occasion to see, agreed closely with the kind of evolution which Tennyson himself favoured.

It remains to determine the precise nature of this biological evolution in which Tennyson believed. His early verse - much of it printed in the 1830 volume and not reprinted later - is, as Lionel Stevenson points out in Darwin Among the Poets, concerned with mere changefulness rather than changefulness of a progressive kind. As well as the twin Nothing Will Die and All Things Will Die, Stevenson

cites a poem actually written to Heraclitus, and the following Chorus (in an Unpublished Drama Written Very Early), both from the 1830 volume.

The varied earth, the moving heaven,
 The rapid waste of roving sea,
 The fountain-pregnant mountains riven
 To shapes of wildest anarchy
 By secret fire and midnight storms
 That wander round their windy cones,
 The subtle life, the countless forms
 Of living things, the wondrous tones
 Of man and beast are full of strange
 Astonishment and boundless change.

Each sun which from the centre flings
 Grand music and redundant fire,
 The burning belts, the mighty rings,
 The murmurous planets' rolling choir,
 The globe-fill'd arch that, cleaving air,
 Lost in its effulgence sleeps,
 The lawless comets as they glare
 And thunder thro' the sapphire deeps
 In wayward strength are full of strange
 Astonishment and boundless change.³⁵

But gradually, argues Stevenson, the changefulness ceases to be mere flux, and acquires a progressive character, as in The Progress of Spring (written about 1836, though not published till 1889) where an example of change in the natural world which is essentially cyclical and non-progressive is nevertheless made to point a progressive moral in the last stanza.

A simpler, saner lesson might he learn
 Who reads thy gradual process, Holy Spring.
 Thy leaves possess the season in their turn,
 And in their time thy warblers rise on wing.
 How surely glidest thou from March to May,
 And changest, breathing it, the sullen wind,

Thy scope of operation, day by day,
 Larger and fuller, like the human mind!
 Thy warmth from bud to bud
 Accomplish that blind model in the seed,
 And men have hopes, which race the restless blood,
 That after many changes may succeed
 Life, which is Life indeed.³⁶

Not that we are likely to be in any doubt that Tennyson shared the general Victorian belief in progress. Quotations from The Palace of Art, In Memoriam, De Profundis and Maud have already made this abundantly clear. And the progress has taken place or is taking place, successively or concurrently, in many different spheres. This can even result in its sometimes being far from clear to which sphere Tennyson is referring, as has already been shown in De Profundis, and as is equally true in the quotation above from The Progress of Spring. The "Life, which is Life indeed" might equally well be a corporate life achieved on this earth after many changes to human society, or an individual and eternal life, achieved after perhaps many changes of the kind suggested in the following quotation from The Ring (1889), where the word "evolution" refers to successive and progressive reincarnations.

No sudden heaven, nor sudden hell, for man,
 But thro' the Will of One who knows and rules ...
 Æonian Evolution, swift or slow,
 Thro' all the Spheres - an ever-opening height,
 An ever lessening earth ...³⁷

The interrelatedness of the different kinds of progress he believed in is illustrated by the following from Hallam Tennyson's Memoir.

Yet he was inclined to think that the theory of Evolution caused the world to regard more clearly the "Life of Nature as a lower stage in the manifestation of a principle which is more fully manifested in the spiritual life of man," with the idea that in this process of Evolution the lower is to be regarded as the means to the higher.³⁸

Tennyson believed, then, in gradual and progressive improvements in the spiritual, social and biological spheres of life. Moreover, all the quotations so far used which show belief in a specifically biological evolution of some kind (from The Palace of Art, In Memoriam, De Profundis, and Maud) were written, and with the exception of De Profundis published, before 1859 and The Origin of Species. Indeed, according to his letter to Moxon he was writing about evolution before 1844, and according to his son, he believed in it as early as his Cambridge days. Of what kind was this evolution? What were the mechanisms in operation to secure these biological improvements?

Let us first examine a passage from The Princess.

And up we came to where the river sloped
 To plunge in cataract, shattering on black blocks
 A breadth of thunder. O'er it shook the woods,
 And danced the colour, and, below, stuck out
 The bones of some vast bulk that lived and roar'd
 Before man was. She gazed awhile and said,
 'As these rude bones to us, are we to her
 That will be.' 'Dare we dream of that,' I ask'd,
 'Which wrought us, as the workman and his work,
 That practice betters?' ...

'To your question now,
 Which touches on the workman and his work.
 Let there be light and there was light: 'tis so:
 For was, and is, and will be, are but is;
 And all creation is one act at once,

The birth of light: but we that are not all,
 As parts, can see but parts, now this, now that,
 And live, perforce, from thought to thought, and make
 One act a phantom of succession: thus
 Our weakness somehow shapes the shadow, Time;
 But in the shadow will we work, and mould
 The woman to the fuller day.³⁹

What is not in doubt is that Tennyson, or rather Princess Ida, is stating that there have been, and will continue to be, progressive improvements to living creatures. What is not stated is the means by which such improvements have been effected. They could have been brought about by the mutation of species, on either Lamarckian or Darwinian lines; they could even have been the result of successive acts of creation, with or without intervening destructive catastrophes. And the question asked by the Prince ("Dare we dream of that .../ Which wrought us, as the workman and his work,/ That practice betters" - "Are you suggesting that God had to learn his trade as Creator through trial and error?") is precisely the one most of us would like to ask those believing in successive special creations - especially the catastrophists. Moreover, the answer the Princess gives is essentially an evasion of the issue (ours may be a worm's-eye point of view, but there is presumably some difference even from a God's-eye point of view between an act of creation which appears to man to be instantaneous, and one which appears to man to be protracted over millennia), and an evasion of just the sort one would have to fall back on if one were defending successive special creations, since with evolution the only act of sheer creation is the initial one - life, with its built-in

capacity for improvement.

There is far from conclusive evidence here that Tennyson did at this time believe in successive special creations - still less in catastrophism - though the passage is at least consistent with a belief in one or both. Potter⁴⁰ is quite convinced that, until he read Darwin, Tennyson did not in fact believe that the progressive improvements in biological life in which he obviously did believe were the result of the mutability of species, but thought they were merely the product of successive creations. And Graham Hough, in "The Natural Theology of In Memoriam",⁴¹ is inclined to agree with him. Potter actually quotes the following stanza from Love Thou Thy Land, a poem emphasising the need for gradualness in political changes, and illustrating this from the natural world, as an illustration of Tennyson's belief in biological progress being perfectly reconcilable with a belief in successive special creations.

For Nature also, cold and warm,
 And moist and dry, devising long,
 Thro' many agents making strong,
 Matures the individual form.⁴²

Even assuming that this is referring to biological improvements over successive generations, the idea of Nature's using the environment, including the adversities of the environment, as an agent for progress is surely not consistent with progress having come about by means of separate and successive acts of creation.

In fact, however, it seems much more likely that this is yet another example of its being possible, in Tennyson's writings, to mistake progress in one field for progress in another - of progress, if you like, being indivisible - and that what Tennyson is here referring to is the maturing of "the individual form" from birth (or conception?) to adulthood. The next stanza seems to make this even clearer.

Meet is it changes should control
 Our being, lest we rust in ease.
 We are all changed by still degrees,
 All but the basis of the soul.

This very indivisibility of progress - the way progress in one department of life or the universe is analogous to or reflected in, a preparation for or a continuation of, progress in another - is, it seems to me, difficult to reconcile with a belief in sudden irruptions of creative power. Especially when we know that the progress Tennyson believed in or favoured in matters astronomical, geological, embryological, and social or political, was gradual and uniformitarian. And there are almost as clear indications that Tennyson thought of biological progress, or evolution, as equally a "process" rather than a series of sudden stops and starts, and did so well before 1859.

Even in the early period of his verse, characterised by poems like Nothing ~~Still~~ Die, when the emphasis is on mere mutability and flux, there is a feeling of continuity, at odds with new acts of creation. And certainly in those extracts already quoted from The

Palace of Art (1833), Maud (1855), and De Profundis (Part I written in 1852), where biological evolution is associated with embryological development, the implications of gradual improvement (and therefore of mutability of species) seem irresistible.

As nine months go to the shaping an infant ripe for his
birth,
So many a million of ages have gone to the making of
man ...⁴³

(Maud)

Out of the deep, my child, out of the deep,
Through all this changing world of changeless law,
And every phase of ever-heightening life,
And nine long months of antenatal gloom ...⁴⁴

(De Profundis)

There is altogether too much respect for the idea of process, and of a "changeless law" behind the changing surface of things for Tennyson not to have believed in the mutability of species.

Perhaps the most conclusive evidence on this issue is to be found in the great central sections of despair (LIV, LV & LVI) in In Memoriam, where Tennyson looks long and hard at the cruelty, the indifference, and the possible ultimate futility of the universe.

Are God and Nature then at strife,
That Nature lends such evil dreams?
So careful of the type she seems,
So careless of the single life ...

'So careful of the type?' but no.
From scarp'd cliff and quarried stone
She cries, 'A thousand types are gone:
I care for nothing, all shall go.

'Thou makest thine appeal to me:
 I bring to life, I bring to death:
 The spirit does but mean the breath:
 I know no more.' And he, shall he,

Man, her last work, who seem'd so fair ...

Who trusted God was love indeed
 And love Creation's final law -
 Tho' Nature, red in tooth and claw
 With ravine, shriek'd against his creed - ...

Be blown about the desert dust,
 Or seal'd within the iron hills?

No more? A monster then, a dream,
 A discord. Dragons of the prime
 That tare each other in their slime
 Were mellow music match'd with him.

O life as futile, then, as frail!⁴⁵

Note, first, that much of the evidence of Nature's ruthlessness is geological - i.e. fossils of extinct species. Yet it is this same geological record which provides the clearest evidence for there having been progressive improvements to life. And though the three sections of In Memoriam here being considered do not (and this is hardly surprising) in any way stress these progressive improvements, neither do they in any way deny their having taken place. Indeed, the implications of such a phrase as "Man, her last work" are quite the reverse. So Tennyson's despair does not in any way result from, or result in, a loss of faith in biological progress.

Note, second, that "Nature" it is, "red in tooth and claw with ravine", who first seems "careful of the type" and "careless of

the single life", and later careless even of the type; Nature it is who brings to life, brings to death, caring nothing if all go. Moreover, bringing to life and bringing to death in this context must surely mean bringing not only individuals but species to life and death, in view of the "thousand types" that are "gone" and of man's being "her last work". What alarms Tennyson so is the impersonality and consequent irresponsibility of the exclusively natural processes which seem to be doing it all - including, presumably, bringing about those progressive improvements which have culminated in man. That they have taken place, and that man exists, only adds to the horrifying irony of it all if it is all ultimately meaningless.

Admittedly, the issue is left open at the end of Section LVI, to be decided finally "Behind the veil, behind the veil". But the three poems mean nothing if they do not mean that Tennyson has faced the very real possibility that life is governed by a set of wholly impersonal, natural processes. And it is not of the nature of known natural processes to carry out periodic acts of ~~spontaneous~~ spontaneous creation. So the lines which are perhaps Tennyson's best known (though far from his most complete) pronouncement on evolution are most certainly not lines expressing a belief in successive special creations.

The other best known source of evolutionary ideas in In Memoriam is Section CXVIII,⁴⁶ though it is bedevilled by a by now familiar confusion in Tennyson's mind - or at all events in the verse - between

man's progress as an individual and man's progress as a species.

The first stanza is concerned to show that "Time" is as yet a youthful giant, and that the human species and its peculiar powers and values ("human love and truth") are not the closing stages ("earth and lime") of a "dying Nature".

Contemplate all this work of Time,
The giant labouring in his youth;
Nor dream of human love and truth,
As dying Nature's earth and lime; ...

This, one might be pardoned for presuming, is the preliminary to a statement of belief in the powers of the human race to progress on this earth, since any life after death is the concern neither of "Time" nor of "Nature". But in fact the second stanza begins with hopes for a life after death to which the dead "progress", not as a species but as individuals.

But trust that those we call the dead
Are breathers of an ampler day
For ever nobler ends.

There follows a very brief resume of cosmic and terrestrial progress.

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 branch'd from clime to clime,
The herald of a higher race, ...

There is nothing here conclusively in favour of evolution proper as opposed to successive creations, or vice versa. If "cyclic storms" seems catastrophic, then "grew" is uniformitarian. "Arose" is surely equally compatible with either evolution or special creation, and taken in conjunction with "throve and branch'd from clime to clime" seems to acquire a definite evolutionary bias. Yet Potter thinks that, when writing these lines, Tennyson may well have felt that a further act of creation was necessary to bring into being the "higher race" of which mankind is "herald". Hough is again inclined to agree with him, though sensing that Tennyson may well have resented the idea. In support of this he refers to the passage in the Memoir where John Tyndall reports of Tennyson: "He held undoubtingly the doctrine of a personal immortality, and was by no means content to accept our present existence as a mere preparation for the life of more perfect beings."⁴⁷ There is, however, in these reminiscences of Tyndall, no indication as to whether Tennyson thought these "more perfect beings", if they ever came, would evolve or be ushered in by special creation. And the idea of our preparing the way for them is surely more compatible with their evolving from our stock than with their being specially created.

More important, Tennyson's resentment is clearly against the idea that our lives are "mere preparation for the life of more perfect beings". Provided that his own individual immortality was safeguarded,

he had surely no grudge against those who would succeed him on earth. Indeed, in his reply, already quoted, (p. 156) to the rhetorical question in Maud about the future progress of mankind, Tennyson implies precisely that man is both already in possession of an immortal soul, and also capable of vast earthly progress in the future. And again, our possession, in common with our more perfect successors, of an immortal soul, argues against those more perfect successors being of a new, specially created species, and in favour of their being an improved development of our own species. The threat to man's immortality (which Tennyson clearly felt very deeply) comes, not from a deity who denies it us because he is keeping it in reserve for a "higher race" he has yet to create, but, as we have already seen, from there being no personal and trustworthy deity at all, but only "Nature" or "natural processes" - in other words, from materialism.

Returning to the text of Section CXVIII, we are back with our confusions between different kinds of progress.

Till at the last arose the man;

Who throve and branch'd 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, crown'd 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 batter'd with the shocks of doom

To shape and use ...

The ambitions, and the capacity for self-help and self-improvement of the individual human being are clearly seen as a reflection of the capacity vested in the human race to improve over the centuries.

Or is it the race which reflects the individual; is there an unspoken suggestion of Lamarckian cause and effect? Then, lest the picture of such happy prosperity seem false, there is quite a long digression on the uses of the adversity Tennyson well knew existed. One is tempted to see a Darwinian parallel here, but it is not as tenable as the Lamarckian one, and Tennyson would almost certainly have repudiated it - whereas the former, though probably not something he was conscious of, he might well have assented to.

In the closing lines there may again be the Lamarckian hope that, if sufficient individuals "move upward, working out the beast" in them, then this may have a beneficial effect on society and on the species as well as on their own lives. (And, as we have seen, future human evolution is very much more likely to be Lamarckian than Darwinian.)

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

Potter quite rightly argues that references to apes and tigers need not necessarily be taken as having any direct reference to man's biological ancestry. It is difficult to be certain, however, whether, by this mid-nineteenth century point in time, lines like this merely refer to that element in man of the bestial with which, for instance, Pope would have been all too familiar, or whether the literal and biological descent of man from bestial origins may not have been just as much a part of the texture of Tennyson's everyday thought as neo-Platonism had been of Pope's. Certainly, by the time he came to write, in The Making of Man (1892),

Where is one that, born of woman, altogether can escape
From the lower world within him, moods of tiger, or of ape?⁴⁸

we can be quite clear, from the rest of the poem, as to the evolutionary implications of the words he uses. And in By an Evolutionist (1888), Tennyson is virtually saying that our evolutionary origin, as a species, presents us with the opportunity, and lays on us the duty, of continuing the process within our individual lives, and completing the transcendence of ape and tiger.

Long before this, however, in Section CXX of In Memoriam, Tennyson refers quite unequivocally to man's animal ancestry.

Let him, the wiser man who springs
Hereafter, up from childhood shape
His action like the greater ape,
But I was born to other things.⁴⁹

Lest there should be any mistake about his meaning, Tennyson added

the subsequent note: "Spoken ironically against mere materialism, not against evolution."⁵⁰ In a similar attempt at clarification, the word "born" was italicised in later editions. Clearly therefore, in Tennyson's view, what distinguishes us from the animals and makes us more than their mere descendents (which "the wiser man who springs/Hereafter" is free to think of himself as being if he wants), is not a special act of creation for the species, but the unique and individual gift to each one of us, at birth, of an immortal soul.

There seems little room for doubt, therefore, that at some time before the publication of In Memoriam in 1850, Tennyson acknowledged the probable biological descent of man from the apes (though with the supernatural addition of a soul), and therefore, by implication, the mutation by some means or other of one species into another. Moreover, if Section CXVIII of In Memoriam is to be trusted, Tennyson probably thought of the mechanism for such mutations and improvements (in so far as he thought of it with any precision or in any detail) as being Lamarckian in character. This is offered slight support by a fragment from The Princess, in which the dominance of the male is attributed to development and improvement through usage, of the kind Lamarck relies on in his theory.

Besides the brain was like the hand, and grew
With using.⁵¹

After all, Tennyson had read a very fair summary of Lamarck's ideas, as far back as 1837, in Lyell's Principles of Geology.

Finally, at the end of the Conclusion to In Memoriam, there are the following lines:

And, star and system rolling past,
A soul shall draw from out the vast
And strike his being into bounds,

And, moved thro' life of lower phase,
Result in man, be born and think,
And act and love, a closer link
Betwixt us and the crowning race

Of those that, eye to eye, shall look
On knowledge; under whose command
Is Earth and Earth's, and in their hand
Is Nature like an open book;

No longer half-akin to brute,
For all we thought and loved and did,
And hoped, and suffer'd, is but seed
Of what in them is flower and fruit;

Whereof the man, that with me trod
This planet, was a noble type
Appearing ere the times were ripe,
That friend of mine who lives in God,

That God, which ever lives and loves,
One God, one law, one element,
And one far-off divine event,
To which the whole creation moves.⁵²

"Moved thro' life of lower phase" refers, as has been established already, to embryological stages of development. So the familiar Tennyson analogy between one kind of development and another is established at the outset. But almost everything else also points to slow, organic, developmental processes of change and improvement between us and the "crowning race". What in us "is but seed" "in them is flower and fruit." They will be "No longer half-akin to brute", a

phrase which would seem to imply an evolutionary link of kinship between ourselves and the brutes on the one hand, and between ourselves and the crowning race on the other. Moreover, the child to be born of the marriage Tennyson has just described, because he comes slightly later in time than Tennyson, will be "a closer link/Betwixt us and the crowning race", with Hallam as a kind of premature "sport" - "a noble type/Appearing ere the times were ripe". This must, surely, be a higher or crowning race which Tennyson thinks of as evolving rather than as being specially created.

"Mankind is as yet on one of the lowest rungs of the ladder, although every man has and has had from everlasting his true and perfect being in the Divine consciousness."²¹ In this already quoted gloss on a stanza in Maud, (p. 156) as in the lines "A soul shall draw from out the vast/And strike his being into bounds," and as in a number of other poems, Tennyson seems clearly to incline towards a pre-existence of some kind for the soul, as well as an existence after death. This would seem to mean that we have all, including those yet to be born, been specially created since the very beginning, but must nevertheless pass, as a species through all the necessary evolutionary phases of development, and as individuals through all the necessary embryological and biological and mental phases of development.

The nearest approach Tennyson makes, in poetry he wrote before 1859 and The Origin of Species, to a foreshadowing of the mechanisms

of natural selection is probably in those dark Sections, LIV, LV and LVI, of In Memoriam, where he is all too distressfully aware of the harshness of nature. Moreover, he is equally aware of that other necessary ingredient of natural selection, nature's prodigality, "finding that of fifty seeds She often brings but one to bear". But nowhere does he stress the competitiveness of one form of life with another, as for instance did Erasmus Darwin or de Candolle. It is the mindless ruthlessness of abstract "Nature", bringing to life and bringing to death and extinction, which haunts Tennyson in these poems.

Nearer, perhaps, to the spirit of Malthus and Darwin and Wallace are these lines from Maud.

For nature is one with rapine, a harm no preacher can heal;
The Mayfly is torn by the swallow, the sparrow speared by
the shrike,
And the whole little wood where I sit is a world of
plunder and prey.⁵³

Yet neither In Memoriam nor Maud in any way links harsh competitiveness with progress, still less regards it as a means to progress. (This is hardly surprising, since to have done so would have been truly to forestall Darwin.) Indeed, in that part of In Memoriam in which Tennyson is, as it were, mesmerised by the harshness of nature and the spectre of pointless extinction, the very possibility of progress is, as argued earlier, all but lost sight of; whereas, in those sections of the poem where progress is emphasised, the harshness of nature has in turn been lost sight of or forgotten.

There is, in fact, a passage from the strange poem Sea Dreams (1858-60) which might be thought to express a trust that the seemingly piecemeal and destructive operations of time are ultimately subject to an overall constructive or progressive purpose - in a manner perhaps analogous to the way in which the ruthlessness of natural selection results in evolution. Moreover, though the poem makes no overt reference to evolution, it is linked thereto by the following note by Hallam Tennyson on the poem By An Evolutionist (1889). "My father brought 'Evolution' into Poetry. Ever since his Cambridge days he believed in it. He has given, perhaps, the best expression of this belief in a remarkable passage in Sea Dreams ..."54

- But round the North, a light,
 A belt, it seem'd, of luminous vapour, lay,
 And ever in it a low musical note
 Swell'd up and died; and, as it swell'd, a ridge
 Of breaker issued from the belt, and still
 Grew with the growing note, and when the note
 Had reach'd a thunderous fulness, on those cliffs
 Broke, mixt with awful light (the same as that
 Living within the belt) whereby she saw
 That all those lines of cliffs were cliffs no more,
 But huge cathedral fronts of every age,
 Grave, florid, stern, as far as eye could see,
 One after one: and then the great ridge drew,
 Lessening to the lessening music, back,
 And past into the belt and swell'd again
 Slowly to music: ever when it broke
 The statues, king or saint, or founder fell;
 Then from the gaps and chasms of ruin left
 Came men and women in dark clusters round,
 Some crying, "Set them up! they shall not fall!"
 And others, "Let them lie, for they have fall'n."
 And still they strove and wrangled: and she grieved
 In her strange dream, she knew not why, to find
 Their wildest wailings never out of tune
 With that sweet note; and ever as their shrieks
 Ran highest up the gamut, that great wave

Returning, while none mark'd it, on the crowd
 Broke, mixt with awful light, and show'd their eyes
 Glaring, and passionate looks, and swept away
 The men of flesh and blood, and men of stone,
 To the waste deeps together.⁵⁵

The lines clearly imply a wish for there to be some omnipotent, purposeful and fundamentally harmonious process and power (the "sweet note" and the "awful light") which incorporates and renders meaningful all the apparently random, destructive, even iconoclastic operations of time and of change. Hallam Tennyson's note continues: "There we have a dream of the restless spirit of progress throughout the ages, and the 'note never out of tune' underlying it." But the poem clearly is about this evolutionary process extending far beyond purely biological affairs (indeed, biology is nowhere mentioned or implied) to those of the history of human societies. Moreover, the dreamer "grieved/In her strange dream ... to find/Their wildest wailings never out of tune/With that sweet note". That the process and the purpose are there is reassuring; that their modus operandi is so seemingly callous is not.

Nowhere, however, is there any real suggestion that the depredations themselves of the waves are the agent of progress; merely that the waves, though part of a larger progress, are also and incidentally destructive. The progressive purpose - the harmony, the "great" and "sweet note", the "awful light" - was there independent of and probably prior to the waves, rather than coming into being as a result of their destructiveness. It is a "progressionist" rather than

a Darwinian harmony, and is in any case never applied specifically in the poem to biological progress.

Sea Dreams was written in 1858, though not published till 1860 in Macmillan's Magazine, and 1865 in the Enoch Arden volume. From 1859 onwards Tennyson would obviously have been conversant with the theory of natural selection. However, since 1856 he had been occupied, poetically, with the Idylls of the King, the first four of which appeared in 1859, with subsequent additions to the cycle in 1869, 1872 and 1885. Such medieval vehicles for his moralising melancholy are hardly likely to contain references to Darwinism or survival of the fittest; indeed, for more than twenty years after the publication of The Origin of Species Tennyson seemed to eschew any subject for his poetry which might have involved evolutionary theory - with the possible exception, that is, of Lucretius (1868). Stevenson quotes the following lines to show "the similarity of his (Lucretius') theory to Darwinism".

Let her that is the womb and tomb of all,
Great Nature, take, and forcing far apart
Those blind beginnings that have made me man
Dash them anew together at her will
Thro' all her cycles - into man once more
Or beast or bird or fish, or opulent flower.⁵⁶

Tennyson himself must have been well aware of a fortuitous resemblance between Darwinism and the phraseology he here uses to characterise Epicurean materialism. But he obviously attributes no such prescience

to Lucretius, and the only true resemblance is the materialism itself, which, as we shall see, Tennyson feared underlay Darwinism, and which the next few lines show even more clearly as being the basis of Lucretius' creed.

... and that hour perhaps
Is not so far when momentary man
Shall seem no more a something to himself,
But he, his hopes and hates, his homes and fanes,
And even his bones long laid within the grave,
The very sides of the grave itself shall pass,
Vanishing, atom and void, atom and void,
Into the unseen for ever.⁵⁶

To return to natural selection, the only unequivocal reference to such a theory in Tennyson's poetry (and indeed the first clear reference he makes, after 1859, to evolution of any kind) occurs in his play The Promise of May (1882).

EDGAR "What are we," says the blind old man in Lear?
"As flies to the Gods; they kill us for their sport."

DOBSON (Aside) Then the old man i' Lear should be shamed
of hissen, but noñn o' the parishes gods by that
nañme 'ereabouts.

EDGAR The Gods! but they, the shadows of ourselves,
Have past for ever. It is Nature kills,
And not for her sport either. She knows nothing.
Man only knows, the worse for him! for why
Cannot he take his pastime like the flies?
And if my pleasure breed another's pain,
Well - is not that the course of Nature too,
From the dim dawn of Being - her main law
Whereby she gains in beauty - that her flies
Must massacre each other? this poor Nature!⁵⁷

The parallel with Sections LV and LVI of In Memoriam is quite striking, except for Nature's gain in beauty as a result of the slaughter - and except for Tennyson's deep anguish in In Memoriam

having as its equivalent here a shallow petulance. Throughout the play, in fact, Edgar is the mouthpiece for all that Tennyson hated and feared about the democratic, egalitarian, materialistically "philistine" society he sensed was coming into being. So that, although there is no evidence of Tennyson's ever having directly rejected the idea that Nature's "main law/Whereby she grows in beauty" is "that her flies/Must massacre each other", there is ample evidence that he found such a mechanism distasteful in the extreme, and saw it as a possible ally of Godless materialism. And it is perfectly true that Darwinism, though eventually reconcilable in many people's minds with a continuing belief in a guiding and directing divine providence (of the kind so obviously central to Tennyson's own pre-Darwinian concept of progress and evolution), was rather more easily reconcilable with a purely mechanistic view of the universe. So much so that, on the only occasion the two men met, one feels Tennyson may have preferred not to press for more than the very perfunctory reassurance he received in reply to his one pertinent question.

"Your theory of Evolution does not make against
Christianity?"

"No, certainly not."⁵⁸

When we turn to the late poems specifically on evolution, therefore, it comes as no surprise to find that, so far from concerning

themselves with Darwinism, they are preoccupied with much the same themes as those later Sections of In Memoriam already examined. By an Evolutionist (1888) is primarily about man's duty to "rule" his "Province of the brute", or make "the house of a brute", let by God to his soul, as clean as he can till God let him a better. The Dawn (1892) is concerned in the main to reassure us that we are only at the dawn of time as yet, and that there is plenty of it left for improvement. And The Making of Man (1892) combines both these themes.

Where is one that, born of woman, altogether can escape
From the lower world within him, moods of tiger, or of ape?

Man as yet is being made, and ere the crowning Age of
ages,
Shall not aeon after aeon pass and touch him into shape?

All about him shadow still, but, while the races flower
and fade,
Prophet-eyes may catch a glory slowly gaining on the shade,
Till the peoples all are one, and all their voices blend
in choric

Hallelujah to the Maker "It is finish'd. Man is made."⁵⁹

Locksley Hall Sixty Years After is a late evolutionary poem with a difference. It offers yet another example, and an interesting one, of the way different kinds of progress are interrelated in Tennyson's thought, the difference being that in this case a scepticism about human progress leads to scepticism about all forms of progress. In essence the poem is an expression, just as much as The Promise of May, of Tennyson's cantankerous old age. Admittedly there are lines which are almost Dickensian in their indignation at the squalor of contemporary London.

There among the glooming alleys Progress halts on
 palsied feet,
 Crime and hunger cast our maidens by the thousand on
 the street.⁶⁰

But much more prominent targets for Tennyson's spleen are provided
 by extensions to the franchise, and realism or "Zolaism" in literature.

You that woo the Voices - tell them "old experience is
 a fool,"
 Teach your flatter'd Kings that only those who cannot
 read can rule ...

Set the maiden fancies wallowing in the troughs of
 Zolaism, -
 Forward, forward, ay and backward, downward too into
 the abysm.⁶¹

In the circumstances it is small wonder that Tennyson should
 have found the comfort offered by evolution somewhat cold.

Is there evil but on earth? or pain in every peopled
 sphere?
 Well be grateful for the sounding watchword "Evolution"
 here.

Evolution ever climbing after some ideal good,
 And Reversion ever dragging Evolution in the mud.⁶²

To recapitulate, we know that Tennyson met, very early, in
 "Astronomy and Geology" those two "terrible muses",⁶³ the idea of
 development and progress by gradual process and according to certain
 fixed laws. William Rutland, in "Tennyson and the Theory of Evolution",
 puts it thus:

The fundamental link between the thought of Tennyson and
 the science of the nineteenth century is to be found in
 the idea of Process. It is, above all, for its
 development and application of the conception of Process
 that the nineteenth century will be remarkable in human
 history.⁶⁴

A little later, while at Cambridge, he learnt of the apparently recapitulatory stages through which the embryo passes during its development. By 1837 at the very latest, he had encountered, in Lyell's Principles of Geology, Lamarck's theory of biological evolution by means of self-induced biological mutation. In 1844 he again read of evolution in Chambers' Vestiges - this time a strongly progressionist version, though at the same time uniformitarian, and linked to the idea of embryological recapitulation. But by the time he read it he had written "more than one poem" on the "speculations" it contained - most probably Sections LIV, LV and LVI of In Memoriam. Hough⁶⁵ reads these three as being based on Principles of Geology, and later sections such as CXVIII as being based on the more optimistic, purposeful and progressive Vestiges. Rutland, on the other hand, finds a passage from the Vestiges which is curiously parallel, he thinks, to parts of Section LV.

It is clear, moreover, from the whole scope of the natural laws, that the individual, as far as the present sphere of being is concerned, is to the Author of Nature a consideration of inferior moment. Even where we see the arrangements for the species perfect; the individual is left, as it were, to take his chance amid the melee of the various laws affecting him.⁶⁶

But even he is willing to grant that both may derive from a common source - such as Lyell.

At all events, parts of In Memoriam were written in full knowledge of, and reflecting, contemporary theories of biological evolution.

In so far as Tennyson gives any scanty idea of mechanism, this is of a quasi-Lamarckian, quasi-progressionist nature.

After In Memoriam and Maud, Tennyson became acquainted, through reading The Origin of Species, with the mechanism of natural selection. But he made scant reference to it, was irreconcilably hostile to materialistic and mechanistic theories of life and the universe which utilised or arose as developments of Darwinism, and continued to think of evolution as a purposive, planned process.

Having more or less established the extent and nature of Tennyson's knowledge and beliefs about science and evolution, we have left to consider how important an influence such knowledge and beliefs had on the nature and quality of what he wrote.

Much of the poetry we remember Tennyson for today is a poetry of ambivalence - or, as he would have put it, a poetry of "two voices". That this does not make him more attractive or accessible to modern readers than seems to be the case is due, perhaps, to the frank, openly acknowledged nature of his dilemmas - or what he took to be his dilemmas - and the (consequently?) rather open weave or texture of the verse in which he clothes them. Sometimes the two voices are heard in two separate poems, like the adjacent and linked Nothing ~~Will~~ Die and All Things ~~Will~~ Die, or, more interestingly, The Lotus Eaters and Ulysses (or Tithonius and Ulysses). More typically they occur in the same poem, sometimes literally or figuratively as two distinct voices

(The Dreamer, The Ancient Sage, The Palace of Art, or The Two Voices itself), sometimes as mere changes of mood or mind (The Golden Year, Locksley Hall, Locksley Hall Sixty Years After, and, above all, In Memoriam).

Thus in Locksley Hall (1842) there is the temptation

there to wander far away,
On from island unto island at the gateways of the day.

Larger constellations burning, mellow moons and happy
 skies,
Breadths of tropic shade and palms in cluster, knots of
 Paradise.

Never comes the trader, never floats an European flag,
Slides the bird o'er lustrous woodland, swings the trailer
 from the crag;

Droops the heavy-blossom'd bower, hangs the heavy-fruited
 tree -
Summer isles of Eden lying in dark-purple spheres of sea.

There methinks would be enjoyment more than in this march
 of mind,
In the steamship, in the railway, in the thoughts that
 shake mankind.

There the passions cramp'd no longer shall have scope and
 breathing space;
I will take some savage woman, she shall rear my dusky
 race.⁶⁷

That south-sea islands have since become such a cliché for escapism does not, perhaps, help us to take the passage very seriously. And yet in a sense we are not meant to take it seriously; the over-dramatization of the whole situation serves as a self-protective disguise for the very real attraction, to Tennyson, of just such an escape from it all - and in particular, one feels, from all "this march of mind" and the

resultant "thoughts that shake mankind". The atmosphere is, of course, heavily redolent of The Lotus Eaters, with the sensuality latent in the sensuousness of the earlier poem not needing, here, to remain so latent, since the whole scene is merely ^{an} ~~an~~ idle, self-mocking day-dream. For, a few lines later, there is the reaction:

I, to herd with narrow foreheads, vacant of our glorious
gains,
Like a beast with lower pleasures, like a beast with
lower pains!

Mated with a squalid savage - what to me were sun or clime?
I the heir of all the ages, in the foremost files of time -

I that rather held it better men should perish one by one,
Than that earth should stand at gaze like Joshua's moon in
Ajalon!

Not in vain the distance beacons. Forward, forward let
us range,
Let the great world spin for ever down the ringing grooves
of change.⁶⁸

And by the closing couplet we have swung round to the mood of one who, many years earlier, had refused to remain with the Lotus Eaters.

Come, my friends,
'Tis not too late to seek a newer world.
Push off, and sitting well in order smite
The sounding furrows; for my purpose holds
To sail beyond the sunset, and the baths
Of all the western stars, until I die.⁶⁹

There is the same clash, of course, between the temptation to withdraw from the world, and one's plain duty to participate in its affairs, in a poem like The Palace of Art. But before leaving Locksley Hall, it would be as well to note the extent to which the hero's vacillation from confidence to despair to modified confidence

to modified despair is, self-confessedly, as the mood takes him.

For I dipt into the future, far as human eye could see,
Saw the Vision of the world, and all the wonder that
would be ...

Till the war-drum throb'd no longer, and the battle-flags
were furl'd
In the Parliament of man, the Federation of the world.

There the common sense of most shall hold a fretful realm
in awe,
And the kindly earth shall slumber, lapt in universal law.

So I triumph'd ere my passion sweeping through me left
me dry,
Left me with the palsied heart, and left me with the
jaundiced eye;

Eye, to which all order festers, all things here are out
of joint:
Science moves, but slowly slowly, creeping on from point
to point:

Slowly comes a hungry people, as a lion creeping nigher,
Glares at one that nods and winks behind a slowly-dying
fire.

Yet I doubt not thro' the ages one increasing purpose runs,
And the thoughts of men are widen'd with the process of
the suns.

What is that to him that reaps not harvest of his youthful
joys,
Tho' the deep heart of existence beat for ever like a boy's?

Knowledge comes, but wisdom lingers, and I linger on the
shore,
And the individual withers, and the world is more and more.

Knowledge comes, but wisdom lingers, and he bears a laden
breast,
Full of sad experience, moving toward the stillness of
his rest.⁷⁰

Perhaps it would be more accurate to say that the vacillation
takes place as the mood takes him or as the spirit of the age takes

him, the optimism of the latter counteracting the seemingly invariable pessimism of the former. For reflected in many of these poems is a fundamental disharmony between Tennyson and the age in which he lived. Harold Nicholson talks of a split between "the prosperous Isle-of-Wight Victorian" on the one hand, and "the black, unhappy mystic of the Lincolnshire wolds" on the other.⁷¹ But Tennyson was at odds with his age before ever he became prosperous and a near neighbour of the Queen, as can be seen in The Palace of Art and Locksley Hall. He was, we know, moody and subject to bouts of intense depression, slow, perhaps not very deep of thought and probably rather indolent, diffident, retiring and easily hurt by others. We see much of this in his excessive dependence on Hallam, and in the long, brooding withdrawal after the savage reviews of his 1832 volume, followed by the cruel loss of Hallam only the next year. Yet the society in which he lived, and to whose values he endeavoured to subscribe, was characterised ostensibly at all events by an ebullient confidence in the future, and by a strong sense of the moral duty of participatory work - a society whose ideals and standards were those of worldly achievement, material success, and a not very spiritual moral fervour. Tennyson was clearly both at odds with, and yet not independent enough to ignore or defy, the spirit of his age. That it should choose him, melancholy and myopic, as its laureate of progress is a fittingly ironic climax to the long drawn out, if intermittent,

struggle in Tennyson's poetry between inner disposition and outward duty.

Fractures are always more compound, dichotomies never so simple, however, as is implied by the preceding paragraph. There is clearly a deep cleavage within Tennyson himself, and more than one in the age he both belonged to and shrank from. For instance, a poem like Ulysses is much too sure of its touch to be merely a public poem. It speaks, movingly, for Tennyson as well as for his age. Yet it is a poem of participation (indeed, of two kinds of participation, both equally valid) rather than of withdrawal, even though it was written, like The Two Voices or early sections of In Memoriam, in nearly immediate response to Hallam's death. There is only, perhaps a slight languor of rhythm to recall the mood of The Lotus Eaters or Tithonius. And even that could, if one wished, be put down to Ulysses' old age, languor being the nearest approach Tennyson was able to make to that stiffening of the metrical joints at which Browning was so much more adept.

As for the split within the age in which Tennyson lived, one of the very reasons it so much valued his poetry was that he touched on its secret fears as well as its public hopes. This was particularly true of those of his poems of two voices which dealt with a belief in God and the after life. For in an age when religion was under attack from so many quarters, Victorians particularly welcomed Tennyson's inclusion in his poems of elements of doubt as well as of

faith. This was so whether, like so many today, they took the admission of doubt as a sign of brave honesty, or whether, as was more often the case, they needed to feel that the final victory for faith was the greater because the earlier doubts had seemed so strong. Here are a Bishop and a sceptic expressing these two points of view.

Bishop Wescott:

As I look at my original copy of "In Memoriam", I recognise that what impressed me most was your father's splendid faith (in the face of the frankest acknowledgment of every difficulty) in the growing purpose of the sum of life, and in the noble destiny of the individual man as he offers himself for the fulfilment of his little part.⁷²

Professor Henry Sidgwick:

From this point of view the note of Christian faith struck in the introductory stanzas is in harmony with all that follows. And yet I have always felt that in a certain sense the effect of the introduction does not quite represent the effect of the poem. Faith, in the introduction, is too completely triumphant. I think this is inevitable because so far as the thought-debate presented by the poem is summed up, it must be summed up on the side of Faith. Faith must give the last word: but the last word is not the whole utterance of the truth: the whole truth is that assurance and doubt must alternate in the moral world in which we at present live, somewhat as night and day alternate in the physical world.

And certainly in Tennyson's poetry, no matter what he said or thought elsewhere, assurance and doubt continued to alternate from first to last - from Supposed Confessions of a Second Rate Sensitive Mind (1830) to Despair (1881), its "sunnier" counterpart The Ancient Sage (1885), and Vastness (1889). The fact that some of these poems

are dramatic monologues, as Tennyson protested in self-defence,⁷⁴ scarcely affects the issue. The disguise in the first title quoted above is so thin as to be non-existent. And Tennyson's notes to The Ancient Sage openly avow some of the crucial emotions and experiences to be his own.⁷⁵ Even in the case of Despair, it was Tennyson's own choice to write such a monologue of unrelieved and impassioned despair. And as for the poem being about a Calvinist losing his faith because of the harshness of its creed, the disbelief expressed draws on all the more conventional nineteenth century grounds for scepticism, and might for the greater part of the poem have originated in any of the more usual ways that people lose their faith.

And the suns of the limitless Universe sparkled and
 shone in the sky,
 Flashing with fires as of God, but we knew that their
 light was a lie -
 Bright as with deathless hope - but, however they sparkled
 and shone,
 The dark little worlds running round them were worlds
 of woe like our own -
 No soul in the heaven above, no soul on the earth below,
 A fiery scroll written over with lamentation and woe ...

O we poor orphans of nothing - alone on that lonely shore -
 Born of the brainless Nature who knew not that which
 she bore!
 Trusting no longer that earthly flower would be heavenly
 fruit -
 Come from the brute, poor souls - no souls - and to die
 with the brute ...

Why should we bear with an hour of torture, a moment
 of pain,
 If every man die for ever, if all his griefs are in vain,
 And the homeless planet at length will be wheel'd thro'
 the silence of space,
 Motherless evermore of an ever-vanishing race,

When the worm shall have writhed its last, and its last
 brother-worm will have fled
 From the dead fossil skull that is left in the rocks
 of an earth that is dead?⁷⁶

Tennyson's best known poems of doubt and faith remain, however, The Two Voices and In Memoriam. Each can be read, and has been read, as predominantly a poem of doubt, with an unconvincingly orthodox conclusion, or alternatively as a triumphant progression through very genuine and honest doubt to equally genuine belief. Each illustrates admirably that quality of ambivalence in Tennyson's poetry which is under discussion. More to the point, each, and particularly In Memoriam, illustrates how Tennyson could harness, either to his belief or to his disbelief, the whole array of scientific evidence, and indeed the whole climate of opinion, which were leading people towards a belief in evolution.

Nearly the first half of In Memoriam is written in moods ranging from mild melancholy to despair, with periodic and mounting attacks of religious doubt. As early as Section III Tennyson's astronomy is providing the affairs of this life with an appropriately indifferent backcloth.

"The stars", she whispers, "blindly run;
 A web is wov'n across the sky;
 From out waste places comes a cry,
 And murmurs from the dying sun."⁷⁷

Later it is the turn of uniformitarian geology to induce despair.

Yet if some voice that man could trust
 Should murmur from the narrow house,
 "The cheek drops in; the body bows;
 Man dies: nor is there hope in dust!"

Might I not say? "Yet even here,
 But for one hour, O Love, I strive
 To keep so sweet a thing alive:"
 But I should turn mine ears and hear

The moanings of the homeless sea,
 The sound of streams that swift or slow
 Draw down AEonian hills, and sow
 The dust of continents to be;

And love would answer with a sigh,
 "The sound of that forgetful shore
 Will change my sweetness more and more,
 Half-dead to know that I shall die."⁷⁸

Finally, as we have seen in Sections LV and LVI, the evidence from biology, and from the fossil remains in geology, of a wasteful and indifferent spirit at work at the very heart of nature (something which is shortly to provide Darwin and Wallace with their mechanism for improvement) is almost too much for Tennyson's faith.

So far, be it noted, there has been no actual mention (except, as already argued, in the phrase "Man, her last work") of biological progress, though nothing has been said to preclude a belief in its existence. Tennyson has merely been using, to paint a predominantly pessimistic picture of the universe, evidence which others have already used and will increasingly use to paint a progressive picture of the universe. And yet, in one sense, this does not imply any real difference as to how the evidence should be interpreted.

Tennyson's picture of the universe is pessimistic, so far as he is concerned, because it is mechanistic and therefore has no need of a God or an after life. Similarly, Darwin's and Wallace's picture of

the universe will be progressive to the extent that and because it is mechanistic, though not necessarily exclusively so.

Sections LIV to LVI represent the nadir of the poem so far as Tennyson's feelings and beliefs are concerned. Thereafter there is a return to calm, tranquility, even serenity, and finally to faith. Moreover, the faith, though in harmony with the spirit of the age, is far from merely a public pose, but is as personally arrived at as the doubt. Both in The Two Voices and in In Memoriam the doubt is excessively preoccupied, one feels, with the loss of immortality.

My own dim life should teach me this,
That life shall live for evermore,
Else earth is darkness at the core,
And dust and ashes all that is ...⁷⁹

Eternal life, moreover, must be a sharply personal, individuated experience, to be worth believing or disbelieving in.

That each, who seems a separate whole,
Should move his rounds, and fusing all
The skirts of self again, should fall
Remerging in the general Soul,

Is faith as vague as all unsweet:
Eternal form shall still divide
The eternal soul from all beside;
And I shall know him when we meet ...⁸⁰

T. S. Eliot has pointed out how Tennyson almost puts reunion with Hallam before reunion with God, so personal is the nature of the immortality he comes to believe in once more. And the grounds for his belief are almost equally personal. For it was not open to Tennyson, as it had been to Pope or Paley, to find the basis for a

belief in God in the design and mechanism of the universe He had created. That way as we have seen, thanks to the work of nineteenth century astronomers, geologists and biologists, lay doubt and despair. It is Coleridge's example which Tennyson must follow, in finding the exclusive grounds for his belief in a personal experience of God. Thus the terrifying

Behold, we know not anything;
 I can but trust that good shall fall
 At last - far off - at last, to all,
 And every winter change to spring.

So runs my dream: but what am I?
 An infant crying in the night:
 An infant crying for the light:
 And with no language but a cry.⁸¹

is answered by the equally personal

I found Him not in world or sun,
 Or eagle's wing, or insect's eye;
 Nor thro' the questions men may try,
 The petty cobwebs we have spun:

If e'er when faith had fall'n asleep,
 I heard a voice 'believe no more'
 And heard an ever-breaking shore
 That tumbled in the Godless deep;

A warmth within the breast would melt
 The freezing reason's colder part,
 And like a man in wrath the heart
 Stood up and answer'd 'I have felt.'

No, like a child in doubt and fear:
 But that blind clamour made me wise;
 Then was I as a child that cries,
 But, crying, knows his father near;

And what I am beheld again
 What is, and no man understands;
 And out of darkness came the hands
 That reach thro' nature, moulding men.⁸²

Faith once having been re-established, Tennyson is naturally in a position to reinterpret the evolutionary evidence which had formerly seemed to lead to so gloomy a conclusion - to behold again, in a new light, "What is, and no man understands", and to be aware of "the hands/That reach thro' nature (N.B. not "Nature"), moulding men." No longer does "an ever-breaking shore/That tumbled in the Godless deep" (cf. Section XXXV: "The moanings of the homeless sea,/The sound of streams that swift or slow/Draw down AEonian hills, and sow/The dust of continents to be") hold any terrors. Moreover, only two sections earlier (CXXII) the stars ~~had seemed~~ so much less daunting in their indifference than in Section III as to provide an image for the purposeful, creative and healing operations of the imagination.

Oh, wast thou with me, dearest, then,
 While I rose up against my doom,
 And yearn'd to burst the folded gloom,
 To bare the eternal Heavens again,

To feel once more, in placid awe,
 The strong imagination roll
 A sphere of stars about my soul,
 In all her motion one with law ...⁸³

And in the immediately preceding Section (CXXIII), uniformitarian geology is used to do no more than suggest that even the hills are impermanent when compared with his emotions.

There rolls the deep where grew the tree.
 O earth, what changes hast thou seen!
 There where the long street roars, hath been
 The stillness of the central sea.

The hills are shadows, and they flow
 From form to form, and nothing stands;
 They melt like mist, the solid lands,
 Like clouds they shape themselves and go.

But in my spirit will I dwell,
 And dream my dream, and hold it true;
 For tho' my lips may breathe adieu,
 I cannot think the thing farewell.⁸⁴

Indeed, faith in God restores Tennyson's faith in earthly progress to such an extent that, whereas before he was deeply concerned that the world which Nature had made seemed to be anything but a world where "not a worm is cloven in vain" and "Not a moth with vain desire/Is shrivell'd in a fruitless fire,/Or but subserves another's gain", now it seems that he can survey even human suffering as incidental and unavoidable in the general forward march of things as a whole.

The fortress crashes from on high,
 The brute earth lightens to the sky,
 And the great AEon sinks in blood,

And compass'd by the fires of Hell;
 While thou, dear spirit, happy star,
 O'erlook'st the tumult from afar,
 And smilest, knowing all is well.⁸⁵

For, though

No doubt vast eddies in the flood
 Of onward time shall yet be made,
 And throned races may degrade;
 Yet O ye mysteries of good, ...

I see in part
 That all, as in some piece of art,
 Is toil coöperant to an end.⁸⁶

It is in lines like these, so close in spirit (but with less excuse) to "Whatever is, is right", that Tennyson lays himself most open to the charge of adopting, in the more positive of his moods or voices, a merely public stance. But his purely religious faith, as

distinct from the derivative and hybrid belief in earthly progress, remains a hardly-won and intensely personal affair.

To summarize, Tennyson's view of evolution was essentially non-Darwinian, though it probably included the idea of the biological mutation of species. In so far as he was concerned with the probable mechanism, this seems to have been neo-Lamarckian, but the spirit behind his whole concept of evolution was strongly teleological or progressionist. Indeed, he conceived of it as only one manifestation of an universal principle of progress, operating on many different planes, both collective and individual. This he foresaw as continuing to operate, not only on this earth for mankind as a species, but for each of us individually, both on earth in our moral development and in other existences to come. (Presumably, if our individual embryological development is analogous to our past biological development as species, then our individual spiritual development can be thought of as being analogous to our future social and moral development as a species.)

As for Darwinism, Tennyson was alarmed not by its evolutionary content, but by its emphasis on the harshness of nature, and by the prospect that it might undermine his particular, divinely-directed, progressionist version of evolution, replacing it with a purely mechanistic one.

CHAPTER VI

EVOLUTION IN THE POETRY OF BROWNING

Before considering the precise nature of Robert Browning's beliefs about biological evolution, it might be helpful to take a more general look at his whole philosophy of life - for he is undoubtedly one of those poets with an identifiable, indeed a professed, philosophy - as it finds expression in his poetry.

The best known fact about Browning's beliefs, and the most obvious point of contrast with those of Tennyson, is that he was an incorrigible optimist. Many quotations could be adduced in support of this, the most frequently used of course being the almost notorious lines from *Pippa Passes* (1841).

The year's at the spring
And day's at the morn;
Morning's at seven;
The hill-side's dew-pearled;
The lark's on the wing;
The snail's on the thorn:
God's in his heaven -
All's right with the world!¹

And nearly fifty years later, in the Epilogue to his last collection Asolando (1889), published on the day of his death, come the lines which stand virtually as Browning's self-composed epitaph, and in which he still maintains his uncompromising, grimly optimistic posture.

One who never turned his back but marched breast forward,
Never doubted clouds would break,
Never dreamed, though right were worsted, wrong would
triumph,

Held we fall to rise, are baffled to fight better,
Sleep to wake.²

The reasons for this difference between Browning and Tennyson are doubtless largely chemical - a question of temperament, metabolism, what you will. But it would be wrong to infer from this, either that Browning found such optimism equally easy to maintain all his days, or that it was a facile, unthinking optimism, which took no account of the world's ills and which had no philosophic or metaphysical basis. Quite the reverse, as we shall see - indeed, almost at times too much the reverse.

For instance, the very song already quoted from Pippa Passes, together with the others she sings, though shining to such effect in a naughty world as to suggest we are reading a fairy story rather than one from real life, no more denies the existence of the evil with which she is surrounded, or its power on other occasions and in other circumstances to seem all-powerful, than do the pumpkin coach and glass slipper in Cinderella. Again almost the reverse, since the magical whiteness of the good not only throws the black into sharper relief, but its protection allows us to tolerate, for the moment, a melodramatic heightening of the evil.

Nor is there any suggestion, in Browning's verse, that the truth, whatever it may be, about the universe and about the nature and purpose of life, is a simple matter. Indeed, there is in most of Browning's work a deep and pervasive sense that truth is multifarious.

This is perhaps most markedly so in the three early poems, Pauline (1833), Paracelsus (1835), and Sordello (1840), in each of which the hero or central character is engaged in a vain endeavour to master and to give expression to just such a many-sided truth. Pauline, a Browning variant on Keats' "chameleon poet", confesses to "a principle of restlessness/Which would be all, have, see, know, taste, feel, all".³ And again, later, he says:

I can live all the life of plants, and gaze
Drowsily on the bees that flit and play,
Or bare my breast for sunbeams which will kill,
Or open in the night of sounds, to look
For the dim stars; I can mount with the bird
Leaping airily his pyramid of leaves
And twisted boughs of some tall mountain tree,
Or rise cheerfully springing to the heavens;
Or like a fish breathe deep the morning air
In the misty sun-warm water; or with flower
And tree can smile in light at the sinking sun
Just as the storm comes, as a girl would look
On a departing lover - most serene.⁴

Sordello is another young poet seeking a vision of truth, and the coming of his moment of illumination is described thus:

And at last
The main discovery and prime concern,
All that just now imported him to learn,
Truth's self, like yonder slow moon to complete
Heaven, rose again, and, naked at his feet,
Lighted his old life's every shift and change,
Effort with counter-effort; nor the range
Of each looked wrong except wherein it checked,
Some other - which of these could he suspect,
Prying into them by the sudden blaze?
The real way seemed made up of all the ways -
Mood after mood of the one mind in him ...⁵

As for Paracelsus, what dismays him about the work of previous scholars is its petty fragmentariness, and the truth he seeks is that

which shall draw all knowledge to it and make of it a unity.

The same feeling persists in later poems; in Cleon (1855) the superiority of modern man over the ancients consists in being able to master and combine all existing knowledge into a related whole.

In brief, all arts are mine;
 Thus much the people know and recognize,
 Throughout our seventeen islands. Marvel not.
 We of these latter days, with greater mind
 Than our forerunners, since more composite,
 Look not so great, beside their simple way,
 To a judge who only sees one way at once,
 One mind-point and no other at a time, -
 Compares the small part of a man of us
 With some whole man of the heroic age,
 Great in his way - not ours, nor meant for ours.
 And ours is greater, had we skill to know ..,
 This sequence of the soul's achievements here
 Being, as I find much reason to conceive,
 Intended to be viewed eventually
 As a great whole, not analyzed to parts,
 But each part having reference to all ...⁶

Indeed, it seems likely that at least one of the attractions of the dramatic monologue for Browning was that it provided him with a piece-meal approach to the multifariousness of truth, and allowed him his whole oeuvre in which to catch and contain it, rather than just a single poem like Paracelsus or Sordello. This is even carried to the stage when ideas which to Browning are clearly aspects of the truth are presented dramatically by characters with whom Browning has a great deal less than total sympathy - as in Bishop Blougram's Apology, Mr. Sludge, "The Medium", Prince Hohenstiel-Schwangau, and Fifine at the Fair. As in The Ring and the Book, even its distortions

are necessary if we are to view the truth entire - or as entire as may be.

Given such a conception of the truth, and of the shifts necessary if we are to arrive at anything like a grasp of it, it will come as no great surprise that creation, for Browning, bears more than a surface resemblance to the one favoured by those holding neo-Platonic doctrines of plenitude. The Pope, in The Ring and the Book (1868-9), for instance, speaks of the infinity of differing concepts of God necessary if He is to be known, and loved, by all his creation.

Here, as a whole proportioned to our sense, -
 There, (which is nowhere, speech must babble thus!)
 In the absolute immensity, the whole
 Appreciable solely by Thyself, -
 Here, by the little mind of man, reduced
 To littleness that suits his faculty,
 In the degree appreciable too;
 Between Thee and ourselves - nay even, again,
 Below us, to the extreme of the minute,
 Appreciable by how many and what diverse
 Modes of the life Thou madest be! (why live
 Except for love, - how love unless they know?)
 Each of them, only filling to the edge,
 Insect or angel, his just length and breadth,
 Due facet of reflection, - full, no less,
 Angel or insect, as Thou framedst things.⁷

Much earlier than that, however, in Sordello (1840), Browning had emphasised that life is all inclusive, ranging from high to low and comprising both good and evil - a theme, as we shall see, he returns to again and again.

Venice seems a type
 Of Life - 'twixt blue and blue extends, a stripe,
 As Life, the somewhat, hangs 'twixt nought and nought:

'Tis Venice, and 'tis Life - as good you sought
 To spare me the Piazza's slippery stone
 Or keep me to the unchoked canals alone,
 As hinder Life the evil with the good
 Which make up Living, rightly understood.⁸

And in Fifine at the Fair (1872), only this time confining his comments quite specifically to human nature, Browning once more uses Venice as his illustration, and after having described the Carnival there, with all its grotesque masks in a great pageant, he continues:

CVIII

There went
 Conviction to my soul, that what I took of late
 For Venice was the world; its Carnival - the state
 Of mankind, masquerade in life-long permanence
 For all time, and no one particular feast-day. Whence
 'Twas easy to infer what meant my late disgust
 At the brute-pageant, each grotesque of greed and lust
 And idle hate, and love as impotent for good -
 When from my pride of place I passed the interlude
 In critical review; and what, the wonder that ensued
 When, from such pinnacled pre-eminence, I found
 Somehow the proper goal for wisdom was the ground
 And not the sky, - so, slid sagaciously betimes
 Down heaven's baluster-rope, to reach the mob of mimes
 And mummers; whereby came discovery there was just
 Enough and not too much of hate, love, greed and lust,
 Could one discerningly but hold the balance, shift
 The weight from scale to scale, do justice to the drift
 Of nature, and explain the glories by the shames
 Mixed up in man, one stuff miscalled by different names
 According to what stage i' the process turned his rough,
 Even as I gazed, to smooth - only get close enough!
 - What was all this except the lesson of a life?⁹

Finally, there are the opening stanzas of Abt Vogler (1864), in which the structure of music the organist builds is compared with the palace Solomon built by the aid of all created things, highest to lowest, and both by implication are compared with God's own creation.

I

Would that the structure brave, the manifold music I build,
 Bidding my organ obey, calling its keys to their work,
 Claiming each slave of the sound, at a touch, as when
 Solomon willed
 Armies of angels that soar, legions of demons that lurk,
 Man, brute, reptile, fly, - alien of end and of aim,
 Adverse, each from the other heaven-high, hell-deep
 removed, -
 Should rush into sight at once as he named the ineffable
 Name,
 And pile him a palace straight, to pleasure the princess
 he loved!

II

Would it might tarry like his, the beautiful building
 of mine,
 This which my keys in a crowd pressed and importuned
 to raise!
 Ah, one and all, how they helped, would dispart now and
 now combine,
 Zealous to hasten the work, heighten their master his
 praise!
 And one would bury his brow with a blind plunge down to
 hell,
 Burrow awhile and build, broad on the roots of things,
 Then up again swim into sight, having based me my palace
 well,
 Founded it fearless of flame, flat on the nether springs.

III

And another would mount and march, like the excellent
 minion he was,
 Ay, another and yet another, one crowd but with many
 a crest,
 Raising my rampired walls of gold as transparent as glass,
 Eager to do and die, yield each his place to the rest:
 For higher still and higher (as a runner tips with fire,
 When a great illumination surprises a festal night -
 Outlining round and round Rome's dome from space to spire)
 Up, the pinnacled glory reached, and the pride of my
 soul was in sight.¹⁰

It seems it is necessary to "plunge down to hell" and "build, broad on the roots of things" in order to have a firm enough foundation to aspire to the heights. Leaving hell and the roots aside for the moment, however, another marked feature of the way Browning looks at the world, which is perhaps no more than a particular manifestation of his optimism, is this quality of aspiring. The movement is ever upward; as Paracelsus puts it:

... progress is
The law of life, man is not Man as yet.¹¹

Another early poem, Sordello, is full of statements of one kind or another of Browning's belief in a gradual kind of progress. A good example occurs early in Book the Fifth, when Sordello considers how long it took, not just to build Rome but to discover all the necessary building techniques.

The work marched: step by step, - a workman fit
Took each, not too fit, - to one task, one time, -
No leaping o'er the petty to the prime,
When just the substituting osier lithe
For brittle bulrush, sound wood for soft withe,
To further loam-and-roughcast-work a stage, -
Exacts an architect, exacts an age.
No tables of the Mauritanian tree
For men whose maple log's their luxury!
That way was Rome built.

There is, it seems, virtue in the very slowness of the progress.

"Better" (say you) "merge
"At once all workmen in the demiurge,
"All epochs in a lifetime, every task
"In one!" So should the sudden city bask
I' the day - while those we'd feast there, want the knack
Of keeping fresh-chalked gowns from speck and brack,
Distinguish not rare peacock from vile swan,
Nor Mareotic juice from Caecuban.¹²

Reinforcing this idea that progress must needs be gradual, and stressing that overall progress is co-operative, the poem continues:

God has conceded two sights to a man -
 One, of men's whole work, time's completed plan,
 The other, of the minute's work, man's first
 Step to the plan's completeness: what's dispersed
 Save hope of that supreme step which, descried
 Earliest, was meant still to remain untried
 Only to give you heart to take your own
 Step, and there stay, leaving the rest alone? ...
 That last step you'd take first? - an evidence
 You were God: be man now! Let those glances fall! ...
 Read the black writing - that collective man
 Outstrips the individual.¹³

In a wholly different context, St. John, in A Death in the Desert (1864), foresees that even religion will become "progressive", shedding that which was necessary for simple minds but is inappropriate for sophisticated ones.

I say, that as the babe, you feed awhile,
 Becomes a boy and fit to feed himself,
 So, minds at first must be spoon-fed with truth:
 When they can eat, babe's-nurture is withdrawn.
 I fed the babe whether it would or no:
 I bid the boy or feed himself or starve.
 I cried once, "That ye may believe in Christ,
 "Behold this blind man shall receive his sight!"
 I cry now, "Urgest thou, for I am shrewd
"And smile at stories how John's word could cure -
"Repeat that miracle and take my faith?"
 I say, that miracle was duly wrought
 When, save for it, no faith was possible.¹⁴

There follows, later in the poem, a passage it is impossible not to place alongside Pope's great lines about man on his "isthmus of a middle state". That man, says Browning, or rather St. John, who knows his true limitations

falls

Into man's place, a thing nor God nor beast,
 Made to know that he can know and not more:
 Lower than God who knows all and can all,
 Higher than beasts which know and can so far
 As each beast's limit, perfect to an end,
 Nor conscious that they know, nor craving more;
 While man knows partly but conceives beside,
 Creeps ever on from fancies to the fact,
 And in this striving, this converting air
 Into a solid he may grasp and use,
 Finds progress, man's distinctive mark alone,
 Not God's, and not the beasts': God is, they are
 Man partly is, and wholly hopes to be.¹⁵

In a sense Browning says no more than Pope (indeed, it is arguable that the poetry says a great deal less), yet where, in one, the emphasis is all on man's knowing his rightful place, in the other it is all on man's progressing.

Similarly, in Old Pictures in Florence (1855), the static perfection of humanity aimed at in Greek art is contrasted with the patent imperfections and consequent capacity for improvement in the kind of human being which Renaissance art seemed to prefer portraying.

XV

Growth came when, looking your last on them all,
 You turned your eyes inwardly one fine day
 And cried with a start - What if we so small
 Be greater and grander the while than they?
 Are they perfect of lineament, perfect of stature?
 In both, of such lower types are we
 Precisely because of our wider nature;
 For time, theirs, - ours for eternity.

XVI

Today's brief passion limits their range;
 It seethes with the morrow for us and more.
 They are perfect - how else? they shall never change:
 We are faulty - why not? we have time in store.

The Artificer's hand is not arrested
 With us; we are rough-hewn, nowise polished:
 They stand for our copy, and, once invested
 With all they can teach, we shall see them abolished.

XVII

'Tis a life-long toil till our lump be leaven -
 The better! What's come to perfection perishes.
 Things learned on earth, we shall practise in heaven:
 Works done least rapidly, Art most cherishes.
 Thyself shall afford the example, Giotto!
 Thy one work, not to decrease or diminish,
 Done at a stroke, was just (was it not) "O!"
 Thy great Campanile is still to finish.¹⁶

I have made no attempt so far to distinguish between different kinds of progress - cosmic, social, individual - since obviously, for Browning even more than for Tennyson, all are manifestations of the same general principle at work. In the following extract from La Saisiaz (1878) we actually see instances of biological and social progress being adduced as evidence that a life after death is likely to be better than this one.

Life to come will be an improvement on the life that's
 now; destroy
 Body's thwartings, there's no longer screen betwixt soul
 and soul's joy.
 Why should we expect new hindrance, novel tether? In
 this first
 Life I see the good of evil, why our world began at worst:
 Since time means amelioration, tardily enough displayed,
 Yet a mainly onward moving, never wholly retrograde.
 We know more though we know little, we grow stronger
 though still weak,
 Partly see though all too purblind, stammer though we
 cannot speak.
 There is no such grudge in God as scared the ancient Greek,
 no fresh
 Substitute of trap for dragnet, once a breakage in the mesh.
 Dragons were, and serpents are, and blindworms will be:
 ne'er emerged

Any new-created python for man's plague since earth
 was purged.
 Failing proof, then, of invented trouble to replace
 the old,
 O'er this life the next presents advantage much and
 manifold.¹⁷

Clearly, then, for Browning, progress really is the law of life, and manifests itself equally in the biological and social progress of species, and in the spiritual progress of individuals. Yet the biological progress instanced here (dinosaurs to grass snakes) is far from strictly Darwinian, but rather a progress which consists in a diminution of evil and suffering. And this, fundamentally, is the aspect to progress which most interests Browning. For him to retain, or rather to justify, the optimism with which he was endowed by temperament, he had to find a role for the evil he was by no means blind to. And that role was, in short, to be diminished gradually, and thereby to ensure progress and guard against premature perfection, since, in this life, "What's come to perfection perishes." The doctrine of plenitude has acquired a peculiarly nineteenth century twist.

To return to Abt Vogler, we find, coupled with the faith that all evil shall be lost sight of and compensated for in our eventual reunion with perfection, a recognition of this "utility" of evil.

IX

There shall never be one lost good! What was, shall live
 as before;
 The evil is null, is nought, is silence implying sound;
 What was good shall be good, with, for evil, so much
 good more;
 On earth the broken arcs; in the heaven, a perfect round ...

XI

And what is our failure here but a triumph's evidence
 For the fulness of the days? Have we withered or
 agonized?
 Why else was the pause prolonged but that singing might
 issue thence?
 Why rushed the discords in but that harmony should be
 prized?¹⁸

Such a suggestion is taken up again strongly in Rabbi Ben Ezra,
 the poem which immediately follows Abt Vogler in the 1864 volume,
Dramatis Personae.

IV

Poor vaunt of life indeed,
 Were man but formed to feed
 On joy, to solely seek and find and feast:
 Such feasting ended, then
 As sure an end to men;
 Irks care the crop-full bird? Frets doubt the maw-crammed
 beast? ...

VI

Then, welcome each rebuff
 That turns earth's smoothness rough,
 Each sting that bids nor sit nor stand but go!
 Be our joys three-parts pain!
 Strive, and hold cheap the strain;
 Learn, nor account the pang; dare, never grudge the throe!

VII

For thence, - a paradox
 Which comforts while it mocks, -
 Shall life succeed in that it seems to fail:
 What I aspired to be
 And was not, comforts me:
 A brute I might have been, but would not sink i' the scale.¹⁹

We have already seen the case for gradualness put by Sordello -
 a gradualness to ensure that Rome be not built too soon. Here, towards

the end of the poem, Sordello is showing how most men, by being so much slower to perceive and grasp the truth about things than an exceptional being like himself, are spared his continual discontent and need to search out fresh truths to conquer. As it is, because of the many difficulties they experience and only slowly overcome, they have a continual sense of achievement.

... whereas for Mankind springs
 Salvation by each hindrance interposed.
 They climb; life's view is not at once disclosed
 To creatures caught up, on the summit left,
 Heaven plain above them, yet of wings bereft:
 But lower laid, as at the mountain's foot.
 So, range on range the girdling forests shoot
 'Twixt your plain prospect and the throngs who scale
 Height after Height, and pierce mists, veil by veil,
 Heartened with each discovery; in their soul,
 The Whole they seek by parts - but, found that Whole,
 Could they revert, enjoy past gains? The space
 Of time you judge so meagre to embrace
 The Parts were more than plenty, once attained
 The Whole, to quite exhaust it: nought were gained
 But leave to look - not leave to do ...²⁰

Ironically, this is spoken, or rather thought, by Sordello when he is speciously trying to justify his acceptance of worldly benefit in return for not telling the whole truth as he sees it, arguing (perhaps truthfully) that none will heed him and no purpose be served.

Why should sympathy command you quit
 The course that makes your joy, nor will remit
 Their woe?²¹

The case is analogous to those of Blougram, Sludge and Prince Hohenstiel-Schwangau, where an unsympathetic character may advance,

even advance speciously, an argument with which Browning wholly or partly agrees. And in fact, in Prince Hohenstiel-Schwangau (1871) we find more than one ingenious analogy in support of this doctrine of the utility of evil. Here the Prince argues that black may be needed in order to make white, as elsewhere that poison may speed a cure.

And, therefore, that to change the agency,
 The evil whereby good is brought about -
 Try to make good do good as evil does -
 Were just as if a chemist, wanting white,
 And knowing black ingredients bred the dye,
 Insisted these too should be white forsooth!
 Correct the evil, mitigate your best,
 Blend mild with harsh, and soften black to gray
 If gray may follow with no detriment
 To the eventual perfect purity!
 But as for hazarding the main result
 By hoping to anticipate one half
 In the intermediate process, - no, my friends!
 This bad world, I experience and approve;
 Your good world, - with no pity, courage, hope,
 Fear, sorrow, joy, - devotedness, in short,
 Which I account the ultimate of man,
 Of which there's not one day nor hour but brings,
 In flower or fruit, some sample of success,
 Out of this same society I save -
 None of it for me!22

Similarly, there are many arguments put forward by Don Juan, in Fifine at the Fair (1872), in support of the idea that imperfection is somehow necessary, even desirable. But it would perhaps be fairer to call as witness the Pope in The Ring and the Book (1868-9), whose views it is generally agreed are as close to Browning's as those of any of his dramatic characters.

I can believe this dread machinery
 Of sin and sorrow, would confound me else,
 Devised, - all pain, at most expenditure
 Of pain by Who devised pain, - to evolve,
 By new machinery in counterpart,
 The moral qualities of man - how else? -
 To make him love in turn and be beloved,
 Creative and self-sacrificing too,
 And thus eventually God-like, (ay,
 "I have said ye are Gods," - shall it be said for nought?)
 Enable man to wring, from out all pain,
 All pleasure for a common heritage
 To all eternity.²³

Suddenly we are made to realise, by the more than usually tentative syntax, that when honest with himself Browning maintained such a doctrine only with difficulty and not without soul-searching - that his belief in it was neither so easy nor so facile as Sordello, the Prince, and Don Juan make it sound.

Most of Brownings beliefs were held, as will have been apparent from the way it has been possible to place side by side extracts from either end of his life's work, with remarkable constancy - remarkably little progress or development, one is tempted to say. And his doctrine concerning evil is in one sense no exception. Yet, as we shall see when we come to deal in greater detail with Parleyings with Certain People of Importance in Their Day (1887), the problem of pain and evil seems to have weighed on him increasingly, and the reiteration of his beliefs on the subject becomes, in some of these late poems, more insistent in proportion as we cease and he perhaps ceased to be convinced by them.

So far, then, we have established that Browning is an optimist who is acutely aware of the many-sidedness of truth, and of the variety and plenitude of created life. He also believes, as did Akenside, in the capacity of this multifarious creation to improve progressively. Indeed, by a peculiarly nineteenth century twist to the old doctrine of plenitude, its very variety and consequent imperfections are necessary in order to ensure this continual progressive movement. Or should one say that both the variety and the progress are necessary consequences of God's propensity to create. For the total movement, including this original and continuing creative activity by God, must be thought of as circular. As Henry Jones in his book on Browning's thought puts it:

Intellectual and moral life is progress, although it is the progress of an ideal which is real and complete; the return of the infinite to itself through the finite ...

In the language of theology, we may say that God must create and redeem the world in order to be God; or that creation and redemption, - the outflow of the universe from God as its source, and its return to Him through the salvation of mankind, - reveal to us the nature of God.²⁴

Or again, more picturesquely:

Nature is on its way back to God, gathering Treasure as it goes ... And the idea of evolution necessarily explains the world as the return of the highest to itself. The universe is homeward bound.²⁵

As to whether it ever actually arrives home, or merely travels hopefully, neither Mr. Jones nor Browning is absolutely clear. In

Fust and His Friends (1887), an epilogue to Parleyings with Certain People, Browning seems to indicate the latter, though he may of course be referring just to man's earthly life.

As still to its asymptote speedeth the curve,
 So approximate Man - Thee, who, reachable not,
 Hast formed him to yearningly follow Thy whole
 Sole and single omniscience!²⁶

We have also been made aware of how widely Browning interprets his belief that "progress is the law of life". The same principle is at work in biological progress, in the progress of human society, and the soul's progress through this life to the next. There is even a hint (like the one in Tennyson's The Ring), in Old Pictures in Florence, of progressive transmigrations of the soul through sphere after sphere of existence, though the next stanza throws doubt on the idea, and also perhaps, on the neverendingness of progress towards God which is suggested by the extract just quoted from Fust and His Friends, though there is a certain flippant sloth about the last line which prevents one from taking the stanza too seriously.

There's a fancy some lean to and others hate -
 That, when this life is ended, begins
 New work for the soul in another state,
 Where it strives and gets weary, loses and wins:
 Where the strong and the weak, this world's congeries,
 Repeat in large what they practised in small,
 Through life after life in unlimited series;
 Only the scale's to be changed, that's all.

XXII

Yet I hardly know. When a soul has seen
 By the means of Evil that Good is best,
 And, through earth and its noise, what is heaven's serene -
 When our faith in the same has stood the test -
 Why, the child grown man, you burn the rod,
 The uses of labour are surely done;
 There remaineth a rest for the people of God:
 And I have had troubles enough, for one.²⁷

It is time now to turn more specifically to Browning's beliefs concerning biological evolution. That Browning knew of evolutionary ideas before Darwin published The Origin of Species, and that he accepted the basic hypothesis that life has not always been as it is now, but had changed or developed gradually, by some means or another, from very simple beginnings, we have not only the evidence of certain of his poems, but his own word in a letter written to Furnival in 1881.

Last, about my being "strongly against Darwin, rejecting the truths of science and regretting its advance" - you only do as I should hope and expect in disbelieving that. It came, I suppose, of Hohenstiel-Schwangau's expressing the notion which was the popular one at the appearance of Darwin's book - and you might as well charge Shakespeare with holding that there were men whose heads grew beneath their shoulders, because Othello told Desdemona he had seen such. In reality, all that seems proved in Darwin's scheme was a conception familiar to me from the beginning: see in Paracelsus the progressive development from senseless matter to organized, until man's appearance (Part V). Also in Cleon, see the order of "life's mechanics" - and I dare say in many passages of my poetry: for how can one look at nature as a whole and doubt that, wherever there is a gap, a "link" must be "missing" - through the limited power and opportunity of the looker? But go back and back, as you please, at the back, as Mr. Sludge is made to insist, you find (my faith is as constant) creative

intelligence, acting as matter but not resulting from it. Once set the balls rolling, and ball may hit ball and send any number in any direction over the table; but I believe in the cue pushed by a hand. When one is taunted (as I notice is often fancied an easy method with the un-Darwinized - taunted with thinking successive acts of creation credible, metaphysics have been stopped short at, however physics may fare: time and space being purely conceptions of our own, wholly inapplicable to intelligence of another kind - with whom, as I made Luria say, there is an everlasting moment of creation," if one at all, - past, present, and future, one and the same state. This consideration does not affect Darwinism proper in any degree. But I do not consider that his case as to the changes in organization, brought about by desire and will in the creature, is proved. Tortoises never saw their own shells, top or bottom, nor those of their females, and are diversely variegated all over, each species after its own pattern. And the insects; this one is coloured to escape notice, this other to attract it, a third to frighten the foe - all out of one brood of caterpillars hatched in one day. No - I am incredulous - and you, dear patron and friend, are abundantly tired; so thus much shall serve, scribbled as it has come to pass.²⁸

We must presumably allow Browning letter-writer's licence for claiming no greater likelihood that Prince Hohenstiel-Schwangau's views were Browning's than that Othello's were Shakespeare's. And that the letter was "scribbled as it has come to pass" may account for the fact that its writer uses the same argument as Princess Ida (i.e. that the human concept of time is inapplicable to the activities of God, engaged in His "everlasting moment of creation") seemingly to defend the successive creations of progressionism, while in the same breath recognising that, successive acts of creation being no part of Darwinism, such a "consideration does not affect Darwinism proper in any degree." Nevertheless, to introduce such a defence of successive

creations in a letter whose ostensible purpose is to rebut the accusation that he, Browning, is "strongly against Darwin, rejecting the truths of science and regretting its advance", argues a lingering fondness for a line of argument which at one time, at least, has been a favourite one. One suspects that even in 1881, let alone 1850 or the 1830's, Browning's grasp of the scientific case in favour of evolution is not as firm as Tennyson's was when writing In Memoriam. This becomes even more probable when he gives Darwin credit for proving little more than that there is a continuous scale of being, and then attacks "Darwinism proper" for subscribing to a Lamarckian mechanism. As for the instance he does quote of natural selection, Darwin himself might well have been "incredulous".

I have used the letter to Furnival as a starting point, to indicate the extent and the limitations of Browning's scientific knowledge in 1881, and also his attitude then and in earlier years, to Darwin and evolution, precisely to avoid the charge he levels at others, in that same letter, of assuming that the views expressed by his dramatis personae are necessarily his own. The letter provides a kind of yardstick by which to judge the views we shall find expressed in a number of poems (including Prince Hohenstiel-Schwangau), and also gives us clear permission to use Paracelsus, and to a lesser extent Cleon - to say nothing of the other, unspecified "many passages" of his poetry - as being indicative of the author's own views. And we shall find, on the whole, that the impression the letter gives of

a willing acceptance of the idea of development, together with a nodding and often inaccurate acquaintance with evolutionary science, is borne out by the poems.

First, then, there is the negative evidence that incidental references to or uses of odd items of current geological or biological knowledge, such as the one that follows from the end of Sordello, are very much rarer in Browning than in Tennyson, and in particular in early Browning than in early Tennyson.

See! the sun's
On the square castle's inner-court's low wall
Like the chine of some extinct animal
Half turned to earth and flowers.²⁹

Much the most important source of information on Browning's early beliefs about evolution is, however, as Browning himself affirms, Paracelsus (1835). Paracelsus, that early Renaissance seeker after knowledge who, in real life, kept one foot still firmly in the middle-ages, with their alchemy and magic, as he struggled to free the other and step forward into the modern world, is a strangely Faust-like figure. And indeed it seems more than likely that Browning, who was familiar with Goethe's Faust, consciously or unconsciously drew on memories of that poem for some of the evolutionary ethos of his own. Another source for such ideas is undoubtedly (pace William Clyde de Vane, who is sure that Browning's poem "owes more to Milton's Paradise Lost (V, 403-505) and Pope's Essay on Man (VII) than to the Renaissance physician"³⁰) the writings of Paracelsus himself. For,

as Stevenson points out in Darwin Among the Poets;

Browning insisted that the poem was simply a revitalizing of the available data and did not depart from the recorded facts to any serious degree. Paracelsus was one of the people that the poet's father used to discuss with such intimacy that he seemed to be a personal crony; and in addition to the three folio volumes of Paracelsus' works in the paternal library, Browning consulted the material in the British Museum. So the poet's claim to authenticity may be taken seriously.³¹

And certainly it is possible to find clear echoes in the poem of various facets of Paracelsus' writings. First, there is the pantheism which we shall later have occasion to refer to in the poem.

Such an artificer has God shown Himself, the Master of all things, whose works no one is able to rival. He alone is in all things. He is the primal matter of all: He is the ultimate matter. He is all things.³²

As for the progressive or evolutionary element in Browning's poem, though it would not do to make of the original Paracelsus an embryonic evolutionist, and though the following passage is clearly expounding the microcosm/macrocosm relationship between man and the rest of the universe, one can clearly see how it would seem to chime with nineteenth century ideas about continuous processes of development.

And as a physician compounds all simples into one, preparing a single remedy out of all, which cannot be made up without these numerous ingredients, so God performs His much more notable miracle by concocting man into one compound of all the elements and stars, so that man becomes heaven, firmament, elements, in a word, the nature of the whole universe, shut up and concealed in a slender body. And though God could have made man out of nothing by His one word "Fiat", He was pleased rather to build man up in Nature and to subject him to Nature as its son, but still so that he also subjected Nature to man, though still Nature was man's father.³³

Moreover, one of the most important, even central, concepts in the theories of Paracelsus is that of development - though it appears to be the identical, repeated, and essentially non-progressive development of individual after individual, plant after plant, nugget after nugget, which Paracelsus has in mind, rather than a cumulative, evolutionary development. Nevertheless, as we have seen, this is one important manifestation, to Browning's way of thinking, of a much wider principle of progress.

Now, in this element (water) are the generations of all metals and stones, which exhibit themselves under multifarious natures and forms. Moreover, as you see, all fruits grow out of the earth into the air, and none of them remain in the earth, but go out of it and separate themselves from it, so, growing out of the water, there go forth metals, salts, gems, stones, talcs, marcasites, sulphurs, etc. - all proceeding from the matrix of this element into another matrix, that is, into earth, where the water completes its operation, but the root of minerals is in the water, as the root of trees and herbs is in the earth. But they are brought to perfection above the earth, and pass on to their ultimate matter, which is entirely in the air.

... So is it necessary for man also to become that which he is not. Whatever is destined to pass into its ultimate matter must necessarily differ from its beginning. The beginning is of no avail.³⁴

To return to Browning's Paracelsus, the early part of the poem having been taken up with Paracelsus' frenetic search for knowledge, and with his and our discovering that knowledge is not enough - that love is more important - the climax of the poem is provided by Paracelsus revealing, to his close friend Festus, the sum of all he has learned, "the secret of the world". And the somewhat inconsequential

secret turns out, in a word, to be progress.

The final speech by Paracelsus begins with a statement of joyous plenitude, of plenitude with God immanent in every fibre of his creation - virtually of pantheism.

... the secret of the world was mine.
 I knew, I felt, (perception unexpressed,
 Uncomprehended by our narrow thought,
 But somehow felt and known in every shift
 And change in the spirit, - nay, in every pore
 Of the body, even,) - what God is, what we are,
 What life is - how God tastes an infinite joy
 In infinite ways - one everlasting bliss,
 From whom all being emanates, all power
 Proceeds; in whom is life for evermore,
 Yet whom existence in its lowest form
 Includes; where dwells enjoyment there is he:
 With still a flying point of bliss remote,
 A happiness in store afar, a sphere
 Of distant glory in full view; thus climbs
 Pleasure its heights for ever and for ever.
 The centre-fire heaves underneath the earth,
 And the earth changes like a human face;
 The molten ore bursts up among the rocks,
 Winds into the stone's heart, outbranches bright
 In hidden mines, spots barren river-beds,
 Crumbles into fine sand where sunbeams bask -
 God joys therein. The wroth sea's waves are edged
 With foam, white as the bitten lip of hate,
 When, in the solitary waste, strange groups
 Of young volcanos come up, cyclops-like,
 Staring together with their eyes on flame -
 God tastes a pleasure in their uncouth pride.
 Then all is still; earth is a wintry clod;
 But spring-wind, like a dancing psaltress, passes
 Over its breast to waken it, rare verdure
 Buds tenderly upon rough banks, between
 The withered tree-roots and the cracks of frost,
 Like a smile striving with a wrinkled face;
 The grass grows bright, the boughs are swoln with blooms
 Like chrysalids impatient for the air,
 The shining dorrs are busy, beetles run
 Along the furrows, ants make their ado;
 Above, birds fly in merry flocks, the lark

Soars up and up, shivering for very joy;
 Afar the ocean sleeps; white fishing-gulls
 Flit where the strand is purple with its tribe
 Of nested limpets; savage creatures seek
 Their loves in wood and plain - and God renews
 His ancient rapture.³⁵

There is some geological awareness, without this being very specifically either catastrophic or uniformitarian - rather the former, if anything. But the main impression is of tremendous, burgeoning vitality, and a continuous upward movement both possible and willed. There is, for even the lowest forms of life, because they too are manifestations of the all-pervading creator, "a flying point of bliss remote,/A happiness in store afar, a sphere/Of distant glory in full view", and "thus climbs/Pleasure its heights for ever and for ever".

But though the lines which follow contain this suggestion even more strongly, it is now in a markedly progressionist form, with a suggestion even of Hugh Miller's "geological prophecies"; the progress has become a planned, teleological progress.

Thus he dwells in all,
 From life's minute beginnings, up at last
 To man - the consummation of this scheme
 Of being, the completion of this sphere
 Of life: whose attributes had here and there
 Been scattered o'er the visible world before,
 Asking to be combined, dim fragments meant
 To be united in some wondrous whole,
 Imperfect qualities throughout creation,
 Suggesting some one creature yet to make,
 Some point where all those scattered rays should meet
 Convergent in the faculties of man.³⁶

These particular lines read very much like a blank verse transcript of the microcosm/macrocosm passage already quoted from Paracelsus' own writings, only seen through nineteenth century eyes.

As if to correct any over-rigidity of the teleology just outlined, the lines which follow and which describe the faculties of man, insist that over man's part, at all events, in this process of development, the control by either man or God is very loose-reined. Man at least has freedom, within the broad outlines of the total scheme of things, to behave like Mr. Sludge's billiard balls, even though God may still hold the cue. And there are, says Browning, "Hints and previsions" of man's "faculties" discernible in humbler layers of creation. There is also an early, but unmistakable, statement of the positive role of evil and adversity, which, because of the botanical image used, seems to come nearer to an awareness of the similarly "creative" role of adversity in natural selection (cf. In Memoriam, CXVIII, p. 174) than any of the instances hitherto quoted. This is illusory, however; the lines revert to a strongly teleological or progressionist tone.

Power - neither put forth blindly, nor controlled
 Calmly by perfect knowledge; to be used
 At risk, inspired or checked by hope and fear:
 Knowledge - not intuition, but the slow
 Uncertain fruit of an enhancing toil,
 Strengthened by love: love - not serenely pure,
 But strong from weakness, like a chance-sown plant
 Which, cast on stubborn soil, puts forth changed buds
 And softer stains, unknown in happier climes;
 Love which endures and doubts and is oppressed
 And cherished, suffering much and much sustained,
 And blind, oft-failing, yet believing love,
 A half-enlightened, often chequered trust:-

Hints and previsions of which faculties,
 Are strewn confusedly everywhere about
 The inferior natures, and all lead up higher,
 All shape out dimly the superior race,
 The heir of hopes too fair to turn out false,
 And man appears at last.³⁷

Of some interest, perhaps, is the impeccably Baconian, as opposed to intuitive or poetic, nature of man's knowledge as here described by Browning.

The next twenty-five lines or so are concerned to show that the prefigurings and prophecies of man already referred to are echoed and, as it were, confirmed by man's propensity for attributing pathetically fallacious human qualities to sub-human and even inanimate sectors of creation. The same thought is picked up, many years later, by Prince Hohenstiel-Schwangau, when he uses his own ability to empathise or identify with humbler layers of creation as a sort of proof after the event of evolution's having taken place. This leads somewhat abruptly into:

- And this to fill us with regard for man,
 With apprehensions of his passing worth,
 Desire to work his proper nature out,
 And ascertain his rank and final place,
 For these things tend still upward, progress is
 The law of life, man is not Man as yet.³⁸

"This", in the first line, refers presumably to our liking for pathetic fallacies, but "these things" in the penultimate to the "inferior natures" of the lines previously quoted - or just to a general consensus of all the opinions hitherto expressed by Paracelsus in this speech.

For this is clearly the pith or nub of what he has to say; progress elsewhere in creation is really of interest to Browning only in so far as it confirms and throws light on human progress. What follows is an elaboration of this statement of belief in man's potential for progress, culminating in:

... all tended to mankind,
 And, man produced, all has its end thus far:
 But in completed man begins anew
 A tendency to God. Prognostics told
 Man's near approach; so in man's self arise
 August anticipations, symbols, types
 Of a dim splendour ever on before
 In that eternal circle life pursues.³⁹

Here we have an early statement of that circular movement, away from God in creation and back to God in redemption, which Henry Jones has summarised, and of which progress or evolution forms only a part. The phrase "that eternal circle life pursues", taken by itself, might mean either an endlessly repeated circle, or a never completed one, but taken in conjunction with "so in man's self arise/August anticipations, symbols, types/Of a dim splendour ever on before" it reads much more like a prefiguring of that curve described by John Fust, speeding toward but never reaching its asymptote.

This "tendency to God" which "in completed man begins anew" should have found, of course, a prime representative in Paracelsus.

For men begin to pass their nature's bound,
 And find new hopes and cares which fast supplant
 Their proper joys and griefs; they grow too great
 For narrow creeds of right and wrong, which fade

Before the unmeasured thirst for good: while peace
 Rises within them ever more and more.
 Such men are even now upon the earth,
 Serene amid the half-formed creatures round
 Who should be saved by them and joined with them.
 Such was my task, and I was born to it ...⁴⁰

Moreover, Paracelsus sees no possible clash between the true service of God and the true service of man, since God is immanent in all his creation.

I never fashioned out a fancied good
 Distinct from man's; a service to be done,
 A glory to be ministered unto
 With powers put forth at man's expense, withdrawn
 From labouring in his behalf; a strength
 Denied that might avail him. I cared not
 Lest his success ran counter to success
 Elsewhere: for God is glorified in man,
 And to man's glory vowed I soul and limb.⁴¹

But in his labours on behalf of man, Paracelsus has all his life been too impatient, too anxious to achieve all at a blow. He has seen virtue neither in the gradualness of past achievements, nor in gradualness so far as future achievements are concerned.

Yet, constituted thus, and thus endowed,
 I failed: I gazed on power till I grew blind.
 Power; I could not take my eyes from that:
 That only, I thought, should be preserved, increased
 At any risk, displayed, struck out at once -
 The sign and note and character of man.
 I saw no use in the past: only a scene
 Of degradation, ugliness and tears,
 The record of disgraces best forgotten,
 A sullen page in human chronicles
 Fit to erase. I saw no cause why man
 Should not stand all-sufficient even now,
 Or why his annals should be forced to tell
 That once the tide of light, about to break
 Upon the world, was sealed within its spring:
 I would have had one day, one moment's space,

Change man's condition, push each slumbering claim
 Of mastery o'er the elemental world
 At once to full maturity, then roll
 Oblivion o'er the work, and hide from man
 What night had ushered morn.⁴²

Only now, on his death-bed, does he perceive the value of those obstacles to progress which ensure that it is achieved inch by inch. The argument is virtually the same as that we have met with in Sordello, and elsewhere.

Not so, dear child
 Of after-days, wilt thou reject the past
 Big with deep warnings of the proper tenure
 By which thou hast the earth: for thee the present
 Shall have distinct and trembling beauty, seen
 Beside that past's own shade when, in relief,
 Its brightness shall stand out: nor yet on thee
 Shall burst the future, as successive zones
 Of several wonder open on some spirit
 Flying secure and glad from heaven to heaven:
 But thou shalt painfully attain to joy,
 While hope and fear and love shall keep thee man!
 All this was hid from me: as one by one
 My dreams grew dim, my wide aims circumscribed,
 As actual good within my range decreased,
 While obstacles sprung up this way and that
 To keep me from effecting half the sum,
 Small as it proved; as objects, mean within
 The primal aggregate, seemed, even the least,
 Itself a match for my concentrated strength -
 What wonder if I saw no way to shun
 Despair? The power I sought for man, seemed God's.⁴³

It is at this point that Paracelsus recalls his meeting with Aprile, recorded earlier in the poem, when he first learned that knowledge, or power, was not sufficient, and that man's greatest need was for love.

In this conjuncture, as I prayed to die,
 A strange adventure made me know, one sin
 Had spotted my career from its uprise;
 I saw Aprile - my Aprile there!
 And as the poor melodious wretch disburthened
 His heart, and moaned his weakness in my ear,
 I learned my own deep error; love's undoing
 Taught me the worth of love in man's estate,
 And what proportion love should hold with power
 In his right constitution; love preceding
 Power, and with much power, always more love;
 Love still too straitened in his present means,
 And earnest for new power to set love free.⁴⁴

Yet in spite of having learned this lesson, he records how, when men misunderstood him, valuing the trivial rather than the profound in what he had to tell them, and then, having discovered their error, angrily accused him of deceiving them and rejected his whole teaching, he hated and despised them in return. And why?

In my own heart love had not been made wise
 To trace love's faint beginnings in mankind,
 To know even hate is but a mask of love's,
 To see a good in evil, and a hope
 In ill-success; to sympathise, be proud
 Of their half-reasons, faint aspirings, dim
 Struggles for truth, their poorest fallacies,
 Their prejudice and fears and cares and doubts;
 All with a touch of nobleness, despite
 Their error, upward tending all though weak,
 Like plants in mines which never saw the sun,
 But dream of him, and guess where he may be,
 And do their best to climb and get to him.
 All this I knew not, and I failed.⁴⁵

The conclusion is, of course, that truth requires the viewpoints of both Paracelsus and Aprile - knowledge or power, and love.

Let men
 Regard me, and the poet dead long ago
 Who loved too rashly; and shape forth a third
 And better-tempered spirit, warned by both:

As from the over-radiant star too mad
 To drink the life-springs, beamless thence itself -
 And the dark orb which borders the abyss,
 Ingulfed in icy night, - might have its course
 A temperate and equidistant world.⁴⁶

To a surprising extent, this long closing speech by Paracelsus foreshadows, and in an anticipatory way sums up, most of Browning's doctrines and sentiments as found in his later poetry and as, to some extent, outlined already. It therefore places his evolutionary beliefs in the context of his other beliefs, and indicates where they interact and interlock. There is, first, the variety and plenitude of creation, with rather more emphasis here than elsewhere, possibly, on God's immanence in his whole creation. Later, one feels, Browning recognises that there must be a slightly greater degree of separation between creator and created, if the billiard balls are to have their freedom. There is also a strong, optimistic surge of progressionism, markedly teleological in character, and applied first to man's precursors and later to man himself. Creation before man is seen as leading up to man, both because of prophetic foreshadowings, and because of man's propensity to detect human qualities in nature around him, just as man himself is seen as tending toward God. There is even a glimpse of the eternal circle of creation and redemption, of which progress or evolution is only a part.

The emphasis on progress is tempered, however, by a need for obstacles in the way of progress, to ensure that it take place slowly

and that each stage be fully appreciated. This is a variant of the familiar Browning doctrine of the utility of evil, which is also stated in its more usual form at least twice. Finally there is the insistence on the importance of both power or knowledge, and love - words and concepts similar to those of which, as we shall see, Browning builds a whole mythology in the Reverie of his Asolando (1889). Implicit in such a dual nature to truth is the whole plurality of truth already referred to, and also something of the mistrust of intellectual knowledge which becomes almost an obsession in Browning's late poetry.

Detailed analysis, and the consequent familiarity, tend to breed if not contempt then a certain diminution of wonder. And wonder rather than mere surprise is surely the appropriate word for one's remembered first reaction to this long speech of Paracelsus - wonder not so much at the poetry, which, though perhaps a relief after either Sordello or Prince Hohenstiel-Schwangau, is relatively colourless and lacks the astringency of the best Browning, but wonder at so early and seemingly complete a statement of the nineteenth century ideal of progress. The reaction is much the same as that on discovering Akenside's eighteenth century equivalent. And indeed the pictures presented by both of an aspiring (and, in Browning's case, both joyous and travailing) universe are not dissimilar.

And yet, returning to the fruits of more detailed examination,

it must be admitted that throughout the whole speech, however marked has been the insistence on progress, and even though such progress has clearly been perceived in biological improvements leading up to man as well as in man's subsequent progress - throughout there has been no clear suggestion, beyond the vague sense already referred to of an aspiring universe, that species might mutate. Even more than of the extract we have already examined from The Princess (p. 164) is it true of Paracelsus, that successive acts of creation - though not, I think, successive wholesale creations separated by catastrophes - would probably serve Browning's purpose. Not that there has been any clear suggestion of these having taken place either. Indeed, there has been no clue at all as to any envisaged mechanism; probably, one feels, there was no keen sense that a mechanism, apart from the teleological one of an end-product to be attained, was even necessary, or at all events of any great importance.

The next poem mentioned by Browning in the letter to Furnival as containing evidence of his (Browning's) knowledge of evolutionary ideas is Cleon, published twenty years after Paracelsus in 1855. Earlier than this, in 1846, had come Luria, the play from which Browning quotes the phrase, in that same letter, "the everlasting minute of creation". In the letter it is used to defend "successive acts of creation", and similarly, in its original context in the play, it is used to emphasise a belief in God's right, and willingness, to

intervene in an arbitrary way in his creation, rather than leave all to the operations of that "changeless law" which Tennyson (De Profundis) sought behind the surface appearance of this changing world. One phrase, "To recast/The world, erase old things and make them new", even has a catastrophic ring to it.

My own East!

How nearer God we were! He glows above
 With scarce an intervention, presses close
 And palpitatingly, his soul o'er ours:
 We feel him, nor by painful reason know!
 The everlasting minute of creation
 Is felt there; now it is, as it was then;
 All changes at his instantaneous will,
 Not by the operation of a law
 Whose maker is elsewhere at other work.
 His hand is still engaged upon his world -
 Man's praise can forward it, man's prayer suspend,
 For is not God all-mighty? To recast
 The world, erase old things and make them new,
 What costs it Him? So, man breathes nobly there.
 And inasmuch as feeling, the East's gift,
 Is quick and transient - comes, and lo, is gone -
 While Northern thought is slow and durable,
 Surely a mission was reserved for me,
 Who, born with a perception of the power
 And use of the North's thought for us of the East,
 Should have remained, turned knowledge to account,
 Giving thought's character and permanence
 To the too transitory feeling there -
 Writing God's message plain in mortal words.⁴⁷

The play continues with the contrary view being put by another character, that Luria had performed an even more needful task by bringing the North "fresh stuff/For us to mould, interpret and prove right, -/New feeling fresh from God."⁴⁸ Either way, Luria is like the "third/And better-tempered spirit" who should follow Paracelsus and Aprile - a

fusion of the best of two worlds, of thought and feeling. Moreover, in placing more emphasis than the North on feelings and emotion, and less on intellectual powers, Luria is in broad agreement with the views Browning advances even as early as Paracelsus - and Browning's sympathies in later life lie more and more with Aprile, less and less with Paracelsus. So, although Luria is even more a dramatic character than Prince Hohenstiel-Schwangau, to the extent that he figures in a play, and though we should certainly not take it that he is expressing Browning's whole mind on the subject (he is, after all, giving nostalgic rein to the more Eastern half of his own mind), we can surely take it that Browning had a certain emotional, if not perhaps intellectual, sympathy with the views Luria here expresses. And those views are anti-scientific, anti-rule-of-law, and perfectly consistent with quite arbitrary successive creations - even those separated by catastrophes.

Turning to Cleon (1855), it is obvious that in some respects this is a character whom we ought not to attempt to identify with Browning too closely. For, having painted what in some senses is a progressive picture of life, Cleon is then forced to admit, in the face of human frustration at not being able to transcend the limitations of earthly life and the flesh, that progress is no blessing.

And so a man can use but a man's joy
 While he sees God's. Is it for Zeus to boast,
 "See, man, how happy I live, and despair -
 "That I may be still happier - for thy use!"

If this were so, we could not thank our lord,
 As hearts beat on to doing; 'tis not so -
 Malice it is not. Is it carelessness?
 Still, no. If care - where is the sign? I ask,
 And get no answer, and agree in sum,
 O king, with thy profound discouragement,
 Who seest the wider but to sigh the more.
 Most progress is most failure: thou sayest well.⁴⁹

But what reduces him to such exquisite despair is his pagan (or, by implication, nineteenth century scientifically sceptical) inability to believe in a life after death - in progress beyond the grave. So it is only Cleon, not Browning, who need be dissociated from the poem's original statement of a progressive creed. What Browning wishes to discredit is not the idea of progress, but the materialistic scepticism about any existence or values other than those of this world which ought logically, he feels, to render that idea of progress intolerable.

The starting point of Cleon's professed belief in progress is a wholly human one. In the passage earlier quoted from Cleon, the many abilities of modern man are contrasted favourably with the single talents of earlier men. When we come to that part of the poem where progressive improvements in biological life are suggested, we shall hardly expect a first century Greek to show prophetic knowledge of anything remotely Darwinian. There is, first, a statement of the now familiar Browning doctrine.

Is this apparent, when thou turn'st to muse
 Upon the scheme of earth and man in chief,
 That admiration grows as knowledge grows?
 That imperfection means perfection hid,
 Reserved in part, to grace the after-time?⁵⁰

However, in the catalogue of creation which follows, there is a good deal more emphasis on the perfection in its own right of each individual species than on the driving force of its relative imperfection.

If, in the morning of philosophy,
 Ere aught had been recorded, nay perceived,
 Thou, with the light now in thee, couldst have looked
 On all earth's tenantry, from worm to bird,
 Ere man, her last, appeared upon the stage -
 Thou wouldst have seen them perfect, and deduced
 The perfectness of others yet unseen.
 Conceding which, - had Zeus then questioned thee
 "Shall I go on a step, improve on this,
 "Do more for visible creatures than is done?"
 Thou wouldst have answered, "Ay, by making each
 "Grow conscious in himself - by that alone.
 "All's perfect else: the shell sucks fast the rock,
 "And slides, forth range the beasts, the birds take flight,
 "Till life's mechanics can no further go -
 "And all this joy in natural life is put
 "Like fire from off thy finger into each,
 "So exquisitely perfect is the same.
 "But 'tis pure fire, and they mere matter are;
 "It has them, not they it: and so I choose
 "For man, thy last premeditated work
 "(If I might add a glory to the scheme)
 "That a third thing should stand apart from both,
 "A quality arise within his soul,
 "Which, intro-active, made to supervise
 "And feel the force it has, may view itself,
 "And so be happy."⁵¹

Taken in isolation, this emphasis, so reminiscent of the chain of being, on the perfection of each stage in creation - so that the

imperfection of worm, fish or bird lies not in being a partial or imperfect worm, fish or bird, but merely in not being man, and that of man in not being God - might be set aside as Cleon's rather than Browning's. But it is not an isolated instance. The same stress on the completeness and perfection of each created being is there in Parleyings with Certain People - Bernard de Mandeville (1887).

Let the oak increase
 His corrugated strength on strength, the palm
 Lift joint by joint her fan-fruit, ball and balm, -
 Let the coiled serpent bask in bloated peace, -
 The eagle, like some skyey derelict,
 Drift in the blue, suspended, glorying, -
 The lion lord it by the desert-spring, -
 What know or care they of the power which pricked
 Nothingness to perfection? I, instead,
 When all-developed still am found a thing
 All-incomplete.⁵²

Here such perfection is more specifically contrasted with man's dissatisfaction and awareness of his incompleteness (though this is also brought out, later, in Cleon), and we are reminded of the lines in A Death in the Desert (1864), when St. John

Finds progress man's distinctive mark alone,
 Not God's, and not the beasts': God is, they are,
 Man partly is and wholly hopes to be.¹⁵

But the dissatisfaction is a dissatisfaction at not being more God-like rather than one at being imperfectly human, and only exists because of the gift of self-awareness which, as is made clear in Cleon, man alone has of earthly creatures. The worm does not know it is not beast, bird or man, and is content. Moreover, St. John goes further,

(and the same point is made in Bernard de Mandeville) to assert that that which man shares with the animals, his body, sprang early to perfection; only his mind and soul develop.

... the body sprang
At once to the height, and stayed: but the soul, - no!
Since sages who, this noontide, meditate
In Rome or Athens, may descry some point
Of the eternal power, hid yestereve.⁵³

Two conclusions follow. First, that such an emphasis on the intrinsic perfection, and therefore fixity, of each stage in creation is obviously at odds with any idea of the mutability of species, and much more easily reconcilable with a belief in successive acts of creation than with Darwinism and natural selection, the whole basis of the latter being intrinsic as well as relative imperfection. And such an emphasis seems, if anything, to be on the increase in Browning's writings: it was not obvious in Paracelsus; (1835); it is quite clear, though in a dramatic guise, in Cleon (1855); it speaks in Browning's own voice in Bernard de Mandeville (1887). Second, the only kind of progress which truly engages the interest of Browning is human progress. Evidence of other kinds of progress he embraces or ignores, as it seems to throw light on or obscure this essential progress of mankind.

As for Browning's claim, in the letter to Furnival, that the order of "life's mechanics" - shell=fish, fish, reptile, beast, bird - in is accord with evolutionary theory, this is more or less true, if

one may allow a poet licence to rank soaring birds higher than earth-clinging beast, though as much could be said for the scale of being in the poems of Thomson and Pope. However, as has already been argued in connection with Tennyson (p.175), by the middle of the nineteenth century, a poet was in fact more likely to be familiar with some form of evolutionary theory than with the scale of being or neo-Platonism. But it remains virtually certain that, in 1855, this was still in Browning's case a progressionist form of evolution, relying on successive acts of creation.

So far, then, we have discovered Browning to have felt the need of progress to account for the existence of imperfection and evil, and to complete the cycle of creation and redemption. Such progress, moreover, in as early a poem as Paracelsus, includes biological as well as social and mental progress, though there is no real suggestion of inanimate, cosmic progress. Indeed, in Paracelsus there is an Akenside-like sense that the whole, living creation is on the march, though absolutely no sense as to mechanism, and certainly no hint as to mutation of species. This is perhaps hardly surprising, when one considers that the poem was published nine years before Chambers' Vestiges, and only three years after the publication of the second volume of Lyell's Principles of Geology (the one in which he summarises Lamarck), which we have no reason to suspect Browning of having read, and which Tennyson himself may well not have read till

two years after Paracelsus was published. Subsequent evidence, mainly from Cleon, but corroborated by later poems, would seem to indicate some clarification of Browning's views in the years which followed, and a certain hardening in favour of successive acts of creation. Certainly the publication of Vestiges, of which he must surely have known at least by repute, between the appearances of Paracelsus and Cleon does not seem to have influenced Browning greatly. And the publication of The Origin of Species between Cleon and A Death in the Desert appears to have had as its main effect (whether as a conscious or unconscious reaction) a still greater insistence on the part of Browning on the difference between man and beast. Similarly, in Rabbi Ben Ezra, the poem immediately preceding A Death in the Desert in the 1864 volume, man's possible relationship to animals, though not expressly denied, is resolutely transcended.

V

Rejoice we are allied
 To that which doth provide
 And not partake, effect and not receive!
 A spark disturbs our clod;
 Nearer we hold of God
 Who gives, than of His tribes that take, I must believe ...

VII

What I aspired to be,
 And was not, comforts me:
 A brute I might have been, but would not sink i' the scale.⁵⁴

Later stanzas seem more openly to acknowledge our kinship with and possible descent from animals, though insisting that we can and shall escape from such early connections. But in a typical Browning paradox,

our very flesh is to be an aid to our transcending the flesh.

XII

Let us not always say
 "Spite of this flesh to-day
 "I strove, made head, gained ground upon the whole!"
 As the bird wings and sings,
 Let us cry "All good things
 "Are ours, nor soul helps flesh more, now, than flesh
 helps soul!"

XIII

Therefore I summon age
 To grant youth's heritage,
 Life's struggle having so far reached its term:
 Thence I shall pass, approved
 A man, for aye removed
 From the developed brute; a god though in the germ.⁵⁵

Also from the 1864 volume is Caliban upon Setibos, and it may even be that some of the Hardy-esque cruelty, capriciousness and ultimate indifference of Setibos is an indirect reflection of the heartlessness of natural selection, though the poem would seem to be more a reaction to the new anthropology. Browning had already shown signs of such an interest in Bishop Blougram's Apology (1855), where the Bishop's mock explanation of the origin of shame reads like a prophetic parody of Darwin's use, in The Descent of Man (1871), of the principles of natural selection to account for the origin of morality.

Philosophers deduce you chastity
 Or shame, from just the fact that at the first
 Whoso embraced a woman in the field,
 Threw club down and forewent his brains beside,
 So, stood a ready victim in the reach
 Of any brother savage, club in hand;
 Hence saw the use of going out of sight
 In wood or cave to prosecute his loves:
 I read this in a French book t'other day.⁵⁶

The passage is of interest mainly because of the way Blougram - or his French author - has almost stumbled, by 1855, on the principle of natural selection!

Only two poems remain to be considered to which Browning refers, directly or indirectly, in his letter to Furnival on the subject of evolution; Mr. Sludge, "The Medium" (1864), and Prince Hohenstiel-Schwangau (1871). The billiard ball image, borrowed from the former, does not really warrant any closer examination, being in fact more fully developed in the letter than in the poem. It merely emphasises Browning's continuing belief in a controlled, teleological form of evolution, as opposed to a chance-directed, materialistic one. But the poem is of interest for a passage which clearly illustrates Browning's partial grasp, at least, of the nature of nineteenth century science, and the profound difference which it had made to the areas in which men searched for an explanation of the universe. After outlining the kind of unexplained, large-scale and usually catastrophic, natural phenomena ("lightnings, earthquakes, whirlwinds") which primitive man saw as evidence of divine activity, he records how the unexplained phenomena in which, if he exists, God is now presumed to lurk are the minute occurrences which have not yet been included within the scope of natural law, but upon which the whole subsequent chain of cause and effect depends. He might equally well

have contrasted both attitudes with that of eighteenth century deism, which sought and found its evidence of God not in what could not be explained, but in what appeared to have been explained. For those whose God is a God of Law, to extend the scope of the Law is to extend one's understanding of God, whereas for those who find the Law self-explanatory, and whose God is a "God of the gaps", to extend the scope of the Law so as to fill in the gaps may be to dispense with the need for God. And this, when the gaps appeared to be growing dangerously small, as they did in the nineteenth century and as they perhaps no longer seem to be doing, could be felt as a real threat.

Well, sir, the old way's altered somewhat since,
 And the world wears another aspect now:
 Somebody turns our spyglass round, or else
 Puts a new lens in it: grass, worm, fly grow big:
 We find great things are made of little things,
 And little things go lessening till at last
 Comes God behind them. Talk of mountains now?
 We talk of mould that heaps the mountain, mites
 That throng the mould, and God that makes the mites.
 The Name comes close behind a stomach-cyst,
 The simplest of creations, just a sac
 That's mouth, heart, legs and belly at once, yet lives
 And feels, and could do neither, we conclude,
 If simplified still further one degree:
 The small becomes the dreadful and immense!
 Lightning, forsooth?⁵⁷

The closing line and a half may seem, to us, uncannily prophetic of the unleashing of the atom. But the evolutionary implications of the passage are even clearer. Complex forms of life no longer seem a mystery, since we know how they originated from simpler forms; the

stupendous, unexplained, creative act of God is restricted, in a sense, to the simplest of all, the simplest imaginable forms of life. Therefore the extract presupposes, though it does not specify, some non-supernatural mechanism for evolution.

We have moved a long way, it seems, from Cleon. Side by side, in the 1864 volume, we have the pronouncements of St. John and Mr. Sludge. The choice of spokesmen may not even be fortuitous or inappropriate. For it cannot be doubted that the more clearly Browning came to understand the possible implications of what Messrs Darwin and Sludge had to say, the more he perceived, and the more he was concerned to guard against, the threat to that status of man insisted on by St. John and the Rabbi Ben Ezra.

And so we come to Prince Hohenstiel-Schwangau (1871), and the first unequivocal reference made by Browning to the subject of biological evolution since the publication of The Origin of Species (indeed, since that of Paracelsus). Interestingly, a letter to Robert Buchanman early in the year of the poem's publication seems to put its composition in the very year of the publication of The Origin of Species.

Why speak at all disparagingly of your poem (Napoleon Fallen) ... I wrote, myself, a monologue in his name twelve years ago, and never could bring the printing to mind as yet. One day perhaps.⁵⁸

Admittedly, one a year later to Miss Edith Story puts the matter in a different perspective.

I really wrote - that is, conceived the poem, twelve years ago in the Via del Tritone - in a little handbreadth of prose, - now yellow with age and Italian ink, - which I breathed out into this full-blown bubble in a couple of months this autumn that is gone - thinking it fair so to do.⁵⁹

Nevertheless, it would be surprising if some comment or other in the "little handbreadth of prose" composed in 1859/60 were not the source of the link in Browning's mind between Napoleon III and Charles Darwin.

Earlier than the direct comments on evolution, however, there is a passage where the Prince compares the periods of revolutionary change in human society, often brought about by one person, to the earth-shaking changes of catastrophism.

History shows you men whose master-touch
 Not so much modifies as makes anew:
 Minds that transmute nor need restore at all.
 A breath of God made manifest in flesh
 Subjects the world to change, from time to time,
 Alters the whole condition of our race
 Abruptly, not by unperceived degrees
 Nor play of elements already there,
 But quite new leaven, leavening the lump,
 And liker, so, the natural process. See!
 Where winter reigned for ages - by a turn
 I' the time, some star-change, (ask geologists)
 The ice-tracts split, clash, splinter and disperse,
 And there's an end of immobility,
 Silence, and all that tinted pageant, base
 To pinnacle, one flush from fairyland
 Dead-asleep and deserted somewhere, - see!
 As a fresh sun, wave, spring and joy outburst.
 Or else the earth it is, time starts from trance,
 Her mountains tremble into fire, her plains
 Heave blinded by confusion: what result?

New teeming growth, surprises of strange life
 Impossible before, a world broke up
 And re-made, order gained by law destroyed.
 Not otherwise, in our society
 Follow like portents, all as absolute
 Regenerations: they have birth at rare
 Uncertain unexpected intervals
 O' the world, by ministry impossible
 Before and after fulness of their days:
 Some dervish desert-spectre, swordsman, saint,
 Law-giver, lyrist, - oh, we know the names!
 Quite other these than I. Our time requires
 No such strange potentate, - who else would dawn, -
 No fresh force till the old have spent itself.
 Such seems the natural oeconomy.⁶⁰

This really is a very comprehensive outline of catastrophism - a catastrophism, moreover, which has appropriated the infinitely slow, uniformitarian phenomenon of the advent of an ice-age, and added it to the more usual catastrophist armoury by speeding it up out of all recognition. Periods of "immobility" are ended "abruptly", and progress, "New teeming growth, surprises of strange life/Impossible before", are achieved quite specifically "not by unperceived degrees/Nor play of elements already there" (the words read like the recanting of a Lyellian), but by means of "a world broke up/And re-made, order gained by law destroyed". And human revolutions which are comparable to such sudden, arbitrary interruptions of the usual order of things are "liker, so, the natural process". One is tempted, at first, to assume that Browning, remembering having attributed such non-Darwinian views to the Prince, and assuming that these were what gave people cause to assume that he was "strongly against Darwin, rejecting the

truths of science and regretting its advance", is dissociating himself from these catastrophic views in the letter to Furnival.

Two factors seem to make it likely, however, in spite of his warning against identifying his views with those of the Prince, that at the time of writing the poem Browning on the one hand still regarded some form of catastrophism as a tenable hypothesis, and on the other did not fully understand that its tenets were irreconcilable with those of Darwinism. First, there is the fact that the Prince is a conservative, a gradualist in all things. This is apparent enough even from the passage above, but he goes out of his way to underline it many times. So his use of catastrophism is to describe a kind of human progress which takes place from time to time but of which he on the whole disapproves. Surely, one feels, had Browning subscribed to, or even been familiar with, Lyellian uniformitarianism, he would have allowed the Prince to use it in support of the kind of gradual progress of which he did approve, and to show how that it was which was "liker, so the natural process" - to substantiate the closing line, in fact, where he defends his own policy as seeming "the natural oeconomy". Such ignorance of all that Lyell stood for is, after all, of a piece with the patchiness of Browning's knowledge elsewhere, and notably over the distinction between Darwinian and Lamarckian mechanisms for evolution. Moreover, it is almost what one would expect of someone who, like Browning, derived his belief in progress almost

entirely from above and scarcely at all from below. His assumptions about the nature of God and of what must be his relationship with his creation (i.e. that God created an imperfect universe, in order that it should yearn for, and progress towards, perfection), not the close observation of natural phenomena, were what made Browning an evolutionist. And the concept which he derived thence of gradual development may have percolated downwards, as it were, as far as the Darwinian strata of organic life, but never penetrated to the Lyellian or geological layers of creation.

The second and very material factor is that the Prince himself, later in the poem, uses a non-catastrophic version of the evolutionary theory to illustrate another stage in his argument, with at least as great a readiness to agree with it, so far as one can judge, as with the catastrophism he has earlier outlined. This we must examine in greater detail before returning to the intriguing question of what Browning and/or Prince Hohenstiel-Schwangau really believe about evolution.

The theory the Prince is pursuing, at this later point in the poem, and which he uses biological evolution to illustrate, is that the higher up the scale (social, cultural or biological) one moves, the greater the degree of individuation and therefore the wider the variety - a theory much nearer to Herbert Spencer's dictum that progress can be equated with heterogeneity and complexity, or to Von Baer's

discovery that embryos of widely different species begin life as virtually indistinguishable particles of protoplasm, and only gradually become more and more differentiated, than to Darwinism proper.

I who trace Providence without a break
 I' the plan of things, drop plumb on this plain print
 Of an intention with a view to good,
 That man is made in sympathy with man
 At outset of existence, so to speak;
 But in dissociation, more and more,
 Man from his fellow, as their lives advance
 In culture; still humanity, that's born
 A mass, keeps flying off, fining away
 Ever into a multitude of points,
 And ends in isolation, each from each;
 Peerless above i' the sky, the pinnacle, -
 Absolute contact, fusion, all below
 At the base of being.⁶¹

There follows a further elaboration of how man is at one with his fellows "I' the little things of life, its fleshly wants", but "tends to freedom and divergency/In the upward progress," and how both these urges, to care for his fellows and to care for himself alone, are necessary and right. It is at this point that the aid of evolution is enlisted.

"Will you have why and wherefore, and the fact
 Made plain as pikestaff?" modern Science asks.
 "That mass man sprung from was a jelly-lump
 Once on a time; he kept an after course
 Through fish and insect, reptile, bird and beast,
 Till he attained to be an ape at last
 Or last but one."⁶²

The Prince's lack of hostility to such an idea is made quite clear, because when the voice of Science continues, somewhat aggressively on the defensive, "And if this doctrine shock/In aught the natural pride,"

the Prince interrupts:

Friend, banish fear,
 The natural humility replies!
 Do you suppose even I, poor potentate,
 Hohenstiel-Schwangau, who once ruled the roast, -
 I was born able at all points to ply
 My tools? or did I have to learn my trade
 Practise as exile ere perform as prince?
 The world knows something of my ups and downs:
 But grant me time, give me the management
 And manufacture of a model me,
 Me fifty-fold, a prince without a flaw, -
 Why, there's no social grade, the sordidest,
 My embryo potentate should blink and scape.
 King, all the better he was cobbler once,
 He should know, sitting on the throne, how tastes
 Life to who sweeps the doorway. But life's hard,
 Occasion rare; you cut probation short,
 And, being half-instructed, on the stage
 You shuffle through your part as best you can,
 And bless your stars, as I do. God takes time.
 I like the thought he should have lodged me once
 I' the hole, the cave, the hut, the tenement,
 The mansion and the palace; made me learn
 The feel o' the first, before I found myself
 Loftier i' the last ...⁶³

Incidentally, the use of the word "embryo" to describe his trainee potentate makes one realise that the earlier lines, seemingly describing evolution, could with even greater appropriateness be referring to the development of the embryo through seemingly evolutionary phases, though strictly speaking neither insects nor apes should in this case figure in the list. However, ^{since} ~~as~~ there seems to be no evidence elsewhere that Browning knew of such recapitulation theories, ^{since} ~~as~~ such detailed scientific knowledge in support of evolution is out of character for him, ^{since} ~~as~~ (thanks to Huxley and Bishop Wilberforce) the question of apes being the ancestors of men was so integrally a part

of evolutionary controversy, and ~~as~~^{since} only a few lines later Browning is quite clearly referring to straightforward biological evolution, the word "embryo" would seem to be an isolated, fortuitous metaphor.

Next there comes a description of that anthropomorphic kinship with nature which Browning has already used in Paracelsus as a kind of retrospective proof of evolution's having taken place, and this is followed by a riposte to those who protest that to believe in evolution is to deny the possibility of a divine purpose behind the universe. The Prince's own views on divine providence have already been made quite clear ("I who trace Providence without a break/I' the plan of things"); here he takes trouble to reconcile such views with evolution.

O you count the links,
 Descry no bar of the unbroken man?
 Yes, - and who welds a lump of ore, suppose
 He likes to make a chain and not a bar,
 And reach by link on link, link small, link large,
 Out to the due length - why, there's forethought still
 Outside o' the series, forging at one end,
 While at the other there's - no matter what
 The kind of critical intelligence
 Believing that last link had last but one
 For parent, and no link was, first of all,
 Fitted to anvil, hammered into shape.
 Else I accept the doctrine ...64

There seems little doubt that the Prince does, in fact, "accept the doctrine" of evolution, and that his hostility is reserved wholly for "The kind of critical intelligence" which believes neither that God was responsible for initiating the whole progressive process, nor

that the final stage was foreseen and foreordained. Indeed, all the views the Prince expresses about evolution seem neither such as Browning would recognise as being hostile to Darwin, nor such as he would wish to dissociate himself from; certainly there is nothing to make us suspect Browning of being "strongly against Darwin".

So we are left with a double problem. First, how are we to credit that the Prince could simultaneously believe in catastrophism and evolution, and second, if he did in fact reconcile the two and perceive no clash between them, where in the poem is the hostility to Darwin to which, in the letter to Furnival, Browning attributed the mistaken view that he, Browning, was hostile to Darwin?

As far as the first point is concerned, there is a real clash, which nothing can gainsay, between "a world broke up/And re-made" by "absolute/Regenerations" on the one hand, and "That mass man sprung from was a jelly-lump/Once on a time; he kept an after course/Through fish and insect, reptile, bird and beast,/Till he attained to be an ape at last" on the other. One cannot in all honesty talk of having "kept an after course" through what amounts to a series of discontinuous, arbitrary jerks forward, with the "law" each time being "destroyed". Yet this, it seems, is what Browning was prepared to let the Prince do.⁶⁵ Can it be that Browning thought, as late as 1871, that evolution was still evolution, even though based on successive acts of creation? Can it be that when, a few lines later, he criticises

the belief that "that last link had last but one/For parent", he did not mean, as one assumes him to have done, that it is impossible to account for man's origin merely in terms of having descended from apes, but quite literally that that last link did not have last but one for parent, having been specially created as last of a planned series of creations? It almost begins to look like it.

And then one remembers that when Science asked the Prince whether he found anything shameful in the idea that man, having kept his after-course through fish, insect, et., "attained to be an ape at last/Or last but one" (and why should there be shame, if "descent" is by separate creation?), he replied, "I like the thought". One remembers that, even in the image of the chain, God is described as "forging at one end" only - the opposite end to man's. One even remembers Mr. Sludge, perceiving that God's role lay "close behind a stomach-cyst".

There is, it seems, no real answer, save perhaps that to Browning the principle of progress itself, by whatever means, was of such overriding importance that the minor matter of precise method was not one he concerned himself with greatly, or even felt constrained to achieve consistency over. Any that would "save appearances" would serve, and he was prepared to let his characters, like Milton's Raphael, seem in two or more minds if this suited his purpose, or if,

as in the adjacent references in the letter to Furnival to Lamarckianism and natural selection, he did not clearly perceive a distinction.

As to the hostility to Darwin and to science which in his letter to Furnival he attributes to the Prince, there is so little sign in the poem that either the Prince or Browning realised they were being hostile to Darwin that one can only assume Browning's memory of the poem played him false. Either that, or, in the interval between the appearance of the poem and the writing of the letter, Browning realised (or someone pointed out to him) the inconsistency between the catastrophic and evolutionary theses advanced by the Prince, and he was, in the letter, being wise after the event.

A year later, in 1872, Browning published Fifine at the Fair, and the problem might seem even more intractable as to when it is Browning speaking and when merely Don Juan. Certainly, of all his equivocal mouthpieces (Blougram, Sludge, Prince Hohenstiel-Schwangau, and now Don Juan), Don Juan is the one who caused most confusion and embarrassment on this score to Victorian readers. Yet the poem itself does much to ease the dilemma, by dwelling more explicitly, and certainly at greater length, than any other of Browning's on the necessity of knowing all aspects of beauty/truth, even the distortions, before being able to synthesise a whole. Indeed, Don Juan goes one better even than the neo-Platonists, by seeming to insist on the worth and necessity not only of every species but of every individual of

every species.

XXIX

Partake my confidence! No creature's made so mean
 But that, some way, it boasts, could we investigate,
 Its supreme worth: fulfils, by ordinance of fate,
 Its momentary task, gets glory all its own,
 Tastes triumph in the world, pre-eminent, alone.
 Where is the single grain of sand, mid millions heaped
 Confusedly on the beach, but, did we know, has leaped
 Or will leap, would we wait, i' the century, some once,
 To the very throne of things? - earth's brightest for
 the nonce,
 When sunshine shall impinge on just that grain's facette
 Which fronts him fullest, first, returns his ray with jet
 Of promptest praise, thanks God best in creation's name!
 As firm is my belief, quick sense perceives the same
 Self-vindicating flash illustrate every man
 And woman of our mass, and prove, throughout the plan,
 No detail but, in place allotted it, was prime
 And perfect.⁶⁶

Even the speaker himself, though in some ways "made so mean", must be permitted (as is Fifine, so he claims) a "self-vindicating flash" or two of truth, and that he should use such truth speciously is intended, not to detract from its intrinsic worth, but merely to add to it the piquancy of a dramatic, worldly, and less than perfect context.

Granted each grain of sand has its moment, however, there remains the paradox of its imperfection within perfection. Here (Browning's syntax permitting) lies the function of the soul - and of art.

LVI

I gather heart through just such conquests of the soul,
 Through evocation out of that which, on the whole,
 Was rough, ungainly, partial accomplishment, at best,
 And - what, at worst, save failure to spit at and detest? -

- Through transference of all, achieved in visible things,
 To where, secured from wrong, rest soul's imaginings -
 Through ardour to bring help just where completion halts,
 Do justice to the purpose, ignore the slips and faults -
 And, last, through waging with deformity a fight
 Which wrings thence, at the end, precise its opposite.⁶⁷

Georg Roppen, in Evolution and Poetic Belief, sees, in this Platonic emphasis on the soul and the perfection it alone perceives, further evidence of Browning's reaction against the purely materialistic interpretation of the universe which was permitted and encouraged by Darwinism - a reaction evident, as we have seen, in some of Browning's poems written nearer the time of the publication of The Origin of Species. Yet even he has to admit that, in the description of the Carnival at Venice, there is the same old Browning emphasis on the need for the physical world, with all its imperfections on its head, if we are to attain to that which lies behind and beyond.

CI

Are we not here to learn the good of peace through strife,
 Of love through hate, and reach knowledge by ignorance?⁶⁸

The poem has other more direct, though more peripheral references to Browning's beliefs concerning evolution. First there is the passage in which he seems to be bewailing the so-ephemeral, so-soon-to-be-superseded, nature of philosophic, or scientific, thought.

CXII

Alack, Philosophy!
 Despite the chop and change, diminished or increased,
 Patched-up and plastered-o'er, Religion stands at least
 I' the temple-type. But thou? Here gape I, all agog

These thirty years, to learn how tadpole turns to frog;
 And thrice at least have gazed with mild astonishment,
 As, skyward up and up, some fire-new fabric sent
 Its challenge to mankind that, clustered underneath
 To hear the word, they straight believe, ay, in the teeth
 O' the Past, clap hands and hail triumphant Truth's
 outbreak -

Tadpole-frog-theory propounded past mistake!
 In vain! A something ails the edifice, it bends,
 It bows, it buries ... Haste! cry "Heads below" to friends -
 But have no fear they find, when smother shall subside,
 Some substitution perk with unabated pride
 I' the predecessor's place.⁶⁹

Despite the Browning scholar who thinks "Browning surely had in mind Darwinism, the higher criticism, and neo-rationalism",⁷⁰ Roppen is surely nearer the mark in favouring "Progressionism ... Lamarckian and teleological doctrine in Vestiges of Creation, and finally ... Natural Selection".⁷¹ At least all three are recognisably "tadpole-frog" theories, and at least they supercede each other. My only caveat would be that, though we doubtless have three variant theories of evolution in question here, Browning may not have been quite as clear as Roppen as to precisely which three. However, his attitude to the various jostling theories does make it easier to understand how Prince Hohenstiel-Schwangau could advance two of them in the same breath, as it were.

It should, in fairness to Browning, be pointed out that he is not here jibing at science for not being able to arrive at ultimate truth, but only at those who think it does arrive there. The next section makes clear the necessarily temporary trustworthiness of all

human approximations to the nevertheless existent truth.

CXIII

Truth builds upon the sands,
 Though stationed on a rock: and so her work decays,
 And so she builds afresh, with like result. Nought stays
 But just the fact that Truth not only is, but fain
 Would have men know she needs must be, by each so plain
 Attempt to visibly inhabit where they dwell.
 Her works are work, while she is she; that work does well
 Which lasts mankind their life-time through, and lets believe
 One generation more, that, though sand run through sieve,
 Yet earth now reached is rock, and what we moderns find
 Erected here is Truth, who, 'stablished to her mind
 I' the fulness of the days, will never change in show
 More than in substance erst: men thought they knew; we
 know!⁷²

This, of course, is perfectly orthodox Browning doctrine.

CXXIV

Let only soul look up, not down, not hate but love,
 As truth successively takes shape, one grade above
 Its last presentment, tempts as it were truth indeed
 Revealed this time; so tempts, till we attain to read
 The signs aright, and learn, by failure, truth is forced
 To manifest itself through falsehood ...⁷³

Finally, there seems to be yet another confusion between Darwinism and Lamarckianism. To recognise, argues Browning, that each new truth for today is merely tomorrow's falsehood, that "promotion proves as well/Defeat", means that ultimate truth, and ultimate power, lies in other hands than ours, and is conducive to a humility on the part of Soul which is in contrast to the arrogance encouraged by a belief in body's self-induced progress.

CXXVIII

Soul finds no triumph, here, to register like Sense

With whom 'tis ask and have, - the want, the evidence
 That the thing wanted, soon or late, will be supplied.
 This indeed plumes up will; this, sure, puffs out with
 pride,
 When, reading records right, man's instincts still
 attest
 Promotion comes to Sense because Sense likes it best;
 For bodies sprouted legs, through a desire to run:
 While hands, when fain to filch, got fingers one by one,
 And nature, that's ourself, accommodative brings
 To bear that, tired of legs which walk, we now bud wings
 Since of a mind to fly.⁷⁴

There seems little doubt, if we are to take into account other sources of evidence such as the letter to Furnival, that Browning thought he was here attacking a proposition of Darwin's, whose name Browning associated, as did and do most people, with evolution rather than natural selection, and whom he was quite capable of crediting with two or more of the "tadpole-frog" variants of that theory. Nevertheless his target was the right one, in that, as we have seen and as we shall see again in the work of Swinburne and to some extent Meredith, the principal source of the arrogance Browning is here complaining of was and was to be the neo-Lamarckianism which took "the want" to be sufficient "evidence/That the thing wanted, soon or late, will be supplied". After all, the year before the appearance of Fifine at the Fair, Swinburne had published Songs before Sunrise and had trumpeted his "Glory to Man in the highest! for Man is the master of things". The chief complaint that Browning, alias Francis Furini, had against the materialism of Darwinism proper was quite other, as will appear, than that it was conducive to arrogance.

We have already met the lines in La Saisiaz (1878) in which evolution is adduced to demonstrate how things are on the mend.

Dragons were, and serpents are, and blind-worms will be:
 ne'er emerged
 Any new-created python for man's plague since earth was
 purged.¹⁷

This is a momentary, and incidental, use of knowledge derived from evolution to illustrate, but in no real sense to provide grounds for, a struggling optimism which Browning in this poem bases almost entirely on subjective evidence. We are a long way from Paracelsus, where evolutionary ideas, still very vague as to mechanism and in no sense Darwinian or materialistically deterministic, provided very real grounds for Browning's belief in progress.

In his later poems, and particularly in Parleyings with Certain People of Importance in Their Day (1887), Browning tends more and more to emphasise in this way the importance of our admittedly limited subjective knowledge of God and of his purposes, and in like manner to denigrate scientific and other avenues to so-called objective knowledge. In Bernard de Mandeville Browning succeeds, by misunderstanding the irony of the Fable of the Bees, in enlisting its author's support for his usual doctrine that the soul is "stung to strength through weakness, strives for good/Through evil",⁷⁵ and then proceeds almost to jeer at man's pretensions to knowledge and understanding.

VI

Man, with the narrow mind, must cram inside
 His finite God's infinitude, - earth's vault
 He bids comprise the heavenly far and wide,
 Since Man may claim a right to understand
 What passes understanding. So, succinct
 And trimly set in order, to be scanned
 And scrutinized, lo - the divine lies linked
 Fast to the human, free to move as moves
 Its proper match: awhile they keep the grooves,
 Discreetly side by side together pace,
 Till sudden comes a stumble incident
 Likely enough to Man's weak-footed race,
 And he discovers - wings in rudiment,
 Such as he boasts, which full-grown, free distant
 Would lift him skyward, fail of flight while pent
 Within humanity's restricted space.
 Abjure each fond attempt to represent
 The formless, the illimitable!⁷⁶

At another point, as we have seen (p.243), there is an echo of Cleon and A Death in the Desert, with their insistence on progress being the prerogative of man alone, all other creatures being static in their limited perfection, and even man remaining static within the perfect limits of his body. Indeed, the following lines have been read⁷⁷ as a complete refutation of the whole evolutionary theory - lines, moreover, not to be understood as spoken by a first century Greek or Jew, or even an eighteenth century Dutchman, but by Man, and at this point seemingly timeless Man, though subsequently assuming the viewpoint of pre-Promethean Man.

X

Man speaks now: "What avails Sun's earth-felt thrill
 To me? Sun penetrates the ore, the plant -
 They feel and grow: perchance with subtler skill
 He interfuses fly, worm, brute, until

Each favoured object pays life's ministrant
 By pressing, in obedience to his will,
 Up to completion of the task prescribed,
 So stands and stays a type. Myself imbibed
 Such influence also, stood and stand complete -
 The perfect Man, - head, body, hands and feet,
 True to the pattern: but does that suffice?
 How of my superadded mind which needs
 - Not to be simply, but to do ...⁷⁸

It seems unnecessary to assume that the lines mean more than that man is the only member of the animal kingdom who is ever self-consciously dissatisfied with his lot, and who attempts or succeeds within his own individual lifetime to better himself. But it is clear from the extract that Browning's attention is being more and more exclusively turned in the direction of human progress. Moreover, even in this, if the progress is intellectual, he is aware of the danger of arrogance. Only the progress of the individual soul matters in the last analysis. And increasingly men are seen as little, individual islands of Cartesian self-awareness dotted in an ocean of unknowableness.

This is very much the spirit in which Browning conducts his colloquy with Francis Furini, the Renaissance priest cum painter of nudes. But before embarking on this poem, a small point of interest arises in the immediately preceding one, George Bubb Doddington. It is the only occasion on which Browning mentions Darwin by name in his verse - not in connexion with evolution, but with bower-birds.

I

Nay, Darwin tells of such as love the bower -
 His bower-birds opportunely yield us yet

The lacking instance when at loss to get
 A feathered parallel to what we find
 The secret motor of some mighty mind
 That worked such wonders - all for vanity! ...
 Birds born to strut prepare a platform-stage
 With sparkling stones and speckled shells, all sorts
 Of slimy rubbish, odds and ends and orts,
 Whereon to pose and posture and engage
 The priceless female simper.⁷⁹

The information has been collected with a sort of bower-bird eye for colour, and is detailed enough to argue (though not conclusively) that Browning may actually have read Darwin on bower-birds. If so, it was not in The Origin of Species, where they do not figure, but in Selection by Means of Sex, published as a single volume with The Descent of Man in 1871. So it is a fair assumption that, shortly before writing Francis Furini, Browning may well have had in his hands a copy of The Descent of Man, a book far more likely to seem to him to strike at the roots of things than The Origin of Species - not because it states we come from animal stock, but because it seeks to explain even man's moral values and humanity in terms of natural selection and natural law.

To return to Francis Furini, the very arbitrariness with which the poem changes direction, from Browning's defence of the nude in art (a veiled attack, as de Vane points out, on those who had criticised certain nude paintings by Browning's painter son) to Furini's sermon attacking evolutionists, shows the bitterness with which the latter subject (perhaps both subjects) rankled in Browning's mind at this time.

Strictly speaking we may read, for evolutionists, those who would seek to account for existence in purely materialistic terms, of whom it is true certain evolutionists were in the van. With the thesis that man, by one means or another, has evolved, Furini does not necessarily quarrel.

IX

Here's ourself, - Man, known today,
Duly evolved at last, - so far, you say,
The sum and seal of being's progress. Good!
Thus much at least is clearly understood ...⁸⁰

It is the denial of any divine hand on the cue, to set the billiard balls rolling in the first place, and therefore to have a care or any control over their ensuing behaviour, which alarms him. In such an order of things, the only possessor of moral sense is man, the crown of evolution, "the sum and seal of being's progress", and he is powerless either to understand the universe he inhabits, or to rectify the faults he so clearly perceives around him.

IX

Where began
Righteousness, moral sense except in Man?
True, he makes nothing, understands no whit:
Had the initiator-spasm seen fit
Thus doubly to endow him, none the worse
And much the better were the universe.
What does Man see or feel or apprehend
Here, there, and everywhere, but faults to mend,
Omissions to supply, - one wide disease
Of things that are, which Man at once would ease
Had will but power and knowledge? failing both -
Things must take will for deed - Man, nowise loth,
Accepts pre-eminency: mere blind force -
Mere knowledge undirected in its course
By any care for what is made or marred
In either's operation - these award

The crown to? Rather let it deck thy brows,
 Man, whom alone a righteousness endows
 Would cure the wide world's ailing! Who disputes
 Thy claim thereto? Had Spasm more attributes
 Than power and knowledge in its gift, before
 Man came to pass? The higher that we soar,
 The less of moral sense like Man's we find.⁸¹

And though, in some senses, such a man may be the glory of the world, there is more bitterness than Pope ever dreamed of to that aspect of him which is jest, and the riddle includes the whole universe as well as man.

IX

He's at the height this moment - to be hurled
 Next moment to the bottom by rebound
 Of his own peal of laughter. All around
 Ignorance wraps him, - whence and how and why
 Things are ...⁸²

We have already seen how Tennyson, alarmed by the increasing ruthlessness of the universe which science was revealing, by contrast with the universe of law and order and design which it had seemed in the eighteenth century would increasingly be laid bare, fled to Coleridge and an intensely personal basis for his faith. But at least, in Tennyson's case, his faith once recovered, he had been able to some extent to reintegrate what he had learned from science into the more hopeful view of things which faith enabled him to take. In Browning's case it was not so much the heartlessness of the universe which appalled him; this he had always recognised and made allowance for, being armed with both the temperament and the philosophy to cope with it. It was rather the mindlessness, the purposelessness, which science seemed to

be envisaging as the ultimate reality - something which admittedly, when he permitted himself glimpses of it, as in Vastness (1889), was also of concern to Tennyson in these later years of his life. And Browning's answer was quite as personal or subjective as Tennyson's, though much less able subsequently to reaccommodate those same teachings of science (which in Browning's case were of course much less detailed or extensive), being a kind of defiant ignorance - a stance taken up on a tiny rock or pedestal of exclusive, Cartesian self-awareness, as here explained by Furini.

X

I at the bottom, Evolutionists,
 Advise beginning, rather. I profess
 To know just one fact - my self-consciousness, -
 Twixt ignorance and ignorance enisled, -
 Knowledge: before me was my Cause - that's styled
 God: after, in due course succeeds the rest, -
 All that my knowledge comprehends - at best -
 At worst, conceives about in mild despair.
 Light needs much touch on either darkness: where?
 Knowledge so far impinges on the Cause
 Before me, that I know - by certain laws
 Wholly unknown, whate'er I apprehend
 Within, without me, had its rise: thus blend
 I, and all things perceived, in one Effect.⁸³

And from this foothold of firm, subjective knowledge Furini painted his pictures, concentrating on what his five senses informed him of the world around, and abjuring the need to probe for deeper and deeper reasons.

X

Depths on depths to probe
 Of all-inventive artifice, disrobe
 Marvel at hiding under marvel, pluck

Veil after veil from Nature - were the luck
 Ours to surprise the secret men so name,
 That still eludes the searcher - all the same,
 Repays his search with still fresh proof - "Externe,
 Not inmost, is the Cause, fool! Look and learn!"
 Thus teach my hundred pictures: firm and fast
 There did I plant my first foot. And the next?
 Nowhere! 'Twas put forth and withdrawn, perplexed
 At touch of what seemed stable and proved stuff
 Such as the coloured clouds are: plain enough
 There lay the outside universe: try Man -
 My most immediate! and the dip began
 From safe and solid into that profound
 Of ignorance I tell you surges round
 My rock-spit of self-knowledge.⁸⁴

As for the meaning and origin of it all, and the reason why
 evil exists side by side with good, Furini is content to take it on
 trust and to believe, with Browning, that evil is somehow needful
 and that good shall come of it.

X

Well and ill,
 Evil and good irreconcilable
 Above, beneath, about my every side, -
 How did this wild confusion far and wide
 Tally with my experience when my stamp -
 So far from stirring - struck out, each a lamp,
 Spark after spark of truth from where I stood -
 Pedestalled triumph? Evil there was good,
 Want was the promise of supply, defect
 Ensured completion, - where and when and how?
 Leave that to the First Cause! Enough that now,
 Here where I stand, this moment's me and mine,
 Shows me what is, permits me to divine
 What shall be. Wherefore? Nay, how otherwise?
 Look at my pictures!⁸⁵

More than anywhere else in his writings, this problem of
 justifying evil seems here to preoccupy Browning. Back and back

he comes to it, like a dog to a bone. Is there any danger, asks Furini, of God not being able or willing to put all things to rights in the end?

X

What if the Cause, whereof we now descry
 So far the wonder-working, lack at last
 Will, power, benevolence - a protoplast,
 No consummator ...?⁸⁶

And then answers:

X

No, I have no doubt at all!
 There's my amount of knowledge - great or small,
 Sufficient for my needs: for see! advance
 Its light now on that depth of ignorance
 I shrank before from - yonder where the world
 Lies wreck-strewn, - evil towering, prone good - hurled
 From pride of place, on every side. For me
 (Patience, beseech you!) knowledge can but be
 Of good by knowledge of good's opposite -
 Evil - since, to distinguish wrong from right,
 Both must be known in each extreme ...⁸⁷

Again, a line or two later, as anxious now to acquire soul's knowledge as he was earlier to abjure mind's, he continues:

X

I must know
 All to be known at any halting-stage
 Of my soul's progress, such as earth, where wage
 War, just for soul's instruction, pain with joy,
 Folly with wisdom, all that works annoy
 With all that quiets and contents, - in brief,
 Good strives with evil.⁸⁸

Yet, paradoxically, if we allow ourselves to be too comforted by the thought that evil is merely a necessary, temporary foil, and

therefore not true and absolute evil but good in disguise, evil may then lose the power to perform its salutary task.

X

Think!

Could I see plain, be somehow certified
 All was illusion, - evil far and wide
 Was good disguised, - why, out with one huge wipe
 Goes knowledge from me. Type needs anti-type:
 As night needs day, as shine needs shade, so good
 Needs evil: how were pity understood
 Unless by pain? Make evident that pain
 Permissibly masks pleasure - you abstain
 From outstretch of the finger-tip that saves
 A drowning fly.⁸⁹

By now the position is so complicated and confused, with evil needing to seem absolute evil in order to be conducive, as Browning has always maintained it to be, to eventual total good, that Furini retreats once more to his little platform of self, where, subjectively at least, evil seems evil yet can be presumed to be subservient to overall good.

X

Though wrong were right,
 Could we but know - still wrong must needs seem wrong
 To do right's service, prove men weak or strong,
 Choosers of evil or of good. "No such
 Illusion possible!" Ah, friends, you touch
 Just here my solid standing place amid
 The wash and welter, whence all doubts are bid
 Back to the ledge they break against in foam,
 Futility: my soul, and my soul's home
 This body, - how each operates on each,
 And how things outside, fact or feigning, teach
 What good is and what evil, - just the same,
 Be feigning or be fact the teacher, - blame
 Diffidence nowise if, from this I judge
 My point of vantage, not an inch I budge.⁹⁰

Such a retreat from a discussion of the ultimate nature of evil might at first seem at odds with the earlier lines "I must know/All to be known at any halting-stage/Of my soul's progress." Furini would reply, presumably, that first-hand, subjective knowledge or experience of evil, in the sense of suffering and learning from one's sufferings, is valid and valuable in a way that abstract, intellectual theorising about the nature of evil is not. But one cannot suppress the feeling that Browning's whole concept of the utility of evil is the outcome of just such abstract, intellectual theorising, rather than arising out of first-hand, subjective, body-and-soul experience of the kind Furini is here advocating - that it is, in fact, open to many of the same objections so far as Furini is concerned as is materialistic Darwinism.

That Browning has always been adequately aware of evil - or rather, that he has always been intuitively in touch with the dark side of his own and human nature - and therefore that his optimism is neither as facile nor as shallow as it can be made to seem, has already been argued. This much is surely apparent, if not from his almost obsessive need to return again and again to this theory of the positive function of evil, then from the censored glimpses we catch of almost pure evil in nightmares or fairy tales such as Childe Roland to the Dark Tower Came (1855), Porphyria's Lover (1842) or The Flight of the Duchess (1845), and from the almost equally sheer human

wickedness of The Ring and the Book (1868-9) or even Pippa Passes (1841) - unless, as earlier suggested, one counts this last one as a fairy tale. But it seems, from Furini's sermon, to be becoming harder and harder for Browning to contain this awareness of evil within the philosophical framework he constructed to justify his optimism - which must inevitably raise the question as to whether it was not, in truth, the optimism itself which was no longer able to contain such awareness of evil.

In fact, Francis Furini is the last of Browning's poems in which he can truly be said to expound (though at the same time revealing the shortcomings of) his doctrine of the utility of evil. He may maintain his dogged undauntedness to the end, as already seen in the Epilogue to Asolando (1889), but lines such as "Never dreamed, though right were worsted, wrong would triumph,/Held we fall to rise, are baffled to fight better", though capable of lending support to a belief in the need for imperfection, are scarcely an exposition of it. He may even in Rephan, from the same volume, contrast existence on earth with the endless boredom of existence on another planet, created by another God, "where weak and strong,/The wise and the foolish, right and wrong,/Are merged alike in a neutral Best",⁹¹ and conclude that earth is preferable. But wisely, since more effective in its small way for such restraint, the poem contents itself with the fable and does not underline the moral - in other

words does not commit itself to a formulated, refutable theory, but makes its point by implication and by our emotional reaction to the picture of life it paints. Significantly, the more personal, more deeply felt Reverie which follows it and which, instead of borrowing a fully-fledged fable, creates its own, stark, abstract mythology of Power and Good - so abstract, in fact, that the poem virtually remains a simple exposition of Browning's thought - , allows itself the merest hint of a suggestion that evil may have its place in a larger scheme of things, while grappling directly and honestly for most of its few stanzas with the seemingly very real division in the universe between Power and Good - a division which entails that our love and praise, almost at times our loyalties, are also divided.

All is effect of cause:
 As it would, has willed and done
 Power: and my mind's applause
 Goes, passing laws each one,
 To Omnipotence, lord of laws.

Head praises, but heart refrains
 From loving's acknowledgment.
 Whole losses outweigh half-gains:
 Earth's good is with evil blent:
 Good struggles but evil reigns.⁹²

The poem is in many ways a sort of microcosm of all Browning's belief's. The almost grudging applause of a mere lord of laws is reminiscent of Luria (p.238), and the wish for heart to have at least equal place with head, Love with Power, like that we saw in Paracelsus. There now follows the half-suggestion that evil may have

a purpose, though this quickly gives place to scepticism about the alchemy of the mind in propounding any such theory.

Yet since Earth's good proved good -
 Incontrovertibly
 Worth loving - I understood
 How evil - did mind descry
 Power's object to end pursued -

Were haply as cloud across
 Good's orb, no orb itself:
 Mere mind - were it found at loss
 Did it play the tricky elf
 And from life's gold purge the dross?⁹³

The poem continues with a straight, hard look at the respective functions and positions in the universe, of Power and Good, with doubt cast on whether Good has a valid claim to even our love, so ineffectual does it seem.

Power is known infinite:
 Good struggles to be - at best
 Seems - scanned by the human sight,
 Tried by the senses' test -
 Good palpably, but with right

Therefore to mind's award
 Of loving, as power claims praise?
 Power - which finds nought too hard,
 Fulfilling itself all ways
 Unchecked, unchanged: while barred,

Baffled, what good began
 Ends evil on every side.
 To Power submissive man
 Breathes "E'en as Thou art, abide!"
 While to good "Late-found, long-sought,

"Would power to a plenitude
 But liberate, but enlarge
 Good's straight confine, - renewed
 Were ever the heart's discharge
 Of loving!" Else doubts intrude.⁹⁴

Nowhere does the poem, as it proceeds, presume to offer a solution, in intellectual terms, to what is at bottom a feeling that the world is unjust, unfair, somehow basically wrong. Indeed, it specifically recognises that this is a task beyond human powers, and that to try to do so would be at least as presumptuous as mere human attempts, such as are mocked or deplored in Bernard de Mandeville and Francis Furini, to explain and account for the nature and origin of the physical universe. The only appropriate or adequate answer to such feelings of doubt is, of course, an equivalent but contrary feeling - a faith in the eventual rightness of things, and faith, moreover, with a sufficiently personal basis or plinth to satisfy even Furini.

Even as the world its life,
 So have I lived my own -
 Power seen with Love at strife,
 That sure, this dimly shown,
 - Good rare and evil rife.

Whereof the effect be - faith
 That, some far day, were found
 Ripeness in things now rathe,
 Wrong righted, each chain unbound,
 Renewal born out of scathe.⁹⁵

In the end, then we are back where we started from, with the proposition that Browning had the temperament to react with hope and faith to the same experience and knowledge which in Tennyson led to despair. And at the close of Reverie we have just that - a chastened but surviving optimism, shorn of its philosophical trappings,

with no basis other than a will to believe, and to resolve all difficulties in its bold affirming equation, "Power is Love".

Then life is - to wake not sleep,
 Rise and not rest, but press
 From earth's level where blindly creep
 Things perfected, more or less,
 To the heaven's height, far and steep,

Where, amid what strifes and storms
 May wait the adventurous quest,
 Power is Love - transports, transforms
 Who aspired from worst to best,
 Sought the soul's world, spurned the worms'.

I have faith such end shall be:
 From the first, Power was - I knew.
 Life has made clear to me
 That, strive but for closer view,
 Love were as plain to see.⁹⁶

Incidentally, these lines seem also to recognise and seek to resolve - as does Rephan - the inherent contradiction we have previously noted between two recurring Browning doctrines - those of a universe perfect in all its parts, and of an imperfect and therefore aspiring universe.

It would be possible to make too much of this retreat on the part of Browning from a belief in the necessity and utility of imperfection and evil. It is still there, by implication, in Rephan, and almost there in the Epilogue. None the less, Francis Furini's sermon does reveal the contradictions and pitfalls involved in pushing the theory to its limits, and Reverie does seem to warn clearly against the presumption of all attempts to describe or explain ultimate realities in any terms available to or comprehensible by the human

intellect. The responsibility for redeeming the universe and making all right in the end is Power's - is God's - and we can only trust It or Him to do so.

Thou earth that embosomest
 Offspring of land and sea -
 How thy hills first sank to rest,
 How thy vales bred herb and tree
 Which dizen thy mother-breast -

Do I ask? "Be ignorant
 Ever!" the answer clangs:
 Whereas if I plead world's want,
 Soul's sorrows and body's pangs,
 Play the human applicant, -

Is a remedy far to seek? ...

What need to confess again
 No problem this to solve
 By impotence? Power, once plain
 Proved Power, - let on Power devolve
 Good's right to co-equal reign!⁹⁷

It is probable that a combination of many factors in the poet's private life contributed to this loss of nerve and retreat into extreme subjectivity in his later poems - factors such as loneliness, a certain failing of his health, and disappointments connected with his son, who "seems to have had no talent except a capacity for being unabashed by his own failure".⁹⁸ Yet it cannot be doubted that a certain disquiet at the turn taken by the evolutionary beliefs of others was also a potent factor.

Evolution in pre-Darwinian days had been for Browning, as will be remembered, a strongly progressionist process. His own natural

inclination to put an optimistic, forward-looking, progressive gloss on life, and his increasing need to conceive of the universe as in a state of continual transition towards the good, in order to account satisfactorily for the existence of evil, led him to welcome theories of biological progress so long as these seemed still divinely directed and firmly teleological. Moreover, as he never looked such gift-horses very closely in the mouth, and lacked Tennyson's firm grasp of the science which lay behind them, they caused him none of the anxiety we find in In Memoriam. So far as can be ascertained, he had when writing Paracelsus (1835) no very clear idea of, or interest in, possible mechanisms of such biological progress, though in Luria (1846) and Cleon (1855) he seems to have leant, if anything, towards successive creations.

Even after the appearance of The Origin of Species, Browning retained a progressionist conception of evolution, and remained so vague and unconcerned as to precise mechanism that in Prince Hohenstiel-Schwangau (1871) he was able to advance a full-bloodedly catastrophic version of the earth's history, side by side with a modified, teleological variant of either Lamarckian or Darwinian evolution, seemingly without being aware of any inconsistency on his part. Nor was there any real hostility to evolutionary ideas in this poem, or any before it - merely a stronger insistence, in A Death in the Desert (1864) and possibly Rabbi Ben Ezra (1864) on the special and

distinctive nature of man. Not until Parleyings with Certain People of Importance in Their Day (1887), and in particular Francis Furini, do we encounter such hostility - a hostility specifically directed at the militantly materialistic, non-teleological form which, thanks to Tyndall, Huxley and others, evolutionary beliefs were by now unmistakably assuming. It may even have been that Browning read all or part of Darwin's The Descent of Man (1871) while writing the Parleyings, and that its application of the principles of natural selection to the development of man's moral faculties was what occasioned Browning's outburst. At all events, the result was an increasing distrust of all so-called objective knowledge arrived at by the intellect and abstract processes of reasoning, as opposed to direct, first-hand, Cartesianly subjective knowledge. And in subjecting both the materialistic view of the universe and his own philosophy of the utility of evil to equally close scrutiny by Francis Furini, Browning was forced into the position of having tacitly to acknowledge that some of the objections to the former applied with equal force to the latter.

So both Tennyson and Browning, having in their similar yet different ways been evolutionists long before Darwin published The Origin of Species, were in their similar yet different ways perturbed by later developments of evolutionary theory. Both were strong, in the early days, for a teleological version of evolution, which for Browning was probably progressionist, employing successive acts of

creation, and could even have been catastrophic. Tennyson on the other hand had read his Lyell (and a great deal else), was probably a kind of Lamarckian uniformitarian, and as such was much better informed than Browning as to the chances of self-governing, non-teleological mechanisms of nature having carried out evolution unaided. He was also more aware of how harsh had been the evolutionary process, whether self-governing or not.

After 1859 Tennyson was quick to grasp the proposed mechanism of natural selection, disliked its harshness, and retreated from the subject save for a few poems in extreme old age. Browning never did properly understand natural selection, and if he had might even have found its harshness quite in keeping with his own doctrine concerning suffering and evil. What did disturb him, and Tennyson also, though not till the eighteen-seventies and eighties, was the increasing use of evolutionary theory by those giving an exclusively mechanistic, Godless account of the origin and subsequent development of the universe, life, and man.

CHAPTER VII

EVOLUTIONARY OPTIMISM

Tennyson and Browning were both poets who had taken up attitudes towards the possibility of life's having slowly developed (or having slowly been created), and had written poems which referred to such a subject, long before the appearance of Darwin's Origin of Species. Both men were Christians, and each believed in a markedly teleological process of development, with man as its crowning glory. Both, moreover, held strongly to a belief in the unique and surviving value of a man's personality or soul, though finding it increasingly difficult to do so after 1859, with the emergence of purely mechanistic, non-teleological versions of evolutionary theory.

This chapter will be mainly concerned with two poets, Swinburne and Meredith, who wrote almost all their poetry after the appearance of The Origin of Species, were neither of them believers in orthodox Christianity, and who both found it easier, in their different ways, to accept Darwinian ideas of evolution than Tennyson and Browning, had done without in either case being committed and orthodox Darwinians. But as a preliminary it will be of interest to look at two American poets who, like Browning and Tennyson, wrote poems dealing with evolution both before and after 1859, and who managed to come to terms with the idea of evolution more successfully than their English counterparts.

Having said that, one must add that an intervening Atlantic may have delayed, or even mitigated, those implications of Darwinism which made for a materialistic determinism. For both Emerson and Whitman, the poets in question, retained a strongly teleological view of evolution all their lives, without it seems being particularly aware of, or troubled by, the contrary views of an increasing number of scientists and their followers. As F. W. Conner puts it in Cosmic Optimism:

Far from espousing any theory of mechanism, thus, what Whitman was concerned to do - like Emerson, Poe, and nearly all the poets we shall consider - was to pour the old wine of divine purpose into the new bottles of evolutionary "process".¹

Emerson, as Conner shows, was for long torn between opposing views of life's having spread downwards (in some unspecified way) from a transcendental origin, via man, to the lower echelons of creation, and of life's evolving upward toward a reunion (as in the Browning version) with its transcendental origin and target. By 1844, in his second essay on Nature, Emerson had clearly embraced the latter view, and was able to support it with a quite detailed knowledge of the likely course of events. (He had already read Lyell, and was a few months later to read, and welcome, Chambers' Vestiges.)

... let us not longer omit our homage to the Efficient Nature, natura naturans, the quick cause, before which all forms flee as the driven snow, itself secret, its works driven before it in flocks and multitudes ..., and in indescribable variety. It publishes itself in creatures, reaching from particles and spicula, through transformation on transformation to the highest symmetries, arriving at consummate results without a shock or a leap ... All changes pass without violence, by reason of the two cardinal conditions of boundless space and

boundless time. Geology has initiated us into the secularity of nature, and taught us to disuse our dame-school measures and exchange our Mosaic and Ptolemaic systems for her large style. We knew nothing rightly, for want of perspective. Now we learn what patient periods must round themselves before the rock is formed, then before the rock is broken, and the first lichen race has disintegrated the thinnest external plate into soil, and opened the door for the remote Flora, Fauna, Ceres, and Pomona, to come in. How far off yet is the trilobite! how far the quadruped! how inconceivably remote is man! All duly arrive, and then race after race of men. It is a long way from granite to the oyster, farther yet to Plato and the preaching of the immortality of the soul. Yet all must come, as surely as the first atom has two sides.²

Nothing in the essay indicates that Emerson clung to successive creations rather than true development, and the agency of such development is always Nature, Efficient Nature, or natura naturans. Emerson we know retained a belief of sorts in some ultimate source of power and purpose behind and beyond Nature, but that too had been depersonalised to what Emerson termed an Over-Soul.

In the same year (1844) Emerson was engaged in revising and rewriting the second part to his poem Woodnotes, which is as welcoming to the idea of evolution as Paracelsus.

Ever fresh the broad creation,
 A divine improvisation,
 From the heart of God proceeds,
 A single will, a million deeds.
 Once slept the world an egg of stone,
 And pulse, and sound, and light was none:
 And God said, "Throb!" and there was motion,
 And the vast mass became vast ocean.
 Onward and on, the eternal Pan,
 Who layeth the world's incessant plan,
 Halteth never in one shape,
 But for ever doth escape,

Like wave, or flame, into new forms
 Of gem, and air, of plants, and worms.
 I, that to-day am a pine,
 Yesterday was a bundle of grass ...³

The phrase "incessant plan" seems to indicate a modified teleology; plan there is, but even that changes and is evolved. Or perhaps this only applies to the details of the plan, the overall direction and the destination remaining fixed. As to the agency, though God it is who bestows the initial gift and impetus of life, Emerson neatly side-steps the issue when it comes to the subsequent supervision of its progress, attributing this to Pan, who combines suggestions of natural and of divine power.

Interestingly, from the point of view of comparison with Swinburne, there is a kind of transient, quasi-pantheism suggested a few lines later.

This vault which glows immense with light
 Is the inn where he lodges for a night.
 What recks such traveller if the bowers,
 Which bloom and fade like meadow flowers,
 A bunch of fragrant lilies be,
 Or the stars of eternity? ...
 He is the axis of the star;
 He is the sparkle of the spar;
 He is the heart of every creature;
 He is the meaning of each feature;
 And his mind is the sky
 Than all it holds more deep, more high.⁴

The transience ("the inn where he lodges for a night") may be no more than an attempt to suggest once more the restless, changing nature of the universe implicit in the previous quotation, though "lodges" is a

less than wholeheartedly pantheistic word. But the last line of the extract clearly implies transcendence as well as immanence.

Also interesting from the point of view of comparison with Swinburne, and Meredith, is the view of nature expressed in his slightly earlier essay, The Method of Nature (1841).

In short, the spirit and peculiarity of that impression nature makes on us, is this, that it does not exist to any one or to any number of particular ends, but to numberless and endless benefit; that there is in it no private will, no rebel leaf or limb, but the whole is oppressed by one superincumbent tendency, obeys that redundancy or excess of life which in conscious beings we call ecstasy.⁵

Superabundant "excess of life", and a concern, not for the individual, nor even the "type", but only for the whole: this is surely the aspect of nature which so distressed Tennyson - and particularly the implication that nature cared neither for individual human lives nor even for the whole human race. Yet Emerson, like both Swinburne and Meredith, remains relatively undismayed by such a prospect. In Emerson's case we know that he regarded human beings as somewhat different from the rest of creation in this respect, individual human lives having eternal value of a kind, though in an essentially impersonal universe, presided over by an impersonal Over-Soul. But it is just such a kind of impersonal immortality which, in Section XLVII of In Memoriam (p. 298) Tennyson rejects as unsatisfactory.

Emerson continued intermittently to write poems which treat of evolution. There is, for instance, the famous teleologically

Lamarckian couplet prefaced to the 1849 reissue of his first essay on Nature, though existing in manuscript forms from as early as 1845.⁶

And, striving to be man, the worm
Mounts through all the spires of form.⁷

Then there is the long poetic motto to his essay on Wealth, published in 1860 but probably written earlier, in which the technical knowledge already noted in his prose (e.g. the role of lichens in breaking up rock to form soil) is set down in verse, and which insists on the continuing debt of Mind to Matter, Man to Nature.⁸ Most remarkable of all, perhaps, is his Song of Nature,⁹ printed in Atlantic Monthly in 1860, but posted to the editor a month before the appearance in England of The Origin of Species.¹⁰

The poem begins with a general impression of nature's power, proceeding in the third stanza to a statement of that fecundity of nature which is the basis of natural selection, and in the fourth to what need not necessarily be taken as an anticipation of the general theory of natural selection, but reads remarkably like one.

Mine are the night and the morning,
The pits of air, the gulf of space,
The sportive sun, the gibbous moon,
The innumerable days.

I hide in the solar glory,
I am dumb in the pealing song,
I rest on the pitch of the torrent,
In slumber I am strong.

No numbers have counted my tallies,
No tribes my house can fill,
I sit by the shining Fount of life,
And pour the deluge still.

And ever by delicate powers
 Gathering along the centuries
 From race on race the rarest flowers
 My wreath shall nothing miss.

There follows what may be a reference to Laplace's nebular theories of stellar evolution, but is much more likely to be an expression, in anachronistically astrological terms, of a simple belief in progress.

And many a thousand summers
 My gardens ripened well,
 And light from meliorating stars
 With firmer glory fell.

At all events, the time-scale is Lyellian, as are the geological processes outlined in the stanzas which follow. There is also the strange contrast implied in stanzas 8 and 9 between the freakish activities of the gods and the purposive ones of Time and Thought - almost as if the excesses, the irrelevancies, and the aberrations, when viewed from a strictly anthropocentric and teleological viewpoint, of cosmic scale, of beauty, and of evolutionary blind-alleys, are being blamed on "the gods", while "Time and Thought" take credit for all that was necessary.

I wrote the past in characters
 Of rock and fire the scroll,
 The building in the coral sea,
 The planting of the coal.

And thefts from satellites and rings
 And broken stars I drew,
 And out of spent and aged things
 I formed the world anew;

What time the gods kept carnival,
 Tricked out in star and flower,
 And in cramp elf and saurian forms
 They swathed their too much power.

Time and thought were my surveyors,
 They laid their courses well,
 They boiled the sea, and piled the layers
 Of granite, marl and shell.

At this point in the poem the teleological element enters; there is awareness that the whole process has been leading up to man. But it is also made clear that ultimate control is not in the hands of Nature, which grows impatient for that which is foretold but does not appear.

But he, the man-child glorious, -
 Where tarries he the while?
 The rainbow shines his harbinger,
 The sunset gleams his smile.

My boreal lights leap upward,
 Forthright my planets roll,
 And still the man-child is not born,
 The summit of the whole.

Must time and tide for ever run?
 Will never my winds go sleep in the west?
 Will never my wheels which whirl the sun
 And satellites have rest?

Too much of donning and doffing,
 Too slow the rainbow fades,
 I weary of my robe of snow,
 My leaves and my cascades;

I tire of globes and races,
 Too long the game is played;
 What without him is summer's pomp,
 Or winter's frozen shade?

What is being described seems unmistakably to be the earth immediately

prior to the evolutionary appearance of man, with couriers in the form of geological and biological "prophecies". Yet suddenly, and most unsatisfactorily, it becomes apparent that man has already put in an appearance, and that what is awaited is perfect man, the "man-child glorious".

Twice have I moulded an image,
And thrice outstretched my hand,
Made one of day and one of night
And one of the salt sea-sand.

One in a Judean manger,
And one by Avon stream,
One over against the mouths of Nile,
And one in the Academe.

I moulded kings and saviours,
And bards o'er kings to rule; -
But fell the starry influence short,
The cup was never full.

Yet whirl the glowing wheels once more,
And mix the bowl again;
Seethe, Fate! the ancient elements,
Heat, cold, wet, dry, and peace, and pain.

Let war, and trade, and creeds, and song,
Blend, ripen race on race,
The sunburnt world a man shall breed
Of all the zones and countless days.

No ray is dimmed, no atom worn,
My oldest force is good as new,
And the fresh rose on yonder thorn
Gives back the bending heavens in dew.

What is missing, then; what is still needed before perfect man can put in his appearance? Not even the phrase "starry influence" can be taken to imply any added intervention, on the part of the Over-Soul, for the "meliorating stars" have been at work since stanza five.

It is the "sunburnt world" itself which "shall breed" such a man, using merely all its zones and "countless days". The last stanza clearly implies that the resources already available are sufficient to achieve the goal, and achieve it through the usual channels, given time.

Emerson, then, believes in a form of evolution, which, while more or less teleological, is impersonally administered, quite indifferent to the fate of the individual in its modus operandi, and Lyellian or uniformitarian in spirit. He is also quite well read in the scientific literature of evolutionary thought. When we turn from him to Whitman we shall not expect to find such meticulous and scholarly summaries of the available evidence and data as are present in a poem like Wealth, but rather an ethos, a general sympathy with some aspects at least of the whole idea of evolution. Indeed, in Thou Mother with Thy Equal Brood (1872) Whitman uses the word as one of those large, emotive labels, like Democracy, of which he is so fond.

(Lo, where arise three peerless stars, 101
 To be thy natal stars my country, Ensemble, Evolution,
 Freedom,
 Set in the sky of Law.)¹¹

And in L. of G.'s Purport (1891) he uses it explicitly to describe the overall theme of his life's work.

Haughty this song, its words and scope,
 To span vast realms of space and time,
 Evolution - the cumulative - growths and generations ...¹² 5

However, the subject and substance of evolution, if not the actual

word, are to be found much earlier in Whitman's work, and most notably in that most Whitmanesque of all his poems, Song of Myself (1855). If the poem is about any single theme it is about Whitman the poet being at one with his fellows and with all creation.

27

Mine is no callous shell,
 I have instant conductors all over me whether I pass
 or stop, 615
 They seize every object and lead it harmlessly through
 me.¹³

This is particularly marked in Section 15, for instance, where a long catalogue of typical inhabitants of North America concludes with the lines:

And these tend inward to me, and I tend outward to them,
 And such as it is to be of these more or less I am,
 And of these one and all I weave the song of myself.¹⁴

Similarly, of himself and the inanimate universe, he writes:

22

Sea of stretch'd ground-swells,
 Sea breathing broad and convulsive breaths, 455
 Sea of the brine of life and of unshovell'd yet always-
 ready graves,
 Howler and scooper of storms, capricious and dainty sea,
 I am integral with you, I too am of one phase and of
 all phases.¹⁵

And animals, too, he could not only "turn and live with", but feels a kinship with.

... they show their relations to me and I accept them,
 They bring me tokens of myself, they evince them plainly
 in their possession.

I wonder where they get those tokens,
 Did I pass that way huge times ago and negligently drop
 them?¹⁶

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Naturally, if this feeling of oneness with nature is Whitman's theme, evolution will provide him with the perfect example and explanation - a better one than man's having negligently left some of his traits lying around for animals to pick up.

31

I find I incorporate gneiss, coal, long-threaded moss,
 fruits, grains, esculent roots,
 And am stucco'd with quadrupeds and birds all over,
 And have distanced what is behind me for good reasons,
 But call any thing back again when I desire it.

670

In vain the speeding or shyness,
 In vain the plutonic rocks send their heat against my
 approach,
 In vain the mastodon retreats beneath its own powder'd
 bones,
 In vain objects stand leagues off and assume manifold
 shapes,
 In vain the ocean settling in hollows and great monsters
 lying low,
 In vain the buzzard houses herself with the sky,
 In vain the snake slides through the creepers and logs, 680
 In vain the elk takes to the inner passes of the woods,
 In vain the razor-bill'd auk sails far north to Labrador,
 I follow quickly, I ascend to the nest in the fissure of
 the cliff.¹⁷

The same use is made of evolution in a later passage, but with the added feeling that all things hitherto have been a preparation for things yet to come. Man's kinship with all creation is part of a vast teleological purpose, which is not yet accomplished.

I am an acme of things accomplished, and I am encloser of
 things to be.
 My feet strike an apex of the apices of the stairs,

On every step bunches of ages, and larger bunches between
 the steps, 1150
 All below duly travel'd, and still I mount and mount.

Rise after rise bow the phantoms behind me,
 Afar down I see the huge first Nothing, I know I was even
 there,
 I waited unseen and always, and slept through the lethargic
 mist,
 And took my time, and took no hurt from the fetid carbon.

Long I was hugg'd close - long and long.

Immense have been the preparations for me,
 Faithful and friendly the arms that have help'd me.

Cycles ferried my cradle, rowing and rowing like cheerful
 boatman,
 For room to me stars kept aside in their own rings, 1160
 They sent influences to look after what was to hold me.

Before I was born out of my mother generations guided me,
 My embryo has never been torpid, nothing could overlay it.

For it the nebula cohered to an orb,
 The long slow strata piled to rest it on,
 Vast vegetables gave it sustenance,
 Monstrous sauroids transported it in their mouths and
 deposited it with care.

All forces have been steadily employ'd to complete and
 delight me,
 Now on this spot I stand with my robust soul.¹⁸

There are other references to evolution, and other passages in sympathy with evolution, in Whitman's subsequent poems, though none more explicit than those already quoted, and none showing any appreciable departure, even after the appearance of The Origin of Species, from this faith in a teleologically progressive universe. There are other aspects to Whitman's beliefs, also, which in a full

study of his evolutionary ideas would need to be examined more fully. There is, for instance, his discipleship of Hegel, very apparent in a poem like Song of the Universal (1874). And there is his willingness to accept apparent evil as a necessary part of the totality of things, as in these lines from Starting from Paumanok (1860).

I make the poem of evil also, I commemorate that part
also,
I am myself just as much evil as good, and my nation
is - and I say there is in fact no evil 100
(Or if there is I say it is just as important to you, to
the land or to me as anything else.)¹⁹

The best known instances of this willingness on Whitman's part to accept and even welcome the customarily unwelcome are those poems where he hymns the beauties of death - notably Out of the Cradle Endlessly Rocking (1859) and When Lilacs Last in the Dooryard Bloomed (1865-6).

Perhaps most characteristic and interesting of these beliefs or attitudes of Whitman which are associated in some way with his belief in evolution is his refusal to grant precedence or pride of place to either body or soul - even, at times, to admit a distinction between them. In Song of Myself he writes:

48

I have said that the soul is not more than the body,
And I have said that the body is not more than the
soul.²⁰

1278

And in I Sing the Body Electric (1855) he goes even further, in the lines which conclude his poetic catalogue of the body in Section 9.

O I say these are not the parts and poems of the body
 only, but of the soul,
 O I say now these are the soul!²¹

This examination of evolutionary ideas in the work of Emerson and Whitman has been undertaken not only for its intrinsic interest but as being of some assistance in understanding the difference between evolution in the poems of Tennyson and Browning (particularly the later Browning) on the one hand, and evolution in the poetry of Swinburne and Meredith on the other. Whitman and Emerson occupy what might be termed a mid-way position.

Swinburne (1837-1909), in his early volumes such as Atalanta in Calydon (1865) or the First Series of Poems and Ballads (1866), was not concerned with the subject of evolution. Not until Songs Before Sunrise (1871), written as a result of a group of his friends having conspired to rescue Algernon from his luxuriating self by introducing him to Mazzini and thereby presenting him with Italian liberty as a new subject for his verse, do evolutionary ideas appear in his poems. They offer natural, if a times inconsequential, support to Swinburne's swingeing anti-clericism; the way he associates them with his passionate attachment to Freedom is much more arbitrary, however.

By the late 1860's, when Swinburne was writing most of the Songs Before Sunrise, there had been time for him to absorb much of the spirit of Darwinism merely by living in England and talking and listening to

others who were living there with him. Born in 1837, he was 28 years younger than Tennyson, 25 years younger than Browning, and only 22 in the year The Origin of Species was published. Therefore, presumably, he was much more receptive to new ideas during the years of bitterest controversy over evolution. Moreover, that which alarmed Tennyson and Browning most about Darwinism - its threat to religion - served actually to endear it to Swinburne.

One result of all this is that the whole subject is much less obtrusive in Swinburne's writings than in either Tennyson's or Browning's. Nowhere, in his published letters or his poems, does Swinburne mention Darwin (or Wallace, or Huxley, or Tyndall, etc.) by name, overtly discuss evolution as a special subject, debate its truth or falsehood. Where evolution does figure in his poems, it is as a fully absorbed and integrated element in Swinburne's whole way of thinking about and reacting to the universe. In this respect he goes even further than Emerson and Whitman, accepting evolution as they accepted it, but needing to make less of a special feature of his acceptance.

Some indication of how unremarkable a part of the texture of Swinburne's thought evolution had become by 1888 is provided by a short comment he wrote on the Shakespeare-Bacon controversy. As well as showing that the Novum Organum was almost certainly written by Robert Greene, the New Atlantis by Tom Nashe, and Bacon's Essays by Lord Coke, he demonstrates how likely it is that much if not all of

Wordsworth (in particular the Ode to Duty) and Tennyson were written by the Duke of Wellington and Charles Darwin respectively.

The question whether Shakespeare or Bacon was the author of Hamlet is now, I trust, not more decisively settled than the question whether Maud was written by its nominal author or by the author of The Origin of Species.²²

It is just possible, though Swinburne nowhere acknowledges the fact, that Emerson and Whitman actually influenced Swinburne in his use of evolution as a strand in his own poetry. For we know that he was familiar with the work of both. Twice in letters to Stedman in 1875 he admits, though without great enthusiasm, to having read something of Emerson,²³ and in August of the same year he writes to Raphael Perié:

Les oeuvres d'Emerson me sont tres peu connues, et, je dois vous l'avouer, assez peu symathetiques; je ne sais seulement pas ce qu'en comprend l'édition de Bohn.²⁴

The Bohn edition he so disparagingly refers to, however, contains Emerson's two essays on Nature and the one on The Method of Nature, together with both parts of the poem Woodnotes.

His references to Whitman, in the same letters to Stedman, are a good deal more enthusiastic, and there is also the eloquent testimony of his poem To Walt Whitman in America in Songs Before Sunrise. It is worth noting at this point, perhaps, that Meredith too wrote a poem to Walt Whitman (An Orson of the Muse - 1883), true son of Earth and Nature, though there is less reason and probably less need in Meredith's case to assume that Whitman influenced his attitude to evolution.

Of all the poems in Songs Before Sunrise, that which most fully expresses Swinburne's evolutionary creed is Hertha. It is a poem, moreover, which Swinburne was more than happy to let stand as representative of both his poetry and his philosophy.

Of all I have done I rate Hertha highest as a single piece, finding in it the most of lyric force and music combined with the most of condensed and clarified thought.²⁵

However, though a detailed examination of Hertha will provide the main structure for the ensuing study of Swinburne's evolutionary beliefs, reference will be made at appropriate points to other poems of Swinburne's containing similar thoughts.

The title of the poem is the name of an old Germanic Earth Goddess or Goddess of Fertility. The poem takes the form of an impassioned soliloquy by Hertha, and in the first three stanzas Swinburne attempts to establish what he means by Hertha.

I.

I am that which began;
 Out of me the years roll;
 Out of me God and man;
 I am equal and whole;
 God changes, and man, and the form of them bodily; I am
 the soul.

II

Before ever land was,
 Before ever the sea,
 Or soft hair of the grass,
 Or fair limbs of the tree,
 Or the flesh-coloured fruit of my branches, I was, and thy
 soul was in me.

III

First life on my sources
 First drifted and swam;
 Out of me are the forces
 That save it or damn;
 Out of me man and woman, and wild-beast and bird; before
 God was, I am.²⁶

Tillyard, in his study of Hertha in Five Poems,²⁷ reads the fourth line of the first stanza as referring to the conservation of energy and the indestructibility of matter in classical physics. There seems no reason to assume that Swinburne intended the line to have as precise connotations as this; it could be referring to a rather vague totality which is equal and whole and undifferentiated, and therefore unchanging, as opposed to its partial, differentiated and changing manifestations in the shape of men and their changing concepts of God in the next line. We do not even know whether Swinburne knew the first law of thermodynamics or was aware that matter could not be destroyed. However, the reminder is a useful one that a poem which, in 1871, proposed regarding both man and God as the products of an impersonal (even though here personified) "earth-force", must be read as proclaiming itself in broad agreement, not to say taking sides, with such scientific opinion as was confident that the universe could eventually be described and explained in exclusively materialistic terms. And while some might believe in the conservation of energy and the indestructibility of matter without being materialists, none at that time were materialists without believing that the matter and

energy which, to the exclusion of all else, composed their universe were both conserved and indestructible. So it is entirely fitting that we should think of Hertha in terms exclusively of matter and energy and the laws of thermodynamics, whether this is precisely what Swinburne intended or not. This is particularly so in view of the next line, which, unless the word "soul" is restricted very firmly to a metaphoric meaning, has an inappropriately idealistic or Platonic ring to it.

Stanza three, which clearly refers to the early, watery stages in the evolution of life, may be implying, in its third and fourth lines, the non-teleological, mechanistic, chance determinism of Darwinism, and certainly goes on to insist, in the timeless "I am" of the pentateuch itself, on the primacy of purely natural forces.

There is the same insistence on Earth as the forerunner of all else in Hymn of Man (1871), where Earth is described as "Child yet no child of night, and motherless mother of men", as also in Genesis (1871).

Yea, before any world had any light,
 Or anything called God or man drew breath,
 Slowly the strong sides of the heaving night
 Moved, and brought forth the strength of life and death. ²⁸

The next five stanzas of Hertha are an attempt to express a more than usually thoroughgoing version of pantheism. Most expressions of pantheism carry with them the sense of a God, an Over-Soul, a Spirit, of whom creation is a part and who is part of creation, yet who

preceded creation and who could exist, though in an imperfectly realised state, apart from creation. Such a feeling is there, for instance, in the line from Hymn of Man: "A God with the world inwound whose clay to his footsole clings." This Swinburne attempts to avoid in Hertha, by blurring all distinction between "the deed and the doer, the seed and the sower," "the search, and the sought, and the seeker". He succeeds, but then so he should. How could an impersonal, wholly material Mother Nature be other than immanent in all her works? To insist on this at any length is to insist on a tautology.

IV

Beside or above me
 Nought is there to go;
 Love or unlove me,
 Unknow me or know,
 I am that which unloves me and loves; I am stricken, and
 I am the blow.

V

I the mark that is missed
 And the arrows that miss,
 I the mouth that is kissed
 And the breath in the kiss,
 The search, and the sought, and the seeker, the soul and
 the body that is.

VI

I am that thing which blesses
 My spirit elate;
 That which caresses
 With hands uncreate
 My limbs unbegotten that measure the length of the measure
 of fate.

VII

But what thing dost thou now,
 Looking Godward, to cry
 "I am I, thou art thou,
 I am low, thou art high"?
 I am thou, whom thou seekest to find him; find thou but
 thyself, thou art I.

VIII

I the grain and the furrow,
 The plough-cloven clod
 And the ploughshare drawn thorough,
 The germ and the sod,
 The deed and the doer, the seed and the sower, the dust
 which is God.

Stanza VII, where the God man seeks turns out to be himself, is echoed more than once elsewhere in Swinburne. In On the Downs (1871) mother earth whispers to man: "There is no God, O son/If thou be none". And in Hymn of Man there is not only its famous last line, "Glory to Man in the highest! for Man is the master of things", but slightly less hysterically:

But God, if a God there be, is the substance of men which
 is man.
 Our lives are as pulses or pores of his manifold body and
 breath;
 As waves of his sea on the shores where birth is the beacon
 of death.
 We men, the multiform features of man, whatsoever we be,
 Recreate him of whom we are creatures, and all we only are
 he.
 Not each man of all men is God, but God is the fruit of the
 whole;
 Indivisible spirit and blood, indiscernible body from soul.
 Not men's but man's is the glory of godhead ...²⁹

Something which is more apparent in the lines just quoted from Hymn of Man than in any from Hertha, though implicit in much of the latter poem, is the swamping of individual men in collective man. This is

a sad irony which links Swinburne the ardent revolutionary and lover of freedom with many another ardent revolutionary and lover of freedom. These lines from Swinburne's The Pilgrims (1871), for instance, sound very noble, but the spirit behind them has been used to justify the most horrifying curtailments of freedom.

-Enough of light is this for one life's span,
That all men born are mortal, but not man:
And we men bring death lives by night to sow
That man may reap and eat and live by day.³⁰

Such indifference to the fate of the individual amid the prosperity of the species is, to put it no higher, consistent with a belief in Darwinism.

To revert to stanzas IV to VIII of Hertha, there is perhaps a preparatory suggestion, in all the reciprocal paradoxes of their pantheism, that Hertha and that creation are made up of a union of opposites - something to which Swinburne returns later.

Stanzas IX to XIII are largely concerned to enshroud the origins of man in mystery.

IX

Hast thou known how I fashioned thee,
Child, underground?
Fire that imprisoned thee,
Iron that bound,
Dim changes of water, what thing of all these hast thou
known of or found?

X

Canst thou say in thine heart
Thou hast seen with thine eyes
With what cunning of art
Thou wast wrought in what wise,
By what force of what stuff thou wast shapen, and shown on

my breast to the skies?

XI

Who hath given, who hath sold it thee,
 Knowledge of me?
 Hath the wilderness told it thee?
 Hast thou learnt of the sea?
 Hast thou communed in spirit with night? have the winds
 taken counsel with thee?

XII

Have I set such a star
 To show light on thy brow
 That thou sawest from afar
 What I show to thee now?
 Have ye spoken as bretheren together, the sun and the
 mountains and thou?

XIII

What is here, dost thou know it?
 What was, hast thou known?
 Prophet nor poet
 Nor tripod nor throne
 Nor spirit nor flesh can make answer, but only thy mother
 alone.

Such lines have something in common with the following from Hymn
 of Man.

Before the growth was the grower, and the seed ere the
 plant was sown;
 But what was seed of the sower? and the grain of him,
 whence was it grown?
 Foot after foot ye go back and travail and make yourselves
 mad ...31

But in the latter Swinburne is concerned to show the impossibility of
 arriving at ultimate answers and the futility of inventing Gods as
 an attempt to do so; whereas in the former he seems to want to invest
 Hertha, by using a style which echoes both Blake and the Book of Psalms,

with some of the mystery, the glamour, the status even, of the supernatural. Moreover, whether intentionally or not, the strongly rhetorical tone to his personification of Hertha in these stanzas gives her utterances an authoritarian, almost teleological quality which Swinburne is elsewhere careful to eschew. The suggestion in stanza IX, of geological and evolutionary processes is slight by comparison.

Stanza XIV begins with the answer, as it were, to the rhetorical questions of the preceding stanzas: "Mother, not maker, / Born, and not made". There follows, in stanzas XIV to XIX, a contrast between the allegiance demanded by Hertha and that owed to the Gods of man's various religions, and an assurance that though the reflected moonlight of such false religions may have been necessary at one stage if men were to find their way, it is now time for the true sun of truth to rise, and for men to see things as they are, by its light alone. Stanza XIV seems at odds with stanza XIX, the former implying that man in his foolishness and fear fashioned such Gods, and the latter that Hertha did so as a necessary if temporary expedient. Stanza XIX renews, therefore, the implication already noted that Hertha's actions are purposeful and end-directed, which is at odds with the spirit, for instance, of stanzas I to VIII.

XIV

Mother, not maker,
 Born, and not made;
 Though her children forsake her,
 Allured or afraid,

Praying prayers to the God of their fashion, she stirs
not for all that have prayed.

XV

A creed is a rod,
And a crown is of night;
But this thing is God,
To be man with thy might,
To grow straight in the strength of thy spirit, and
live out thy life as the light.

XVI

I am in thee to save thee,
As my soul in thee saith;
Give thou as I gave thee,
Thy life-blood and breath,
Green leaves of thy labour, white flowers of thy thought,
and red fruit of thy death.

XVII

Be the ways of thy giving
As mine were to thee;
The free life of thy living,
Be the gift of it free;
Not as servant to lord, nor as master to slave, shalt thou
give thee to me.

XVIII

O children of banishment,
Souls overcast,
Were the lights ye see vanish meant
Always to last,
Ye would know not the sun overshadowing the shadows and
stars overpast.

XIX

I that saw where ye trod
The dim paths of the night
Set the shadow called God
In your skies to give light;
But the morning of manhood is risen, and the shadowless
soul is in sight.

There is no suggestion here that the service of Hertha will be any easier than that owed to any of the more conventional religions; almost the contrary. But the spirit in which such service will be given, as from one equal to another, will be entirely different. This is certainly the most stirring, idealistic, "noble" section of the poem, with its call to man to throw off the yoke of earlier beliefs and enter the free, ennobling and exacting service of Hertha. So it comes as no surprise to realise that the green, white and red of stanza XVI are the colours of the revolutionary cause in Italy, an association of ideas which is continued in the double use of the word "free" in the following stanza.

And yet what real connection is there between on the one hand a teutonic Earth Goddess, used as a poetic symbol for the purely natural world and the natural forces at work in such a world (natural forces which, admittedly, seem to have led to certain progressive improvements in life), and on the other the ideal of human liberty which was inspiring Mazzini and his fellow Italians? Connection there clearly was in the minds of Swinburne and some at least of his readers. Harold Nicolson, reading the poem in its context of Songs Before Sunrise, speaks of Hertha simply as "the Goddess of Liberty",³² and Edmund Gosse takes virtually the same view.³³ What is more, this is not an isolated instance in Swinburne; in the closing stanzas of To Walt Whitman in America (1871), even more insistently does he identify Freedom with the "spirit of earth", the "earth-god" and

the "earth-soul" - even, for good measure, with the "great god Man"!

God is buried and dead to us,
 Even the spirit of earth,
 Freedom ...,

The earth-god Freedom ...,
 The great god Man, which is God.

But in weariest of years and obscurest
 Doth it live not at heart of all things ...?

Freedom we call it, for holier
 Name of the soul's there is none;
 Surelier it labours, if slower,
 Than the meters of star or of sun;
 Slowlier than life into breath
 Surelier than time into death,
 It moves till its labour be done ...

It is one with the world's generations,
 With the spirit, the star, and the sod;
 With the kingless and king-stricken nations,
 With the cross, and the chain, and the rod;
 The most high, the most secret, most lonely,
 The earth-soul Freedom, that only
 Lives, and that only is God.³⁴

We are a far cry from Shelley, who, despite his interest in things scientific, made no attempt to enlist any natural process or tendency as an ally of human progress - who regarded human progress and human liberty as the fruits of human effort and strife. We are even further from Tennyson and Browning, who were so concerned lest man should lose his spiritual freedom in a wholly mechanistic universe, for Swinburne coolly personifies just such a universe, disinfected of any supernatural element, and equates it with a Romantic idealisation of the spirit of freedom.

Stanzas XX to XXIV are the first ones to develop or exploit in any way the mythological element suggested by the poem's title. The "life-tree", say J.B. Beach³⁵ and Tillyard,³⁶ is probably also Teutonic, or rather Nordic (though the idea of a tree of life is surely so universally archetypal that Swinburne could have taken it from a dozen sources or no source in particular) - the ash tree Yggdrasil, at whose roots gnaws a dragon, on whose topmost branch perches an eagle, and up and down whose trunk, sowing discord between dragon and bird, runs a squirrel.

XX

The tree many-rooted
 That swells to the sky
 With frondage red-fruited,
 The life-tree am I;
 In the buds of your lives is the sap of my leaves:
 ye shall live and not die.

XXI

But the gods of your fashion
 That take and that give,
 In their pity and passion
 That scourge and forgive,
 They are worms that are bred in the bark that falls off;
 they shall die and not live.

XXII

My own blood is what staunches
 The wounds in my bark;
 Stars caught in my branches
 Make day of the dark,
 And are worshipped as suns till the sunrise shall tread
 out their fires as a spark.

XXIII

Where dead ages hide under
 The live roots of the tree,
 In my darkness the thunder
 Makes utterance of me;
 In the clash of my boughs with each other ye hear the
 waves sound of the sea.

XXIV

That noise is of Time,
 As his feathers are spread
 And his feet set to climb
 Through the boughs overhead,
 And my foliage rings round him and rustles, and branches
 are bent with his tread.

If these stanzas are in fact Nordic in origin, then the myth they embody is transformed by Swinburne's treatment of it, becoming much less a myth or allegory, much more an evocative image or symbol. The dragon (pace Tillyard) and the squirrel have disappeared, the eagle has become a vague bird of Time; what emerges most strongly is the natural vigour and fecundity of the tree - the life-force within it, the sap which feeds on decay of the past in order to bring to being the buds, leaves and fruit of the future, and to heal those wounds in its bark which the parasitic religions of man have caused. It is, in fact, a very nineteenth-century tree of life.

There is a certain confusion of imagery, since stanza XXII, with its "Stars caught in my branches" which "Make day of the dark" and which "are worshipped as suns till the sunrise shall tread out their fires as a spark", must inevitably call to mind stanza XIX and

the "shadow called God", the moon. Even false lights serve their purpose, before the sunrise. But in the immediately preceding stanza XXI, the "Gods" of our "fashion" are mere "worms that are bred in the bark that falls off". This ambivalence, already noted, towards the gods of man's various religions, merely reflects, one must presume, the difference between Swinburne taking a long-term, philosophic view of the nature of religion, and Swinburne reacting emotionally to the red rags of passing papal pronouncements.

The idea of death as a renewer, in stanza XXIII, is one treated elsewhere in Swinburne - notably in Genesis.

For if death were not, then growth should not be,
Change, nor the life of good nor evil things;
Nor were there night at all nor light to see,
Nor water of sweet nor water of bitter springs.³⁷

And in The Pilgrims the same fruitfulness is ascribed to specifically human death.

... and no man's heart shall beat
But somewhat in it of our blood once shed
Shall quiver and quicken, as now in us the dead
Blood of men slain, and the old same life's desire
Plants in their fiery footsteps our fresh feet.³⁸

The quotation above from Genesis implies the need for death, and half-implies the need for evil as well as good, if there is to be growth and progress. And the stanzas which follow, from Hertha, are concerned with the way Yggdrasil/Hertha must contain and comprise all things, great and small, good and evil, in order to be and grow.

XXV

The storm-winds of ages
 Blow through me and cease,
 The war-wind that rages,
 The spring-wind of peace,
 Ere the breath of them roughen my tresses, ere one of my
 blossoms increase.

XXVI

All sounds of all changes,
 All shadows and lights
 On the world's mountain-ranges
 And the stream-riven heights,
 Whose tongue is the wind's tongue and language of storm-
 clouds on earth-shaking nights;

XXVII

All forms of all faces,
 All works of all hands
 In unsearchable places
 Of time-stricken lands,
 All death and all life, and all reigns and all ruins, drop
 through me as sands.

XXVIII

Though sore be my burden
 And more than ye know,
 And my growth have no guerdon
 But only to grow,
 Yet I fail not of growing for lightnings above me or
 death-worms below.

XXIX

These too have their part in me,
 As I too in these;
 Such fire is at heart in me,
 Such sap is this tree's,
 Which hath in it all sounds and all secrets of infinite
 lands and of seas.

Stanza XXV seems to imply that the winter storm-or-war-winds, as well as the spring-wind of peace, are necessary before the leaves can appear and the blossoms increase. And stanzas XXVIII and XXIX clearly state that lightnings and worms, suffering and setback, not merely fail to prevent growth, but are necessary for it to take place, being an integral part of the totality which is Yggdrasil/Hertha.

Similarly, in Genesis, the universe is seen as a blend of often warring opposites - and particularly is this true of living things and of man.

Then between shadow and substance, night and light,
 Then between birth and death, and deeds and days,
 The illimitable embrace and the amorous fight
 That of itself begets, bears, rears, and slays,

The immortal war of mortal things, that is
 Labour and life and growth and good and ill,
 The mild antiphonies that melt and kiss,
 The violent symphonies that meet and kill,

All nature of all things began to be.
 But chiefliest in the spirit (beast or man,
 Planet of heaven or blossom of earth or sea)
 The divine contraries of life began.³⁹

And To Walt Whitman in America, Swinburne writes of his "earth-god Freedom":

Within love, within hatred it is,
 And its seed in the stripe and the kiss,
 And in slaves is the germ, and in kings.⁴⁰

Such insistence on the antitheses of plenitude may remind us less of evolution than of the sadistic/masochistic poles to Swinburne's own personality, and of such typically Swinburnian lines as:

If you were queen of pleasure,
 And I were king of pain,
 We'd hunt down love together,
 Pluck out his flying-feather,
 And teach his feet a measure,
 And find his mouth a rein;
 If you were queen of pleasure,
 And I were king of pain.⁴¹

or:

We have drained his (love's)lips at leisure,
 Till there's not left to drain
 A single sob of pleasure,
 A single pulse of pain.⁴²

Nevertheless, this whole group of stanzas from Hertha is more insistent than any other part of the poem that growth and progress have taken place in the past, and are likely to take place in the future, such progress being virtually dependent on the co-existence of good and evil. The more ruthless aspects of natural selection clearly hold few of the horrors for Swinburne that they did for Tennyson.

Stanzas XXVI and XXVII may almost be read, in fact, as a precis of the stormy sequence of geological and historical progress, and stanza XXVIII insists that the function - the sole function - of Yggdrasil is to grow in despite of all that would check that growth. The line "And my growth hath no guerdon" is the nearest thing to an overt admission on Swinburne's part that his whole scheme of existence, being self-contained, must be self-sufficient and self-justifying, creating (if it should find it has need of one) its own set of values.

The next two stanzas are almost an interlude - a nostalgic remembering on Hertha's part of the golden age of Athenian civilization. As with Rousseau and other believers in progress, Swinburne was quite capable at the same time of looking back to some earlier and supposedly idyllic period as a kind of touchstone.

XXX

In the spring-coloured hours
 When my mind was a May's,
 There brake forth of me flowers
 By centuries of days,
 Strong blossoms with perfume of manhood, shot out from
 my spirit as rays.

XXXI

And the sound of them springing
 And the smell of their shoots
 Were as warmth and sweet singing
 And strength to my roots;
 And the lives of my children made perfect with freedom
 of soul were my fruits.

The key phrase here is "freedom of soul"; it is this which gives ancient Athens its glory, so far as Swinburne is concerned, by contrast with the intervening Christian epoch. And the stanzas which follow are a contemptuous, pitying, glad account of the twilight of God and the consequent freeing of man, culminating in that unkindest cut of all, forgiveness!

XXXII

I bid you but be;
 I have need not of prayer;
 I have need of you free
 As your mouths of mine air;
 That my heart may be greater within me, beholding the
 fruits of me fair.

XXXIII

More fair than strange fruit is
 Of faiths ye espouse;
 In me only the root is
 That blooms in your boughs;
 Behold now your God that ye made you, to feed him with
 faith of your vows.

XXXIV

In the darkening and whitening
 Abysses adored,
 With dayspring and lightning
 For lamp and for sword,
 God thunders in heaven, and his angels are red with the
 wrath of the Lord.

XXXV

O my sons, O too dutiful
 Toward Gods not of me,
 Was not I enough beautiful?
 Was it hard to be free?
 For behold, I am with you, am in you and of you; look
 forth now and see.

XXXVI

Lo, winged with world's wonders,
 With myracles shod,
 With the fires of his thunders
 For raiment and rod,
 God trembles in heaven, and his angels are white with
 the terror of God.

XXXVII

For his twilight is come on him,
 His anguish is here;
 And his spirits gaze dumb on him,
 Grown grey from his fear;
 And his hour taketh hold on him stricken, the last of
 his infinite year.

XXXVIII

Thought made him and breaks him,
 Truth slays and forgives;
 But to you, as time takes him,
 This new thing it gives,
 Even love, the beloved Republic, that feeds upon freedom
 and lives.

It is in these stanzas that the fundamental materialism of the poem, referred to at the outset of our examination of it, and implicit again in stanza XXVIII, becomes most difficult to maintain. For though the new materialism may be a very useful stick with which to beat the old religious bondage, there is nothing in materialism per se which necessitates, still less enshrines, either Freedom or Love, those two value concepts which in stanza XXXVIII Swinburne introduces to take over where religion leaves off.

This is reflected in an interesting change of imagery in the penultimate stanza of the poem as compared with the first. The last two stanzas of the poem, in fact, continue the imagery of stanzas XXX, XXXI, XXXII and XXXIII, in all of which man is referred to as being, or bearing, the blossoms and fruit of the tree of life.

XXXIX

For truth only is living,
 Truth only is whole,
 And the love of his giving
 Man's polestar and pole;
 Man, pulse of my centre, and fruit of my body, and seed
 of my soul.

XL

One birth of my bosom;
 One beam of mine eye;

One topmost blossom
 That scales the sky;
 Man, equal and one with me, man that is made of me,
 man that is I.

However, to follow up the phrase "fruit of my body" with "seed of my soul" suggests irresistably that man, if not already constituting is at least the seed of such future moral developments as shall constitute, the soul of Yggdrasil/Hertha/Nature, and as such the source of such value judgments as are implied in stanza XXXVIII. In taking such a view, Swinburne concurs with many scientists - including, for instance, T. H. Huxley, and his grandson Julian Huxley (pp.122-3). He is also in broad agreement with a poet like Meredith, who much more explicitly and frequently maintains that nature is incomplete without man, needing him in order to fulfil her highest self. But such an idea seems directly to contradict that line already commented on in the first stanza,

"God changes, and man, and the form of them bodily: I
 am the soul.

In other words Swinburne has been unable to maintain that early, bold inversion, whereby material Nature became the eternal, unchanging soul, and Man and God the changing, ephemeral body. And try as he will, in the last line of the poem, to re-establish the principle that man is an integral part of the eternal and enduring stuff of Hertha, the previous four lines, emphasising man's pre-eminence, merely strengthen the suggestion already taking root that in man Hertha is beginning to transcend the purely material and enter on a new order

of existence - in other words, to acquire a "soul".

It will be obvious, by now, that though evolution is an unchallenged, almost unspoken assumption lying behind a good deal of Swinburne's verse, it is far from being a major preoccupation of his. Tillyard argues that the defence of Truth (stanzas XXXVIII & XXXIX, for instance), and in particular the attacked, almost persecuted Truth of Science, provided a cause for Swinburne's crusading verse. This may to a limited extent be true, but much more obvious causes he espouses are liberty (Italian in particular), and the overthrow of established religion. Materialistic science, including theories of evolution, was obviously of great assistance in the pursuit of the latter. With regard to the former, the mechanistic, inevitable, and wholly fortuitous nature of the progress implied by Darwinian evolutionary theory seems almost inimical (as already argued in the case of Shelley) to revolutionary ardour. This difficulty Swinburne sidesteps, to his own satisfaction if not that of others, by the simple device of equating Hertha (the materialistic origin of everything, including the impulse to evolutionary progress) with Freedom. Her iconoclastic, and therefore liberating, role in connection with Swinburne's rabid anti-clericalism made such an equation easier. But that it has no ultimate validity, or even appropriateness, is clearly admitted even by Swinburne (thou not consciously perhaps) when, in making Man the fruit of Hertha's body and seed of her soul,

he implies that only in and through Man does Hertha value or strive for such moral or spiritual values as Freedom. Therefore Hertha is on the side of freedom only to the extent that man is, and we are back where we started, relying on our own resources. Indeed, to the extent that man is against Freedom, Hertha is against it, and it is ultimately as meaningful to say she is Goddess of Slavery, of War, of Privilege, and of Despair, as to say she is Goddess of Freedom. Hertha's only duty is growth - a growth without purpose or reward, till in the person of man she is able to recognise the meaning of such concepts. All of which, of course, Swinburne again admits, since the "earth-god, Freedom" is also "The great god Man, which is God". "Glory to Man in the Highest!"

It is perhaps unfair to subject Swinburne to any close, intellectual analysis, since his purpose is not to prove a thesis but to have an impact. Nevertheless, it can lead us to ask ourselves how the nature and techniques of the poem qua poem help it to surmount or circumvent some of the inconsistencies noted. For reading it as one feels all Swinburne was intended to be read, one is not conscious of them.

Poetry does not lend itself to the exposition of an abstract, impersonal theory of the universe. Pope, in An Essay on Man, or Lucretius in De Rerum Naturae, are exceptions to the more general practice followed by Dante, Spenser, Milton and others. And Swinburne, with an even more thoroughly depersonalised universe and set of laws

than Pope to give expression to, follows the more usual method and personifies or mythologises his latter-half-of-the-nineteenth-century Weltanschauung. It is this personification which gives Swinburne opportunity to clothe the nakedness of his ideas in the flesh-and-blood lyricism of stanza II, or stanzas XXX and XXXI. It is this personification which lets the boringly tautologous pantheism of merely natural forces nevertheless acquire the paradox, the mystery, and the dramatic force of stanzas IV to VIII. And it is this personification (since we know we are not meant to take it literally) which allows Swinburne to mask any contradiction between an overtly mechanistic view of the universe and an implicitly teleological one. Such an implication is there, as we have seen, vaguely in stanzas IX to XIII, and more explicitly in stanza XIX. It also lies at the back of the whole controversy as to whether Hertha can be both earth-Goddess and Goddess of Freedom. Once an impersonal, wholly materialistic set of natural forces has for poetic purposes been personified, poet and reader alike tend unconsciously to credit it with both purposes and principles. Yet at the very same time, as in the first few stanzas of Hertha, the overt, conscious emphasis may still be on a mindless, materialistic determinism.

This avenue of poetic escape from the same, but even more intensely felt, dilemma was available neither to Samuel Butler, nor to the later creative evolutionist, Henri Bergson. In both cases science seemed to have made it impossible to think in terms of a

divinely personal teleology, yet in both cases a wholly mechanical, purposeless universe was equally unthinkable. So Butler postulated memory persisting through heredity, and allowed life from the outset to set the upward trend to evolution in a frankly Lamarckian manner. And Bergson, followed by Shaw and others, postulated an impersonal, blind and unknowing, yet somehow purposeful Life-Force, operating via evolution. Swinburne's way is much easier: to personify the processes of nature in a purely symbolic way, thus making it possible to feel in terms of purpose and intention at the same time as one is arguing against the possibility of any such things as purpose and intention existing.

Nevertheless, there is something about the forcefulness of the personification in Hertha, something about the impetus and effectiveness of the whole poem, despite its inconsistencies, which makes one doubt whether Swinburne ever was, even at a conscious level, as much of a mechanist as the first few stanzas seem to imply. Materialism was all very well as weapon against religion, but there is something very like Bergson's Life-Force about the blood in Hertha's veins, and the rising sap in the trunk and branches of Yggdrasil.

Someone who, as a derivative imitator of the Swinburne manner in his verse at least, can show us Swinburne's qualities in smaller compass and sharper relief, almost in parody, is Oscar Wilde. Panthea (1881) gives us, in just a few stanzas, an impersonal, Hertha-like

pantheism, evolution, the necessary conjunction of opposites, the rejuvenating role of death, and the joyous loss of individuality in an Universal Immortality.

With beat of systole and of diastole
 One grand great life throbs through earth's giant heart,
 And mighty waves of single Being roll
 From nerveless germ to man, for we are part
 Of every rock and bird and beast and hill,
 One with the things that prey on us, and one with what
 we kill.

From lower cells of waking life we pass
 To full perfection; thus the world grows old:
 We who are godlike now were once a mass
 Of quivering purple flecked with bars of gold,
 Unsentient or of joy or misery,
 And tossed in terrible tangles of some wild and wind-swept
 sea.

This hot hard flame with which our bodies burn
 Will make some meadow blaze with daffodil,
 Ay! and those argent breasts of thine will turn
 To water-lilies; the brown fields men till
 Will be more fruitful for our love to-night,
 Nothing is lost in nature, all things live in Death's
 despite ...

... How my heart leaps up
 To think of that grand living after death
 In beast and bird and flower, when this cup,
 Being filled too full of spirit, bursts for breath,
 And with the pale leaves of some autumn day
 The soul earth's earliest conqueror becomes earth's last
 great prey ...

... We shall be
 Part of the mighty universal whole,
 And through all aeons mix and mingle with the Kosmic Soul!

We shall be notes in that great Symphony
 Whose cadence circles through the rhythmic spheres,
 And all the live World's throbbing heart shall be
 One with our heart; the stealthy creeping years
 Have lost their terrors now, we shall not die,

The Universe itself shall be our Immortality.⁴³

Even more clearly, the close of Humanitad (1881), though laying more stress than Swinburne on evolution, and though still shriller in its blasphemy, is irresistably reminiscent of the close of Hymn of Man.

Is this the end of all that primal force
 Which, in its changes being still the same,
 From eyeless Chaos cleft its upward course,
 Through ravenous seas and whirling rocks and flame,
 Till the suns met in heaven and began
 Their cycles, and the morning stars sang, and the Word
 was Man!

Nay, nay, we are but crucified, and though
 The bloody sweat falls from our brows like rain,
 Loosen the nails - we shall come down I know,
 Staunch the red wounds - we shall be whole again,
 No need have we of hyssop-laden rod,
 That which is purely human, that is Godlike, that is God.⁴⁴

The aim is so clearly to shock that Wilde can have next to no interest in evolution except as a means to further his self-consciously naughty challenge to orthodoxy. Swinburne, one feels never merely utilized it quite so shamelessly.

In the case of Meredith, probably the first thing to be noted about him, and something which distinguishes him clearly from Swinburne, is that he is a nature poet. By this I mean a poet who had an eye for the detail as well as the grand sweep of nature, who had observed and noted as well as being moved. In this respect his verse is like that of Wordsworth and Tennyson, though not quite so excruciatingly precise as that of the latter. This is apparent in many of his early poems, as

witness, for instance, these lines from Pastorals (1851).

There by the wet-mirrored osiers, the emerald wing of
 the king fisher
 Flashes, the fish in his beak! there the dab-chick dived,
 and the motion
 Lazily undulates all thro' the tall standing army of
 rushes.⁴⁵

And years later, in The Years Had Worn Their Seasons' Belt (1909),
 he could still write:

You know the grey of dew on grass

and

O she was fair as a beech in May
 With the sun on the yonder side.⁴⁶

This love of nature and familiarity with her ways is apparent
 in many of the poems we shall be examining for different reasons,
 and in none more so than Ode to the Spirit of Earth in Autumn (1862).
 This is a poem, moreover, which reveals and revels in that deep
 joyousness of nature which Meredith so often celebrates. Autumn
 is seen as joyful rather than melancholy in almost all its aspects,
 and first in the richness and rapture of an autumn sunset.

A lustrous heavenly orchard hung the West,
 Wherein the blood of Eden bloomed again:
 Red were the myriad cherub-mouths that pressed
 Among the clusters, rich with song, full fain,
 But dumb, because that overmastering spell
 Of rapture held them dumb ...⁴⁷

And when the winds arrive, they are gay winds.

Forth from the cloven skies came bands
 Of revel-gathering spirits⁴⁸

till

'Twi't dark and utter dark, the great wind drew
 From heaven that disenchanting harmony
 To join earth's laughter ...⁴⁹

Even the sombre pines Meredith describes as

... upon their wide roots poised,
 Whom never madness in the air
 Can draw to more than loftier stress
 Of mournfulness, not mournfulness
 For melancholy, but Joy's excess ...⁵⁰

All told it is

... a night of Pagan glee!⁵¹

In the same way, in The Spirit of Shakespeare (1883),

Meredith writes:

Thy greatest knew thee, Mother Earth; ...
 ... thence had he the laugh
 We feel is thine: broad as ten thousand beeves
 At pasture!⁵²

There is laughter again in The Appeasement of Demeter (1887), when

"the Great Mother" breaks her curse with a laugh.

Laughter! O thou reviver of sick Earth!
 Good for the spirit, good
 For body, thou! to both art wine and bread!⁵⁵

Probably the most famous of Meredith's poems to show this
 joyfulness of nature is Love in the Valley (1851 and 1878); certainly
 the most ecstatic and rapturous is The Lark Ascending (1881), where
 "the very jet of earth" that is his song is "A song of light", "An
 ecstasy to music turned, / Impelled by what his happy bill / Disperses",
 and is

Renewed in endless notes of glee,
 So thirsty of his voice is he,
 For all to hear and all to know
 That he is joy, awake, aglow,
 The tumult of the heart to hear
 Through pureness filtered crystal-clear,
 And know the pleasure sprinkled bright
 By simple singing of delight,
 ShriII, irreflective, unrestrained,
 Rapt, ringing, on the jet sustained
 Without a break, without a fall,
 Sweet-silvery, sheer lyrical,
 Perennial ... etc.⁵⁴

It will be clear already, especially from the Ode to the Spirit of Earth in Autumn, that there is a certain robustness about the joyfulness of nature as portrayed by Meredith - a robustness able to co-exist with the very opposite of joy and still survive. This robustness or boisterousness is associated more often than not, as in the Ode to the Spirit of Earth, with high winds. There is wind in The South-Wester (1888) and wind in Hard Weather (1888), both poems being written in suitably vigorous, rolling tetrameters; there is a wind "Overhead, overhead" where "Rushes life in a race"⁵⁵ in Dirge in the Woods (1870); most notably and most poignantly, there is a strong wind with its "sound,/None sweeter, of woods flapping sail,/With the first full flood of our year" on the day of Meredith's wife's funeral in A Faith on Trial (1888).⁵⁶

But perhaps the most important thing to be said about Meredith the nature poet is that he was such not merely in the sense that the Georgians were, happening to write when they did write of "rocks and

stones and trees", not merely in the sense that Tennyson was, with his scientific lore and his note-books crammed with observations, but more in the sense that Wordsworth was, making his attitude to nature the keystone of his whole philosophy of life. This is not to say that the attitudes to nature, or the philosophies, of Wordsworth and Meredith were at all similar.

Nature to Meredith is above all Mother Nature, or Mother Earth. The words as he uses them are more than a mere cliché; they clearly imply a relationship, a kinship, between ourselves and Nature or Earth, and a relationship in which in a number of respects Earth's role is maternal and ours is filial. It has, with justice, been pointed out that our kinship, our oneness, with nature is far better conveyed by some of those poems of Meredith's which merely imply this than by those which explicitly state it. An example of the former is Dirge in the Woods. An even better one is Love in the Valley, where some of the stanzas most strongly expressive of the beauty of the beloved and the strength of the lover's feelings are those where she is not only described in terms of natural images, but increasingly seems to become involved in and almost indistinguishable from the natural world.

Shy as the squirrel and wayward as the swallow,
 Swift as the swallow along the river's light
 Circleting the surface to meet his mirrored winglets,
 Fleeter she seems in her stay than in her flight.
 Shy as the squirrel that leaps among the pine-tops,
 Wayward as the swallow overhead at set of sun,
 She whom I love is hard to catch and conquer,
 Hard, but O the glory of the winning were she won! ...

This I may know: her dressing and undressing
 Such a change of light shows as when the skies in sport
 Shift from cloud to moonlight; or edging over thunder
 Slips a ray of sun; or sweeping into port
 White sails furl; or on the ocean borders
 White sails lean along the waves leaping green.
 Visions of her shower before me, but from eyesight
 Guarded she would be like the sun were she seen ...

O the golden sheaf, the rustling treasure-*armful!*
 O the nutbrown tresses nodding interlaced!
 O the treasure-tresses one another over
 Nodding! O the girdle slack about the waist!
 Slain are the poppies that shot their random scarlet
 Quick amid the wheatears: wound about the waist,
 Gathered, see these brides of Earth one blush of ripeness!
 O the nutbrown tresses nodding interlaced! ...

Soon will she lie like a white-frost sunrise.
 Yellow oats and brown wheat, barley pale as rye,
 Long since your sheaves have yielded to the thresher,
 Felt the girdle loosened, seen the tresses fly.
 Soon will she lie like a blood-red sunset.
 Swift with the to-morrow, green-winged Spring!
 Sing from the South-West, bring her back the truants,
 Nightingale and swallow, song and dipping wing.⁵⁷

Nevertheless, Meredith's more usual way was to write poems stating the relationship explicitly, having first personified Mother Earth in a very Hertha-like manner. Indeed, J. W. Beach,⁵⁸ having argued that Meredith knew Swinburne well, that the latter defended Modern Love in the face of prudish attacks, that they corresponded over Meredith's novel about revolution in Italy, Vittoria (1866), and that Meredith had almost certainly read some of the Songs Before Sunrise well before their publication, 'assumes that Meredith was influenced in this respect by Swinburne. This is possible, though it should be remembered that Ode to the Spirit of Earth in Autumn

was first published in 1862, well before Swinburne wrote Hertha, and though it is far from being as complete a statement of Meredith's conception of Earth as Mother as is a later poem like Earth and Man (1883), or as is Hertha of Swinburne's, nevertheless it does talk not only of "Great Mother Nature" but of "Earth, the mother of all".

The search for influences on Meredith in connection with Mother Earth could be pursued with much ingenuity and taken much further than Swinburne. There is for instance Goethe, with his exaggerated respect for the spirit of womanhood (e.g. *Mater Gloriosa* at the close of Faustus Pt. II). We know that Goethe was someone for whom Meredith always had the highest regard. Of him he wrote in a letter in 1864:

Men to whom I bow my head (Shakespeare, Goethe; and in their way, Moliere, Cervantes) are Realists au fond. But they have the broad arms of Idealism at command. They give us Earth; but it is earth with an atmosphere.⁵⁹

and again in 1906:

As for me, you ask me of my readings of the formative kind. They were first the Arabian Nights, then Gibbon, Niebuhr, Walter Scott; then Moliere, then the noble Goethe, the most enduring.⁶⁰

It is probably from Goethe, too, that Meredith first absorbed a sympathy with an evolutionary view of nature and the universe. One could even argue that the early loss of his own mother, followed by his estrangement from his father, left a need for a strong parental element in Meredith's reading of the universe. However, what concerns us here is the mere fact, for whatever reason, of this article of

Meredith's poetic belief, and its relevance to his belief in evolutionary theory.

Clearly one quality of Mother Earth is her sheer fecundity - her capacity to give, and to give abundantly, joyously, lustily, boisterously almost. The opening lines of Earth and Man (1883) express this very clearly.

On her great venture, man,
Earth gazes while her fingers dint the breast
Which is his well of strength.⁶¹

This same image of Mother Earth the provider of milk is one which recurs frequently in Meredith's poems. Of autumn leaves, in The South-Wester (1888) it is said that "they flew the breast, Earth's milk";⁶² Earth's Secret (1883) closes with the line "For Earth, that gives the milk, the spirit gives";⁶³ and Hard Weather (1888) contains the lines "Earth yields the milk, but all her mind/Is vowed to thresh for stouter stock".⁶⁴ It is as true of mankind as it was of the children in The Orchard and the Heath (1868) that

The boughs hung low ...
They had but to lift hands or wait
For fruits to fill them; fruits were all their sky.⁶⁵

It will already be apparent, however, that Mother Earth has material attributes and aims other than mere fecundity and generosity. The second and third stanzas of Earth and Man show her wise enough to watch her favourite son make his own way in a harsh world - indeed, powerless to do otherwise.

II

More aid than that embrace,
That nourishment, she cannot give; his heart
Involves his fate; and she who urged the start
Abides the race.

III

For he is in the lists
Contentious with the elements, whose dower
First sprang him; for swift vultures to devour
If he desists.⁶⁶

And Hard Weather, as is implicit in the snatch already cited, goes much further, and shows Mother Earth as positively welcoming, and indeed administering, the hardships man has to face, as a spur to improvement.

Interpret me the savage whirr ...
Look in the face of men who fare
Lock-mouthed, a match in lungs and thews
For this fierce angel of the air,
To twist with him and take his bruise.
This is the face beloved of old
Of Earth, young mother of her brood:
Nor broken for us shows the mould
When muscle is in mind renewed ...
So shall her blows be shrewdly met,
Be luminously read the scene
When Life is at her grindstone set,
That she may give us edging keen ...
Such meaning in a dagger-day
Our wits may clasp to wax in power.
Yea, feel us warmer at her breast,
By spin of blood in lusty drill,
Than when her honeyed hands caressed,
And Pleasure, sapping, seemed to fill.

Behold the life at ease; it drifts.
The sharpened life commands its course.
She winnows, winnows roughly; sifts,
To dip her chosen in her source:
Contention is the vital force
Whence pluck they brain, her prize of gifts.⁶⁷

This harshness of Mother Earth or Nature is a theme which recurs, under many guises, throughout Meredith's verse. There is, for instance, the same doctrine as we have met in Swinburne, that life is and must and should be a blend of such opposites as day and night, good and evil, life and death, here expressed in lines from The Woods of Westermain (1883) which recall Erasmus Darwin (especially in "Young Impulsion") in their trick of re-animating, by means of personification, that which has only just been rendered abstract.

Lo, You look at Flow and Drought
 Interflashed and interwrought:
 Ended is begun, begun
 Ended, quick as torrents run.
 Young Impulsion spouts to sink;
 Luridness and lustre link;
 'Tis your come and go of breath;
 Mirrored pants the Life, the Death;
 Each of either reaped and sown:
 Rosiest rosy wanes to crone.⁶⁸

Harshest of all, perhaps, is the complete indifference of nature, so far as the individual is concerned, so long as the species, type or race thrive and flourish.

Earth, the mother of all,
 Moves on her stedfast way,
 Gathering, flinging, sowing.
 Mortals, we live in her day,
 She in her children is growing ...

She knows not loss,
 She feels but her need,
 Who the winged seed
 With the leaf doth toss ...

Behold, in yon stripped Autumn, shivering grey,
 Earth knows no desolation.
 She smells regeneration
 In the moist breath of decay.⁶⁹

These lines are from the relatively early Ode to the Spirit of Earth in Autumn (1862); they can be more than matched by the even bleaker "only for the numbers Nature's care/Is shown, and she the personal nothing heeds"⁷⁰ from The Test of Manhood (1901).

The burden of both the above quotations is, of course, precisely what Tennyson most feared about the view of the universe which science seemed to be unveiling. And he would have found the thought that Earth "smells regeneration/In the moist breath of decay", or that "the fuel, decay, brightens the fire of renewal" (Seed Time, 1888),⁷¹ small consolation for the loss of his personal identity to eternity. This much Meredith seems half to concede, in a passage from the Ode to the Spirit of Earth where the glimpse of a star through a mesh of moving branches suggests a longing for some fixed point of reference in one's life, beyond the welter of material mutability.

A star has nodded through
 The depths of the flying blue.
 Time only to plant the light
 Of a memory in the blindness.
 But time to show me the sight
 Of my life thro' the curtain of night;
 Shining a moment, and mixed
 With the onward-hurrying stream,
 Whose pressure is darkness to me;
 Behind the curtain, fixed,
 Beams with endless beam
 That star on the changing sea.⁷²

Furthermore, lines eventually omitted from a point further on in the poem include the following, where the star-sea image, transformed, seems to be used to suggest some possible extra-terrestrial destiny,

and a masculine deity whose role transcends that of Mother Earth
(cf. pp. 348-9, 353-5).

Friends! we are yet in the warmth of our blood,
And swift as the tides upon which we are borne
There's a long blue rift in the speeding scud,
That shows like a boat on a sea forlorn,
With stars to man it! That boat is ours,
And we are the mariners on the great flood
Of the shifting slopes and the drifting flowers,
That oar unresting towards the morn!
And are we the children of Heaven and earth,
We'll be true to the mother with whom we are,
So to be worthy of Him who afar
Beckons us on to a brighter birth.⁷³

It is arguable that the destiny is collective rather than individual, and that the "brighter birth" is the improved purely earthly birth and lot which, thanks to human progress, future generations of "us" shall enjoy, though this seems unlikely. However, these are lines which Meredith eventually rejected, whereas the star-image first quoted, which Meredith retained in the final version of the poem, is followed immediately by a denial of all it stands for - an invocation of the great Annihilator.

Great Mother Nature! teach me, like thee,
To kiss the season and shun regrets ...
Teach me to feel myself the tree,
And not the withered leaf ...
Death shall I shrink from, loving thee?
Into the breast that gives the rose,
Shall I with shuddering fall?⁷⁴

Clearly much of this indifference towards the individual, so long as the collective persists, is strongly Darwinian in spirit. Indeed, phrases such as "to thresh for stouter stock", and "Contention

is the vital force", from Hard Weather, are expressions of almost pure natural selection. The Thrush in February (1883) sings much the same song.

She, judged of shrinking nerves, appears
A Mother whom no cry can melt;
But read her past desires and fears,
The letters on her breast are spelt.

A slayer, yea, as when she pressed
Her savage to the slaughter-heaps,
To sacrifice she prompts her best:
She reaps them as the sower reaps.

But read her thought to speed the race,
And stars rush forth of blackest night:
You chill not at a cold embrace
To come, nor dread a dubious night.⁷⁵

Admittedly, "To sacrifice she prompts her best" is not quite orthodox in its exposition of natural selection, but the following from Earth and Man is much closer to being so.

XV

He deems her cherishing of her best endowed
A wanton's choice.⁷⁶

It is very obvious, in fact, that Meredith is quite well-versed in evolutionary theory, including Darwinism, and not in the least appalled by it. There are, for instance, the often-quoted lines from The Woods of Westermain which show that he regarded stellar and biological development as all part of the same process.

Or, where old-eyed oxen chew
Speculation with the cud,
Read their pool of vision through,
Back to hours when mind was mud;
Nigh the knot, which did untwine

Timelessly to drowsy suns;
 Seeing Earth a slimy spine,
 Heaven a space for winging tons.⁷⁷

And in Ode to the Comic Spirit (1892), Meredith shows the same awareness as we have seen ~~first~~ expressed by Wallace of the need for bi-pedal posture before the hand could be free to become of such importance as to give brain a decisive role in natural selection.

... the harvest brain ...,
 Which is our gold crushed out of joy and pain
 Since first men planted foot and hand was king.⁷⁸

Perhaps the most convincing evidence of Meredith's familiarity with the concepts and terms of Darwinism is to be found, as with Swinburne, in his comic use of them, in the novel The Egoist (1879) where he is describing the courtship of Miss Middleton by Sir Willoughby Pattern.

A deeper student of science than his rivals, he appreciated Nature's compliment in the fair one's choice of you. We now scientifically know that in this department of the universal struggle success is awarded to the bettermost. You spread a handsomer tail than your fellows, you dress a finer topknot, you pipe a newer note, have a longer stride. She reviews you in competition, and selects you. The superlative is magnetic to her. She may be looking elsewhere, and you will see - the superlative will simply have to beckon, away she glides. She cannot help herself; it is her nature, and her nature is the guarantee for the noblest race of men to come of her. In complimenting you, she is a promise of superior offspring. Science thus - or it is better to say, an acquaintance with science - facilitates the cultivation of aristocracy. Consequently a successful pursuit, and a wresting of her from a body of competitors, tells you that you are the best man. What is more, it tells the world so.⁷⁹

To which, when Miss Middleton has accepted him, is added;

Thus did Miss Middleton acquiesce in the principle of selection. And then did the best man of a host blow his triumphant horn, and loudly. He looked the fittest, he justified the dictum of science. The survival of the Patternes was assured.⁸⁰

Nowhere is the satire directed at the basic tenets of evolutionary theory, however; unlike Browning and Tennyson, Meredith can it seems accept these without flinching. So apparently could Emerson and Whitman, though in their case the form of evolution they accepted was still strongly teleological. What remains to be established in Meredith's case is how random, how Darwinian, he envisages the upward direction of his evolution to have been.

It is difficult to be categoric in one's answer to such a question. There are times when Meredith's view of progress seems to be quite clearly non-teleological, as in this already-quoted stanza from Earth and Man, where Mother Earth, like any other "earthly" parent, can only provide her offspring, Man, with the best start possible; the rest is up to him.

II

More aid than that embrace,
That nourishment, she cannot give: his heart
Involves his fate; and she who urged the start
Abides the race.⁸¹

Then there are other times when the turn of phrase used by Meredith in his personification of Mother Earth seems just as clearly to imply a more teleological view of nature's processes, as in these lines, again already quoted, from The Thrush in February.

But read her thought to speed the race,
And stars rush forth of blackest night ...⁸²

As already argued in the case of Swinburne, the mere act of personifying Earth or Nature helps to add a dimension of purposiveness to natural processes. On the other hand, Meredith's constant insistence that "Earth was not Earth before her sons appeared",⁸³ - in other words, that Earth finds completion and fulfilment, and attains to intelligence for the first time, in man - means that, logically, she cannot be thought of as having planned him in advance, can only be thought of as having evolved him blindly, by trial and error.

The sonnet, Earth's Secret (1883), shows clearly how there is a difference between the progress which has been possible since the appearance of man, and that which can be achieved by natural forces alone. In this Meredith is only expressing the same view as Wallace and Julian Huxley and others that the entry of consciousness and the human mind on the scene has radically changed the nature of evolution, so that post-human evolution can be credited with goals and purposes (whether these are achieved or not) whereas pre-human evolution could not. Yet though all this is implicit in the poem, the emphasis is rather the reverse, that man does not transcend purely natural forces, that "Earth that gives the milk, the spirit gives".

Not solitarily in fields we find
 Earth's secret open, though one page is there;
 Her plainest, such as children spell, and share
 With bird and beast; raised letters for the blind.
 Not where the troubled passions toss the mind,
 In turbid cities, can the key be bare.
 It hangs for those who hither thither fare,
 Close interthreading nature with our kind.
 They, hearing History speak, of what men were,
 And have become, are wise. The gain is great
 In vision and solidity; it lives.
 Yet at a thought of life apart from her,
 Solidity and vision lose their state,
 For Earth, that gives the milk, the spirit gives.⁸⁴

Clearly Meredith is concerned to play down distinctions - particularly theological ones - between man and the rest of nature. Again, in Earth and Man we have the same idea that Earth achieves fulfilment only in Man, followed by the assertion that man merely "evolves" (in the sense that eighteenth century embryologists used the word) or unfolds that which has potentially been a part of nature since the start.

XXIV

Him she owes
 For half her loveliness a love well won
 By work that lights the shapeless and the dun,
 Their common foes.

XXV

He builds the soaring spires,
 That sing his soul in stone: of her he draws,
 Though blind to her, by spelling at her laws,
 Her purest fires.

XXVI

Through him hath she exchanged,
 For the gold harvest robes, the mural crown,

Her haggard quarry-features and thick frown
Where monsters ranged.

XXVII

And order, high discourse,
And decency, than which is life less dear,
She has of him: the lyre of language clear,
Love's tongue and source.⁸⁵

And yet, though striving man may not acknowledge the fact, that aspect of his strivings and aspirations which takes the form of a

XXIX

cry to heaven is a cry to her
He would evade.

XXX

Not elsewhere can he tend.
Those are her rules which bid him wash foul sins;
Those her revulsions from the skull that grins
To ape his end.

XXXI

And her desires are those
For happiness, for lastingness, for light.
'Tis she who kindles in his haunting night
The hoped dawn-rose.⁸⁶

The effect of such lines is on the one hand to suggest (and this Meredith clearly intended) that man remains firmly a part of the natural order, needing no supernatural explanations to account for his powers, while on the other (and it is not so certain that Meredith intended this) endowing Earth or nature as a whole, pre-human as well as post-human, with the purposefulness of Man.

That any sense of purpose or teleology is largely dependent on the accident of Meredith's personification of Mother Earth will

become apparent, I think, if we turn to examples of other imagery which he uses to convey the process and principle of progress. This is most markedly so when the image is wholly impersonal, as in the opening lines of The Test of Manhood (1901).

Like a flood river whirled at rocky banks,
 An army issues out of wilderness,
 With battle plucking round its ragged flanks;
 Obstruction in the van; insane excess
 Oft at the heart; yet hard the onward stress
 Unto more spacious, where move ordered ranks,
 And rise hushed temples built of shapely stone,
 The work of hands not pledged to grind or slay.
 They gave our earth a dress of flesh on bone;
 A tongue to speak with answering heaven gave they.
 Then was the gracious birth of man's new day;
 Divided from the haunted night it shone.⁸⁷

The image of the flood river, confined in fact to the first line, persists in spirit throughout the passage; man's emergence from barbarism is conceived in terms of an impersonal and unwitting "onward stress" or force which it would not be at all hard to reconcile with the purely biological or material forces at work in Darwinism.

Even personification is reconcilable with the non-teleological spirit of Darwinism, when what is personified is a great deal less than the whole of Mother Earth or Nature. In The Woods of Westermain, for instance, the spirit or principle of Change is personified, before being shown to be rooted in the alternating and hence all-inclusive nature of Nature. Yet is quite clearly remains an impersonal tendency or principle.

You must love the light so well
 That no darkness will seem fell ...
 Then you touch the nerve of Change,
 Then of Earth you have the clue;
 Then her two-sexed meanings melt
 Through you, wed the thought and felt.
 Sameness locks no scurfy pond
 Her for custom, crazy-fond:
 Change is on the wing to bud
 Rose in brain from rose in blood.⁸⁸

Later in the poem Change transforms the dragon of brute selfishness,
 making of him

Such a servant as none saw
 Through his days of dragonhood.⁸⁹

Finally,

Change, the strongest son of Life,
 Has the Spirit here to wife.
 Lo, their young of vivid breed
 Bear the lights that onward speed ...⁹⁰

Such a bifurcating or proliferating mythology, besides being expressed in equally bifurcating imagery, is so clearly a mere literary device that personification carries with it no implication either of personality or of purpose. In any case, the word "Change", even with its initial capital, has far stronger evolutionary overtones than personal ones.

Certain of Meredith's late poems (The Vital Choice, With the Huntress, With the Persuader, The Test of Manhood - all published in 1901) return to a variant of the idea of life being a blend of opposites. They postulate twin forces or principles being involved

in man's progress, and personify them as Artemis and Aphrodite,
Huntress and Persuader.

Not far those two great Powers of Nature speed
Disciple steps on earth when sole they lead ...
His (i.e. Man's) task to hold them both in breast, and
yield
Their dues to each, and of their war be field.⁹¹

This is no more than a restatement of the age-old distinction between the animal and motivating energy of our desires on the one hand, and on the other the control it is necessary to exercise over them if other than immediate aims are to be achieved. The distinction is there in Pope's mythology of Self-Love and Reason, and equally in Freud's Id and Super-Ego. Meredith himself had already stated the distinction more than once in The Woods of Westermain - often in obscure yet almost Freudian imagery, most clearly and succinctly in the line "Mind of man and bent of brute".⁹² But again, neither in the earlier poem nor in the later ones, despite the use of personification, is there any suggestion of outside control or teleological planning. It could all perfectly well be an attempt to personify or mythologise quite impersonal, biological forces.

Most remarkable of all, perhaps, are some lines from The Test of Manhood in which God himself figures, and is referred to not only in those to be quoted, but in those which precede and those which follow them, in a manner which clearly presupposes his existence. Yet although there is progress both in the processes of nature and in the affairs of men, man's own progress towards God seems entirely

self-motivated, self-directed, and unaided, without the least suggestion that it is the fulfilment of some plan or purpose of God's. And similarly, one presumes, Earth's prior progress towards man had been quite unplanned - the result of blind, impersonal forces.

Close on the heart of Earth his bosom beats,
 When he the mandate lodged in it obeys,
 Alive to breast a future wrapped in haze,
 Strike camp, and onward, like the wind's cloud-fleets.
 Unresting she, unresting he, from change
 To change, as rain of cloud, as fruit of rain;
 She feels her blood-tree throbbing in her grain,
 Yet skyward branched, with loftier mark and range.
 No miracle the sprout of wheat from clod,
 She knows, nor growth of man in grisly brute;
 But he, the flower at head and soil at root,
 Is miracle, guides he the brute to God.
 And that way seems he bound; that way the road,
 With his dark-lantern mind, unled, alone,
 Wearifully through forest-tracks unsown,
 He travels, urged by some internal goad.⁹³

And yet it may be we have overstressed the impersonal quality of the factors making for progress and evolution in Meredith's poems. If these same factors, as set down in Meredith's poetry, are not pre-ordained and end-determined, nor are they quite as wastefully random as natural selection. The opening lines, quoted above, from The Test of Manhood, even more the ones quoted below from the close of A Faith on Trial, and many others, all suggest that Meredith, like Butler and Bergson and Shaw in their different ways, felt a need for evolution and progress to be the result of more positive, intentionally constructive forces than those operating through

natural selection alone. There is, in fact, the feeling of a creative Life-Force at work - the vital sap of Mother Earth, which has as its aim, even though working in the dark by trial and error, an eventual reunion via man with God.

For back do you look, and lo,
 Forward the harvest of grain!
 Numbers in council, awake
 To love more than things of my lap,
 Love me; and to let the types break,
 Men be grass, rocks rivers, all flow;
 All save the dream sink alike
 To the source of my vital in sap:
 Their battle, their loss, their ache,
 For my pledge of vitality know.
 The dream is the thought in the ghost;
 The thought sent flying for food;
 Eyeless, but sprung of an aim
 Supernal of Reason, to find
 The great Over-Reason we name
 Beneficence: mind seeking Mind.
 Dream of the blossom of Good,
 In its waver and current and curve,
 With the hopes of my offspring enscrolled!
 Soon to be seen of a host
 The flag of the Master I serve!
 And life in them doubled on Life,
 As flame upon flame, to behold,
 High over Time-tumbled sea,
 The bliss of his headship of strife,
 Him through handmaiden me.94

The lines stand, in fact, as a summary of so much of what separated Meredith from Tennyson. It is hard to believe that Meredith did not actually have In Memoriam LV and LVI in mind when he had Earth say "let the types break, / Men be grass, rocks rivers, all flow", so long as the "dream", the "aim", albeit "eyeless", of the sheer "numbers"

of nature as a whole be still to "find/The great Over-Reason we name/Beneficence" in all "The bliss of his headship of strife". The "battle" the "loss", the "ache", all that so distressed Tennyson, Meredith is content to view as a "pledge" of Earth's "vitality" - as a manifestation almost of her "vital in sap". The result is a peculiar blend of Darwinian ruthlessness and Bergsonian aspiration.

It may well be that the whole uncertainty we have felt, in examining Meredith's poems, as to whether progress and evolution were purposive and teleological or not stems, in fact, from his beliefs being basically (whether he realised it or not) prophetically Bergsonian. Purpose there is, of a kind, but certainly not teleological purpose, since it works blindly from below.

Similarly, the doubt as to whether Man, in his progress, ever transcends Earth, may reflect this same belief in a positive Life-Force. For such progress seems often to imply an escape from the flesh, and therefore from Earth, consisting as it does in the acquisition of "More brain ... more brain",⁹⁵ until, having "Grown to the flower of brain",⁹⁶ that "Rose in brain from rose in blood",⁹⁷ Man henceforth "Has half transferred the battle to the brain"⁹⁸, knowing full well that "Her (Earth's) children of the labouring brain,/These are the champions of the race"⁹⁹. Yet spirit, so often scarcely to be distinguished as Meredith uses the words from brain, "Spirit wrought of her through strife"¹⁰⁰ remains firmly the province of Earth, "For

Earth that that gives the milk, the spirit gives"¹⁰¹, and "All woman is she to this man most dear;/He sows the bread and she in spirit reaps"¹⁰². Man therefore does transcend Earth, in the sense that he expands her; "Earth was not Earth before her sons appeared."¹⁰³

Yet he remains a part of her and owes all to her, in the sense that she is a blind Life-Force fulfilling herself in him and his progressive destiny. There is a similarity between the way she works and the mechanisms of Darwinism or natural selection; the drive is impersonal, is from below, and does not know where it is going. But however impersonal, it is nevertheless a positive, aspiring drive in the sense that natural selection is not, and can work in harmony and harness with the Lamarckian aspirations of the creatures it impels upward and onward.

There remains the question of Meredith's attitude toward religion and God. As far as orthodox religions and their gods are concerned, he is as uniformly if not quite as beligerently hostile as Swinburne. Man's motive for turning to such gods he sees as both despicable and selfish - a snivelling attempt to avoid mere death. This is most clearly seen, as are so many of Meredith's beliefs, in Earth and Man.

XVII

He will not read her good,
Or wise, but with the passion Self obscures;
Through that old devil of the thousand lures,
Through that dense hood:

XVIII

Through terror, through distrust;
 The greed to touch, to view, to have, to live:
 Through all that makes of him a sensitive
 Abhorring dust.

XIX

Behold his wormy home!
 And he the wind-whipped, anywhither wave
 Crazyly tumbling on a shingle-grave
 To waste in foam.

XX

Therefore the wretch inclines
 Afresh to the Invisible, who, he saith,
 Can raise him high: with vows of living faith
 For little signs ...

XXIII

From dust, of him abhorred,
 He would be snatched by Grace discovering worth.
 'Sever me from the hollowness of Earth!
 Me take, dear Lord!'¹⁰⁴

The hope of such an escape from mortality is, of course, vain, and not until he understands and accepts Earth's precept "Live in thy offspring as I live in mine"¹⁰⁵ will Man achieve true peace.

Yet there is a God for Meredith, as we have seen in lines eventually omitted from Ode to the Spirit of Earth in Autumn, and in The Test of Manhood and A Faith on Trial. And once again the clearest statement of his nature comes in Earth and Man, where we see that he is accessible to Earth but not to Man.

XLII

She her just Lord may view,
 Not he, her creature, till his soul has yearned

With all her gifts to reach the light discerned
Her spirit through.¹⁰⁶

Just how Man is to attain to God, as he is said to be capable of doing both here and in The Test of Manhood (p. 349), is not at all clear, since Meredith specifically denies Man any individual immortality. Presumably only after many more evolutionary cycles, in a manner similar to the one Tyndall reported as being abhorrent to Tennyson (p. 372).

XLIII

Then in him time shall run
As in the hour that to young sunlight crows;
And - "If thou hast good faith it can repose,"
She tells her son.¹⁰⁷

The only reason for postulating the existence of such a distant, unknowable deity would seem to be to give Earth's "vitality" or Life-Force an extrinsic source and goal. His role, however, is entirely passive; he merely exists, like an invisible star, since Man, "guides he the brute to God", does so unaided, "urged by some internal goad". Clearly Meredith wishes to retain some ultimate and absolute answer to the question why the direction taken by blind, natural processes should be considered an upward one, yet at the same time to guard against any arbitrary supernatural interference with those processes. But in removing God so utterly from the field of human endeavour, and rendering him so ignorant of and presumably indifferent to all that goes on here on earth, Meredith makes of him a figure perilously close to the mythologies Hardy

uses to embody all that fills him with despair about the universe
in which we live.

Has some Vast Imbecility,
Mighty to build and blend,
But impotent to tend,
Framed us in jest, and left us now to hazardry?

Or come we of an Automaton
Unconscious of our pains? ...
Or are we live remains
Of God head dying downwards, brain and eye now gone?¹⁰⁸

As with Tennyson and Browning in their early years, so now
with Meredith and Hardy; the same evidence, leading to approximately
the same world picture, provides differing temperaments with grounds
for seemingly diametrically opposed conclusions of hope and despair.

CHAPTER VIII

AN EVOLUTIONARY PESSIMIST

Tennyson and Browning, in their differing ways, felt their faith threatened by theories of evolution, and by the resultant spread of materialism, but managed to retain, unchanged in its essentials, their belief in a Christian metaphysic. Swinburne and Meredith, by contrast, scarcely had a faith to lose, and in fact constructed their belief in the future of mankind on a basis which was in part Darwinian. The main subject of this chapter, Thomas Hardy (1840-1928), is an example of one who lost his faith, in part at least as a result of Darwin, and could never find, or construct, a satisfactory one to replace it.

Though he is the most notable literary example of nineteenth century pessimistic agnosticism, Hardy is far from being unique in this respect. Edward FitzGerald in his translation of the Rubaiyat of Omar Khayyam (1859), and James Thomson in A City of Dreadful Night (1874), offer examples in the one case as well-known and in the other as extreme of poems of gloomy unbelief, though neither writes of Darwin or evolution as contributing to their scepticism. Moreover, many others like A. H. Clough and Matthew Arnold wrestled with grave doubts, to which Dover Beach, for instance, bears moving testimony. Arnold did in fact retain a Christian faith of

a kind, though dispensing with most of its biblical and doctrinal accessories or accretions, and stripping God down to "an enduring Power, not ourselves, that makes for righteousness".¹

Clough, in the following three lines from High and Low (a poem otherwise quite non-evolutionary in character, shows probable awareness of some kind of evolution.

That germs of things above their kind
May live, pent up and close confined
In humbler forms, it may be true ...²

And in Natura Naturans (1849), a light-hearted account of love in a tram-car, there is a marked sense of man's kinship with humbler - and sometimes preceding - forms of life.

... Yet owned we, fused in one,
The Power which e'en in stones and earths
By blind elections felt, in forms
Organic breeds to myriad births;
By lichen small on granite wall
Approved, its faintest feeblest stir
Slow spreading, strengthening long, at last
Vibrated full in me and her.

In me and her - sensation strange!
The lily grew to pendant head,
To vernal airs the mossy bank
Its sheeny primrose spangles spread,
In roof o'er roof of shade sun-proof
Did cedar strong itself outclimb,
And altitude of aloe proud
Aspire in floral crown sublime;

Flashed flickering forth fantastic flies,
Big bees their burly bodies swung,
Rooks roused with civic din the elms,
And lark its wild reveillez rung;
In Lybian dell the light gazelle,
The leopard lithe in Indian glade,
And dolphin, brightening tropic seas,
In us were living, leapt and played:

Their shells did slow crustacea build,
 Their gilded skins did snakes renew,
 While mightier spines for loftier kind
 Their types in amplest limbs outgrew;
 Yea, close comprest in human breast,
 What moss, and tree, and livelier thing,
 What Earth, Sun, Star of force possest,
 Lay budding, burgeoning forth for Spring.³

There are hints of Emerson's second Essay on Nature (p. 286) in the title and the mention of lichens; there is awareness in the last stanza quoted of over-developed extinct species. But nowhere in the poem is evolution directly referred to unless in "its faintest feeblest stir/Slow spreading, strengthening long, at last/Vibrated full in me and her". And certainly nowhere in his verse does Clough attribute his religious doubts to evolutionary theory.

In his poetry Arnold betrays his awareness of evolutionary theory even less clearly than Clough. (In his prose also, for one abreast of most contemporary movements in thought, Arnold tends to pass over science in general and evolution in particular: Darwin is mentioned once, very briefly, in his notebooks, for instance.⁴) The early poem, In Harmony with Nature (1849), written as an irritated rejoinder to one still preaching of nature as if in the eighteenth century, shows nature as "red in tooth and claw", but all progress, if we are to judge by this poem, begins with man.

"In harmony with Nature?" Restless fool,
 Who with such heat dost preach what were to thee,
 When true, the last impossibility -
 To be like Nature strong, like Nature cool.

Know, man hath all which Nature hath, but more,
 And in that more lie all his hopes of good.
 Nature is cruel, man is sick of blood;
 Nature is stubborn, man would fain adore;

Nature is fickle, man hath need of rest;
 Nature forgives no debt, and fears no grave;
 Man would be mild, and with safe conscience blest.

Man must begin, know this, where Nature ends;
 Nature and man can never be fast friends.
 Fool, if thou canst not pass her, rest her slave!5

Empedocles on Etna (1852) is more to the point, showing in the following stanzas the conviction on the part of Empedocles, if not of Arnold, that Nature is amoral and quite indifferent to human fate, that any guiding Power or Spirit in the universe is wholly immanent in his creation and shares its imperfection and impotence, and that most theology is based on specious rationalisation.

Streams will not curb their pride
 The just man not to entomb,
 Nor lightnings go aside
 To give his virtues room;
 Nor is that wind less rough which blows a good man's barge.

Nature, with equal mind,
 Sees all her sons at play;
 Sees man control the wind,
 The wind sweep man away;
 Allows the proudly-riding and the foundering bark ...

So, loath to suffer mute,
 We, peopling the void air,
 Make Gods to whom we impute
 The ills we ought to bear;
 With God and Fate to rail at, suffering easily.

Yet grant - as sense long miss'd
 Things that are now perceived,
 And much may still exist
 Which is not yet believed -
 Grant that the world were full of Gods we cannot see;

All things the world which fill
 Of but one stuff are spun,
 That we who rail are still,
 With what we rail at, one;
 One with the o'erlabour'd Power that through the breadth
 and length

Of earth, and air, and sea,
 In men, and plants, and stones,
 Hath toil perpetually,
 And travails, pants, and moans;
 Fain would do all things well, but sometimes fails in
 strength.

And patiently exact
 This universal God
 Alike to any act
 Proceeds at any nod,
 And quietly declaims the cursings of himself.

This is not what man hates,
 Yet he can curse but this.
 Harsh Gods and hostile Fates
 Are dreams! this only is -
 Is everywhere; sustains the wise, the foolish elf ...

... next, we would reverse
 The scheme ourselves have spun,
 And what we made to curse
 We now would lean upon,
 And feign kind Gods who perfect what man vainly tries.

Look, the world tempts our eye,
 And we would know it all!
 We map the starry sky,
 We mine this earthen ball,
 We measure the sea-tides, we number the sea-sands ...

But still, as we proceed
 The mass swells more and more
 Of volumes yet to read,
 Of secrets yet to explore.
 Our hair grows grey, our eyes are dimm'd, our heat is tamed;

We rest our faculties,
 And thus address the Gods.
 "True science if there is,

It stays in your abodes!
 Man's measures cannot mete the immeasurable All ..."

Fools! That in man's brief term
 He cannot all things view,
 Affords no ground to affirm
 That there are Gods who do;
 Nor does being weary prove that he has where to rest.⁶

Nevertheless, though the thoughts here expressed are such as one would expect a believer in evolution to hold, and such as a large number of contemporary believers in evolution did hold - though Arnold himself was doubtless aware around 1850, as were Tennyson and Browning, of evolutionary theories of one kind and another - these lines do not directly imply belief in evolution. Still less do they attribute Empedocles'/Arnold's doubts and disillusion to any such belief. Arnold and Clough together with FitzGerald and Thomson, serve to remind us that the nineteenth century held more threats to faith than Darwinism or evolution.

The agnostic pessimism of Thomas Hardy is so well known as scarcely to need illustration. But it expresses itself in a variety of modes or myths, and some examination and analysis of these will be helpful before considering their debt or relationship to Darwinism or to any other philosophical framework. Unfortunately, each of Hardy's published collections of poems is something of a rag-bag of old and new, with, on his own admission, only a preportion of the old dated so as to distinguish it from the new. So only in a fairly

general sense is it possible to draw conclusions about the chronology of the poetic means he uses to express his beliefs.

Even in his earliest poems the gloom or pessimism seldom abates and is often severe. In a non-philosophical early poem, Neutral Tones (1867), we see how easily Hardy wears a mood of grey dejection, and how effectively he enrols nature in its support.

We stood by a pond that winter day,
And the sun was white, as though chidden of God,
And a few leaves lay on the starving sod;
- They had fallen from an ash, and were gray.

Your eyes on me were as eyes that rove
Over tedious riddles of years ago;
And some words played between us to and fro
On which lost the more by our love.

The smile on your mouth was the deadest thing
Alive enough to have strength to die;
And a grin of bitterness swept thereby
Like an ominous bird a-wing ...

Since then, keen lessons that love deceives,
And wrings with wrong, have shaped to me
Your face, and the God-curst sun, and a tree,
And a pond edged with grayish leaves.⁷

In his more generalised statements of pessimism, he more than once echoes Sophocles' "Not to be born is best", as here in the opening stanza of To an Unknown Pauper Child (published 1902).

Breathe not, hid Heart: cease silently,
And though thy birth-hour beckons thee,
Sleep the long sleep:
The Doomsters heap
Travails and teens around us here,
And Time-wraiths turn our songsingings to fear.⁸

And of one irrevocably born but nearing death's release, Hardy would agree with Shakespeare and Kent that "he hates him/That would upon the rack of this tough world/Stretch him out longer", as in After the Last Breath (1904).

There's no more to be done, or feared, or hoped;
None now need watch, speak low, and list, and tire;
No irksome crease outsmoothed, no pillow sloped
Does she require.

Blankly we gaze. We are free to go or stay;
Our morrow's anxious plans have missed their aim;
Whether we leave to-night or wait till day
Counts as the same.

The lettered vessels of medicaments
Seem asking wherefore we have set them here;
Each palliative its silly face presents
As useless gear.

And yet we find that something savours well;
We note a numb relief withheld before;
Our well-beloved is prisoner in the cell
Of Time no more.

We see by littles now the deft achievement
Whereby she has escaped the Wrongers all,
In view of which our momentary bereavement
Outshapes but small.⁹

Naturally enough, therefore, death will hold no terrors for the living, if minded like Hardy.

Black is night's cope
But death will not appal
One who, past doubtings all,
Waits in unhope.¹⁰

What are the reasons Hardy gives for this extreme gloom? The immediate one is that man is too highly developed for his environment. Mrs. Hardy, in The Life of Thomas Hardy, quotes a note he made to this

effect in 1889.

April 7. A woeful fact - that the human race is too extremely developed for its corporeal conditions, the nerves being evolved to an activity abnormal in such an environment. Even the higher animals are in excess in this respect. It may be questioned if Nature, or what we call Nature, so far back as when she crossed the line from invertebrates to vertebrates, did not exceed her mission. This planet does not supply the materials for happiness to higher existences. Other planets may, though one can hardly see how.¹¹

The same thought is expressed at various points in The Dynasts, and in the two poems Before Life and After (published 1909), which is quoted below, and The Aërolite (published 1925).

A time there was - as one may guess
And as, indeed, earth's testimones tell -
Before the birth of consciousness,
When all went well.

None suffered sickness, love, or loss,
None knew regret, starved hope, or heart-burnings;
None cared whatever crash or loss
Brought wrack to things.

If something ceased, no tongue bewailed,
If something winced and waned, no heart was wrung;
If brightness dimmed, and dark prevailed,
No sense was stung.

But the disease of feeling germed,
And primal rightness took the tinct of wrong;
Ere nescience shall be reaffirmed
How long, how long?¹²

More fundamentally, however, as the cause of this immediate cause, someone or something is to blame that "feeling" should be a "disease". One of the earliest answers to this problem, the sonnet Hap (1866), though technically personifying "Casualty" and "Time" as "purblind

Doomsters", is strongly Darwinian and almost completely impersonal in tone, rejecting any idea of a "vengeful" or vindictive "god".

If but some vengeful god would call to me
From up the sky, and laugh: "Thou suffering thing,
Know that thy sorrow is my ecstasy,
That thy love's loss is my hate's profiting!"

Then would I bear it, clench myself, and die,
Steeled by the sense of ire unmerited;
Half-eased in that a Powerfuller than I
Had willed and meted me the tears I shed.

But not so. How arrives it joy lies slain,
And why unblooms the best hope ever sown?
- Crass Casualty obstructs the sun and rain,
And dicing Time for gladness casts a moan ...
These purblind Doomsters had as readily strown
Blisses about my pilgrimage as pain.¹³

One would do well to remember, in considering other examples of personification in Hardy's poems, how deliberately depersonalised are these two "Doomsters". Thus the element of vindictiveness attributed to the same figure of "Time" in a line like "That Sportsman Time but rears his brood to kill", from She, to Him I (1866),¹⁴ is almost certainly fortuitous and not intended to form part of a coherent reading of the universe. The same is probably true even of the more extended picture, in the following paragraph from A Pair of Blue Eyes (1873), where Nature is by turns, capriciously, generous and vindictive.

To those musing weather-beaten West-country folk who pass the greater part of their days and nights out of doors, Nature seems to have moods in other than a poetic sense: predilections for certain deeds at certain times, without any apparent law to govern or season to account for them. She is read as a person with a curious temper;

as one who does not scatter kindnesses and cruelties alternately, impartially, and in order, but heartless severities or overwhelming generousities in lawless caprice. Man's case is always that of the prodigal's favourite or the miser's pensioner. In her unfriendly moments there seems a feline fun in her tricks, begotten by a foretaste of her pleasure in swallowing the victim.¹⁵

It is tempting to take the element of lawlessness as Hardy's reading of the ways of Nature, and the capricious, personal or feline element as the interpretation placed upon things by the "West-country folk" of whom he is writing. But the passage does illustrate a difficulty experienced by Hardy throughout his writings in avoiding a contradiction between his intellectual interpretation of the evidence presented by the universe, that all things are governed by wholly impersonal and therefore wholly irresponsible processes and laws, and his emotional response of indignation at undeserved suffering - an indignation which needed someone or at least something to blame.

Another early poem, Discouragement (1863-7), resorts to a kind of Manichean dualism, attributing the "overwhelming generousities" to Mother Nature, and the "heartless severities" to "her unfaithful lord" (cf. Doom and She, p. 369).

To see the Mother, naturing Nature, stand
All racked and wrung by her unfaithful lord,
Her hopes dismayed by his defiling hand,
Her passioned plans for bloom and beauty marred.

Where she would mint a perfect mould, an ill;
Where she would don divinest hues, a stain,
Over her purposed genial hour a chill,
Upon her charm of flawless flesh a blain:

Her loves dependent on a feature's trim,
 A whole life's circumstance on hap of birth,
 A soul's direction on a body's whim,
 Eternal Heaven upon a day of Earth,
 Is frost to flower of heroism and worth,
 And fosterer of visions ghastr and grim.¹⁶

The element of change is almost as strong as in Hap.

A number of Hardy's earlier poems use this conventional personification of Mother Nature, though it is not usually the Meredithian or prodigal aspect to her character which is stressed. More often she is held responsible, as in the extract from A Pair of Blue Eyes, for the ills which afflict us, though in most cases this is as a result of her indifference or her unawareness of the effect of her actions, rather than her sadistic enjoyment of our sufferings. Such personification is in fact much nearer to the spirit of Hap. Written in the same year, At a Bridal (1866) is actually subtitled "Nature's Indifference". And from the 1902 volume, four obviously closely related poems speak of Nature's blindness to what she does. The Lacking Sense even implies this in the title.

"O Time, whence comes the Mother's moody look amid her labours,
 As of one who all unwittingly has wounded where she loves? ...

"And how explains thy Ancient Mind her crimes upon her Creatures,
 These fallings from her fair beginnings, woundings where she loves,
 Into her would-be perfect motions, modes, effects, and features
 Admitting cramps, black humours, wan decay, and baleful blights,
 Distress into delights?"

- "Ah! knowest thou not her secret yet, her vainly
 veiled deficiency,
 Whence it comes that all unwittingly she wounds the lives
 she loves?
 That sightless are those orbs of hers? - which bar to
 her omniscience
 Brings those fearful unfulfilments, that red ravage through
 her zones
 Whereat all creation groans.

"She whispers it in each pathetic strenuous slow endeavour,
 When in mothering she unwittingly sets wounds on what
 she loves;
 Yet her primal doom pursues her, faultful, fatal is she
 ever;
 Though so deft and nigh to vision is her facile finger-touch
 That the seers marvel much.

"Deal, then, her groping skill no scorn, no note of malediction
 Not long on thee will press the hand that hurts the lives
 it loves;
 And while she plods dead-reckoning on, in darkness of
 affliction,
 Assist her where thy creaturely dependence can or may,
 For thou art of her clay."¹⁷

In this poem we are asked to admire the skill of Nature's almost-seeing fingers (in the same way as the purest Darwinian can hardly resist the suggestion of teleology when admiring some particularly ingenious mechanism of life), to withhold our blame from one who, as in Discouragement, loves us, and to assist her as we may - almost, it seems, out of pity. The Bullfinches merely chatter amongst themselves of how the faeries say of Mother Nature that she "falls a-drowse", yet "works on dreaming" with "groping hands".¹⁸ But The Sleep Worker, addressed to Nature herself, makes no excuses and escapes into no fantasy.

When wilt thou wake, O Mother, wake and see -
 As one who, held in trance, has laboured long
 By vacant rote and prepossession strong -
 The coils that thou hast wrought unwittingly;

Wherein have place, unrealized by thee,
 Fair growths, foul cankers, right enmeshed with wrong,
 Strange orchestras of victim-shriek and song,
 And curious blends of ache and ecstasy? -

Should that morn come, and show thy opened eyes
 All that Life's palpitating tissues feel,
 How wilt thou bear thyself in thy surprise? -

Wilt thou destroy, in one wild shock of shame,
 Thy whole high heaving firmamental frame,
 Or patiently adjust, amend, and heal?¹⁹

The remaining one of these four poems, Doom and She, adds a masculine figure, Doom, to the cast, and his is the major part of the blame, since lack of capacity to feel is patently more culpable, less congenial, than mere blindness. One is reminded of Discouragement, where Nature's "unfaithful lord" is presumably also Doom or Fate, and where Nature is even more clearly blameless.

There dwells a mighty pair -
 Slow, statuesque, intense -
 Amid the vague Immense:
 None can their chronicle declare,
 Nor why they be, nor whence.

Mother of all things made,
 Matchless in artistry,
 Unlit with sight is she. -
 And though her ever well-obeyed
 Vacant of feeling he.

The Matron mildly asks -
 A throb in every word -
 "Our clay-made creatures, lord,
 How fare they in their mortal tasks
 Upon Earth's bounded bord?

"The fate of those I bear,
 Dear lord, pray turn and view,
 And notify me true;
 Shapings that eyelessly I dare
 Maybe I would undo.

"Sometimes from lairs of life
 Methinks I catch a groan,
 Or multitudinous moan,
 As though I had schemed a world of strife,
 Working by touch alone."

"World-weaver!" he replies,
 "I scan all thy domain;
 But since nor joy nor pain
 It lies in me to recognize,
 Thy questionings are vain.

"World-weaver! what is Grief?
 And what are Right, and Wrong,
 And Feeling, that belong
 To creatures all who owe thee fief?
 Why is Weak worse than Strong?" ...

- Unanswered, curious, meek,
 She broods in sad surmise ...
 - Some say they ave heard her sighs
 On Alpine height or Polar peak
 When the night tempests rise.²⁰

The similarity between Discouragement and Doom and She, and the fact that in them Hardy uses the same personification of Nature or Mother Nature as he did in poems of the 1860's like At a Bridal, Her Dilemma (1866) and Discouragement, suggests a possibly fairly early date for these four poems. (Other poems in the 1902 volume are actually dated 1866, 1867, 1882, 1887, 1895-6, and 1897 - all from before the publication of the previous volume in 1898.) At the least, it indicates that Hardy's views in the 1860's and 1870's were not such as to have

precluded his writing poems like The Lacking Sense, The Sleep-Worker and Doom and She.

The next change in the dramatis personae of Hardy's mythology is much more marked than the introduction of a rather shadowy figure, Doom. Mother Nature is replaced by God. One would expect such a change to herald a lessening of emphasis on the impersonal, unknowing, unseeing, uncaring aspects of the Ultimate Power - an increase of his personal responsibility. And this indeed seems to be the case. In By the Earth's Corpse (published 1902) God is portrayed as having had periods of consciousness, and as being capable of regretting what he has let happen.

"O Lord, why grieveest Thou? -
 Since life has ceased to be
 Upon this globe, now cold
 As lunar land and sea,
 And humankind, and fowl, and fur
 Are gone eternally,
 All is the same to Thee as ere
 They knew mortality."

"O Time," replied the Lord,
 "Thou readest me ill, I ween;
 Were all the same, I should not grieve
 At that late earthly scene,
 Now blestly past - though planned by me
 With interest close and keen! -
 Nay, nay: things now are not the same
 As they have earlier been.

"Written indelibly
 On my eternal mind
 Are all the wrongs endured
 By Earth's poor patient kind,
 Which my too oft unconscious hand
 Let enter undesigned,
 No god can cancel deeds foredone,
 Or the old coils unwind!

"As when, in Noë's days,
 I whelmed the plains with sea,
 So at this last, when flesh
 And herb but fossils be,
 And, all extinct, their piteous dust
 Revolves obliviously,
 That I made Earth, and life, and man,
 It still repenteth me!"²¹

Similarly, in God's Education (published 1909), God seems momentarily willing to learn of one of his creatures.

Said I: "We call that cruelty -
 We, your poor mortal kind."
 He mused. "The thought is new to me.
 Forsooth, though I men's master be,
 Theirs is the teaching mind!"²²

In some ways the least unhopeful of all these poems in which God is the central character, in spite of its title, is God-Forgotten, which follows on immediately in the 1902 volume from The Sleep-Worker and The Bullfinches. Here God is not only conscious and in benevolent touch with all his other inhabited "orbs", and is not only willing, having been informed of Earth's sufferings, to put an end to them, but was not entirely to blame for the initial estrangement. God lost interest but man it was, as in the Christian account of things, who cut himself off from God.

I towered far, and lo! I stood within
 The presence of the Lord Most High,
 Sent thither by the sons of Earth, to win
 Some answer to their cry.

- "The Earth, sayest thou? The Human Race?
 By me created? Sad its lot?
 Nay: I have no remembrance of such place:
 Such world I fashioned not." -

- "O Lord, forgive me when I say
 Thou spakest the word that made it all." -
 "The Earth of men - let me bethink me ... Yea!
 I dimly do recall

"Some tiny sphere I built long back
 (Mid millions of such shapes of mine)
 So named ... It perished, surely - not a wrack
 Remaining, or a sign?

"It lost my interest from the first,
 My aims therefor succeeding ill;
 Haply it died of doing as it durst?" -
 "Lord, it existeth still." -

"Dark, then, its life! For not a cry
 Of aught it bears do I now hear;
 Of its own act the threads were snapped whereby
 Its plaints had reached mine ear.

"It used to ask for gifts of good,
 Till came its severance, self-entailed,
 When sudden silence on that side ensued,
 And has till now prevailed.

"All other orbs have kept in touch;
 Their voicings reach me speedily:
 Thy people took upon them overmuch
 In sundering them from me!

"And it is strange - though sad enough -
 Earth's race should think that one whose call
 Frames, daily, shining spheres of flawless stuff
 Must heed their tainted ball! ...

"But sayest it is by pangs distraught,
 And strife, and silent suffering? -
 Sore grieved am I that injury should be wrought
 Even on so poor a thing!

"Thou shouldst have learnt that Not to Mend
 For Me could mean but Not to Know:
 Hence, Messengers! and straightway put an end
 To what men undergo." ...²³

Only the lines "It lost my interest from the start, / My aims therefor

succeeding ill" seem in fact to bear the authentic Hardy stamp, until, in the remaining stanza, Hardy reveals the whole episode to have been mere wishful-thinking fantasy.

Homing at dawn, I thought to see
 One of the Messengers standing by.
 - Oh, childish thought! ... Yet often it comes to me
 When trouble hovers nigh.

The implications of whichever mythology Hardy chooses to express his meaning can, it seems, change direction even within a single poem, and still more is this true from poem to poem. The Bedridden Peasant (subtitled "To an Unknowing God"), which follows God-Forgotten in the 1902 volume, assumes that it is in complete ignorance of what he does that God places men "In helpless bondage thus/To Time and Chance, and seem'st straightway/To think no more of us!"²⁴, and even closes with the lines "I'll praise Thee as were shown to me/The mercies Thou wouldst show!" New Year's Eve (1906) shows God momentarily puzzled by questions asked by his creatures which to him seem meaningless, before relapsing into unconsciousness.

Then he: "My labours - logicless -
 You may explain; not I:
 Sense-sealed, I have wrought, without a guess
 That I evolved a Consciousness
 To ask for reasons why.

"Strange that ephemeral creatures who
 By my own ordering are,
 Should see the shortness of my view,
 Use ethic tests I never knew,
 Or made provision for!"

He sank to raptness as of yore,
 And opening New Year's Day
 Wove it by rote as theretofore,
 And went on working evermore
 In his unweeting way.²⁵

There is none of the regret of By the Earth's Corpse, and none of the apparent willingness to learn of God's Education. And in A Dream Question (published 1909), the point of God's indifference to our suffering is so forcefully made that the question whether he knows whether we suffer need not arise.

He: "Save me from my friends, who deem
 That I care what my creatures say!
 Mouth as you list: sneer, rail, blaspheme,
 O manikin, the livelong day,
 Not one grief groan or pleasure gleam
 Will you increase or take away.

"Why things are thus, whoso derides,
 May well remain my secret still ..."²⁶

It is clear that in these poems Hardy is using the word "God" in a very private way - as a slightly varying alternative, in fact, to Mother Nature (or the Immanent Will) qua personification of the very real, and largely material, forces at work in the universe. This is made clear by comparing them with God's Funeral (1908-10), in which Hardy half-regretfully witnesses the funeral of the more conventional, fabricated, God of man's religions, or with A Plaint to Man (1909-10).

When you slowly emerged from the den of Time,
 And gained percipience as you grew,
 And fleshed you fair out of shapeless slime,

Wherefore, O Man, did there come to you
 The unhappy need of creating me -
 A form like your own - for praying to? ...

And now that I dwindle day by day
 Beneath the deicide eyes of seers
 In a light that will not let me stay,

And tomorrow the whole of me disappears,
 The truth should be told, and the fact be faced
 That had best been faced in earlier years:

The fact of life with dependence placed
 On the human heart's resource alone,
 In brotherhood bonded close and graced

With loving-kindness fully blown,
 And visioned help unsought, unknown.²⁷

Perhaps the best example of variations on the theme of hopelessness reflected in variations of mythology is to be found in a single poem, the often-quoted Nature's Questioning (published 1898).

When I look forth at dawning, pool,
 Field, flock, and lonely tree,
 All seem to gaze at me
 Like chastened children sitting silent in a school;

Their faces dulled, constrained, and worn,
 As though the master's ways
 Through the long teaching days
 Had cowed them till their early zest was overborne.

Upon them stirs in lippings mere
 (As if once clear in call,
 But now scarce breathed at all) -
 "We wonder, ever wonder, why we find us here!

"Has some Vast Imbecility,
 Mighty to build and blend,
 But impotent to tend,
 Framed us in jest, and left us now to hazardry?

"Or come we of an Automaton
 Unconscious of our pains? ...
 Or are we live remains
 Of Godhead dying downwards, brain and eye now gone?

"Or is it that some high Plan betides,
 As yet not understood,
 Of Evil stormed by Good,
 We the Forlorn Hope over which Achievement strides?"

Thus things around. No answerer I ...
 Meanwhile the winds, and rains,
 And Earth's old glooms and pains
 Are still the same, and Life and Death are neighbours nigh.²⁸

The poem has hints of almost all those we have hitherto examined: despair is reflected in outer nature, as in Neutral Tones; there is the powerlessness to maintain an initial impetus, the "fallings from her fair beginnings" of The Lacking Sense, in the "Vast Imbecility/Mighty to build and blend,/But impotent to tend"; there is a touch of the heartlessness of She, to Him in "Framed us in jest"; there is the unconsciousness of "our pains" found in Doom and She, The Sleep-Worker, The Bedridden Peasant and others; there is the initial "interest close and keen" of a God who later forgets, as already encountered in By the Earth's Corpse, in "Godhead dying downwards"; and finally there is even the possibility of a slow evolutionary triumph of good over evil, a suggestion picked up here and there in later poems.

This is a poem one would like to date more precisely than is possible, since there is also a clear foreshadowing, in the "Vast

Imbecility" and "Automaton/Unconscious of our pains", of the "Immanent Will" or neuter "It" which in The Dynasts and a few later poems becomes Hardy's chosen means of personifying the creative and responsible powers of the universe. Because of this, one is inclined to assume that the poem was written not long before it was published (in the late 1880's, if not the 1890's), by which time Hardy had read some Schopenhauer, from whom he seems to have derived this final mode of mythologising his beliefs. But the poem's clear affinities with those which probably preceded it, as well as those which undoubtedly followed it, emphasise the continuity of Hardy's thought, and make clearer the limits of Hardy's indebtedness to Schopenhauer.

Some overlap there undoubtedly was between the various myths so far encountered, but it seems as if Hardy began by personifying the creative and sustaining powers of the Universe as Nature, or the Great Dame, then in a number of poems fell back on the term God, and finally arrived at the impersonal, Schopenhauerean figure of a neuter Immanent Will. Certainly The Dynasts and such shorter poems as use this last figure are later than most of the poems hitherto examined. Moreover, of all Hardy's mythologies of cosmic cause and effect, it is this last which is rightly the one most often and most firmly associated with his name. It most satisfactorily expresses what Hardy feels about the universe, and in The Dynasts it receives a much more extended treatment than any of the others do

anywhere else in Hardy's writings.

Indeed, It, the Immanent Will, is the central and determining concept for the whole of Hardy's vast dramatic epic. The human actors, whether Dorset yokels, cabinet ministers, or Napoleon himself, and the entire proliferating spectacle of the Napoleonic wars, are reduced to the status of a puppet play which we are enabled to witness from the viewpoint of certain presiding Immortal Spirits. Yet even these Spirits, whether the Spirit of Pity, the Spirit of Irony, or the Spirit of the Years, are in the last analysis only the helpless mouthpieces for differing attitudes to what they are witnessing. Both the human actors and they themselves are mere manifestations of that which is mindlessly determined and controlled by the Immanent Will.

Yet the basis of Hardy's philosophy - the unknowingness and/or indifference of that which controls the universe - remains the same, with slight variations and perhaps a deepening shift of emphasis on the deterministic roots to his pessimism, from the early poems like Hap to its culmination in The Dynasts. Hardy admits as much when writing to someone anxious to make a study of the beliefs expressed in The Dynasts at a time when only the first two parts had been completed.

The third part will probably not be ready till the end of this or the beginning of next year; so that I have no proofs as yet. I do not think, however, that they would help you much in your proposed article. The first and

second parts already published, and some of the poems in Poems of the Past and Present, exhibit fairly enough the whole philosophy.²⁹

In fact only ~~'ATNQETQ DEQ~~ (To the Unknown God) of the relevant poems in Poems of the Past and Present is openly Schopenhauerean in phraseology, referring to the "Willer masked and dumb". The others, as already indicated, talk of God, Nature and Doom. Yet even the imagery of such poems is in some cases notably similar to ^{that of} later ones which talk of the Will, or It. Lines from Part I of The Dynasts (1904) such as

... like a knitter drowsed,
Whose fingers play in skilled unmindfulness,
The Will has woven with an absent heed
Since life first was; and ever so will weave.³⁰

can be matched, for instance, by "Why weaves she not her world-webs" and "Though so deft and nigh to vision is her facile finger-touch"³¹ from The Lacking Sense, or, from The Bullfinches:

Busy in her (Nature's) handsome house
Known as Space, she falls a-drowse;
Yet, in seeming, works on dreaming,
While beneath her groping hands
Fiends make havoc in her bands.³²

or, from New Year's Eve:

He (God) sank to raptness as of yore,
And opening New Year's Day
Wove it by rote as theretofore,
And went on working evermore
In his unweeing way.³³

It might be thought that, just as the change from Mother Nature to God seemed to lead, in certain poems, to an increase of awareness

and a greater sense of responsibility on the part of the powers that be, so the change from God to the more explicitly impersonal Will might lead to a decrease of awareness and responsibility. And in The Blow (published 1917) this seems to be the case, since Hardy is actually glad to be able to think of the blow in question as the work of an unconscious agent rather than of a fellow man.

That no man schemed it is my hope -
 Yea, that it fell by will and scope
 Of That which some enthrone,
 And for whose meaning myriads grope

For I would not that of my kind
 There should, of his unbiassed mind,
 Have been one known
 Who such a stroke could have designed,

Since it would augur works and ways
 Below the lowest that man assays
 To have hurled that stone
 Into the sunshine of our days!

And if it prove that no man did,
 And that the Inscrutable, the Hid,
 Was cause alone
 Of this foul crash our lives amid,

I'll go in due time, and forget
 In some deep graveyard's oubliette
 The thing whereof I groan,
 And cease from troubling, thankful yet

Time's finger should have stretched to show
 No aimful author's was the blow
 That swept us prone,
 But the Immanent Doer's That doth not know ...

However, the closing lines hint that even "It", like Nature in Doom and She or God in By the Earth's Corpse and God's Education,

may one day be sorry for what It has done.

Which in some age unguessed of us
 May lift Its blinding incubus,
 And see, and own:
 "It grieves me I did thus and thus!"³⁴

This is in fact what Hardy regards as the distinguishing mark of his particular version of the Immanent, or Universal and unconscious, Will: that unconsciously It perhaps strives towards, and may one day attain, consciousness. He makes this clear in a post-script to a letter to Edward Clodd in 1908.

P.S. The idea of the Unconscious Will becoming conscious with the flux of time, is also new, I think, whatever it may be worth. At any rate I have never met with it anywhere. T.H.³⁵

The earliest expression of such a hope occurs in the poem

ἌΓΝΩΣΤΩ, ΘΕΩ, (To the Unknown God) (1901).

Long have I framed weak phantasies of Thee,
 O Willer masked and dumb!
 Who makest Life become, -
 As though by labouring all-unknowingly,
 Like one whom reveries numb.

How much of consciousness informs Thy will,
 Thy biddings, as if blind,
 Of death-inducing kind,
 Nought shows to us ephemeral ones who fill
 But moments in Thy mind.

Perhaps Thy ancient rote-restricted ways
 Thy ripening rule transcends;
 That listless effort tends
 To grow percipient with advance of days,
 And with percipience mends.

For, in unwonted purlieus, far and nigh,
 At whiles or short or long,
 May be discerned a wrong

Dying as of self-slaughter; whereat I
 Would raise my voice in song.³⁶

The same thought recurs in the After Scene of Part III of The Dynasts (1908), where the Spirit of the Pities argues that the dawn of consciousness in man may be the herald of an eventual spread of consciousness to the Will as a whole.

Thou arguest still the Inadvertant Mind. -
 But, even so, shall blankness be for aye?
 Men gained cognition with the flux of time,
 And wherefore not the Force informing them,
 When far-ranged aions past all fathoming
 Shall have swung by, and stand as backward years?³⁷

The closing lines of the After Scene and the whole work seem designed, moreover, to leave us with such a hope ringing in our ears.

SEMICHORUS I OF THE PITIES

Nay; - shall not Its blindness break?
 Yea, must not It's heart awake,
 Promptly tending
 To Its mending
 In a genial germinating purpose, and for loving-kindness' sake?

SEMICHORUS II

Should It never
 Curb or cure
 Aught whatever
 Those endure
 Whom It quickens, let them darkle to extinction swift
 and sure.

CHORUS

But - a stirring thrills the air
 Like to sounds of joyance there
 That the rages
 Of the ages

Shall be cancelled, and deliverance offered from the
 darts that were,
 Consciousness the Will informing, till It fashion all
 things fair!³⁸

Admittedly, Mrs. Hardy, writing of Hardy's disillusion at
 the outbreak of war in 1914, seems to indicate he lost any such
 ultimate hope.

It may be added here that the war destroyed all Hardy's
 belief in the gradual ennoblement of man, a belief he had
 held for many years, as is shown by poems like "The Sick
 Battle-God", and others. He said he would probably not
 have ended The Dynasts as he did end it if he could have
 foreseen what was going to happen within a few years.

Moreover, the war gave the coup de grace to any
 conception he may have nourished of a fundamental ultimate
 Wisdom at the back of things. With his views on necessi-
 tation, or at most a very limited free will, events seemed
 to show him that a fancy he had often held and expressed,
 that the never-ending push of the Universe was an
 unpurposeful and irresponsible groping in the direction of
 the least resistance, might possibly be the real truth.³⁹

And a late poem, We are Getting to the End (published 1928), echoes
 such loss of any vestigial hope.

We are getting to the end of visioning
 The impossible within this universe,
 Such as that better whiles may follow worse,
 And that our race may mend by reasoning.

We know that even as larks in cages sing
 Unthoughtful of deliverance from the curse
 That holds them lifelong in a latticed hearse,
 We ply spasmodically our pleasuring.

And that when nations set them to lay waste
 Their neighbours' heritage by foot and horse,
 And hack their pleasant plains in festering seams,
 They may again, - not warely, or from taste,
 But tickled mad by some demonic force. -
 Yes. We are getting to the end of dreams!⁴⁰

Yet the mood was not constant. A Philosophical Fantasy (1920 and 1926) is lighter-hearted even in its rhythms, and in it Hardy makes the "Causer" reply to man's questionings:

Aye, to human tribes nor kindness
Nor love I've given, but mindlessness,
Which state, though far from ending,
May nevertheless be mending.⁴¹

In any case, within a time-scale such as Hardy must have been envisaging for the eventual evolution of consciousness in the Will, there is scope for very many set-backs and relapsings into despair, without these necessarily affecting the ultimate outcome.

An important aspect of the Will is its immanence. This idea is repeatedly referred to in The Dynasts ("The Immanent, that urgeth all/Rules what may or may not befall"⁴²) and elsewhere ("the all-immanent Will"⁴³ in The Unborn (1905); "the immanent Doer's That doth not know"⁴⁴ in The Blow). It is developed at much greater length early in The Dynasts, in a passage where the Will is conceived of as a vast brain, within whose very texture and workings man is inextricably caught up.

SPIRIT OF THE PITIES

Amid this scene of bodies substantive
Strange waves I sight like winds grown visible,
Which bear men's forms on their innumerable coils,
Twining and serpentine round and through.
Also retracting threads like gossamers -
Except in being irresistible -
Which complicate with some, and balance all.

SPIRIT OF THE YEARS

These are the Prime Volitions, - fibrils, veins,
 Will-tissues, nerves, and pulses of the Cause,
 That heave throughout the Earth's compositure,
 Their sum is like the lobule of a Brain
 Evolving always that it wots not of;
 A Brain whose whole connotes the Everywhere,
 And whose procedure may but be discerned
 By phantom eyes like ours; the while unguessed
 Of those it stirs, who (even as ye do) dream
 Their motions free, their orderings supreme;
 Each life apart from each, with power to mete
 Its own days measures; balanced, self-complete;
 Though they subsist but atoms of the One
 Labouring through all, divisible from none ...45

Such lines, in a manner unhappily reminiscent of Erasmus Darwin's attempts to describe the workings of body and mind in The Temple of Life, show us Hardy struggling to render palpable and versifiable that which, intellectually, he must insist on as remaining abstract - forces operating through processes.

Just how abstract and process-like Hardy conceived of the Will as being is made clear in a letter he wrote in 1907.

I quite agree with you in holding that the word "Will" does not perfectly fit the idea to be conveyed - a vague thrusting or urging internal force in no predetermined direction. But it has become accepted in philosophy for want of a better, and is hardly likely to be supplanted by another, unless a highly appropriate one could be found, which I doubt. The word that you suggest - Impulse - seems to me to imply a driving power behind it; also a spasmodic movement unlike that of, say, the tendency of an ape to become a man and other such processes.⁴⁶

There are a number of paradoxes, contradictions and examples of muddled thought inherent in Hardy's portrayal of this Immanent

Will, some of them resulting from this very insistence on its immanence. In the first place, we are asked to believe that man is at one and the same time a part of, and a plaything of, the Will. This is actually discussed by the witnessing Spirits in The Dynasts.

SPIRIT OF THE YEARS

'Tis not in me to feel with, or against
 These flesh hinged mannikins Its hand upwinds
 To click-clack off Its preadjusted laws;
 But only through my centuries to behold
 Their aspects, and their movements, and their mould.

SPIRIT OF THE PITIES

They are shapes that bleed, mere mannikins or no,
 And each has parcel in the total Will.

SPIRIT OF THE YEARS

Which overrides them as a whole its parts
 In other entities.⁴⁷

The contradiction here is merely the result of the imagery used, a toy-maker or winder-up of toys being an inappropriate image to use for That which is immanent in the toys it controls. Either way, as an integral part of the Will, or as something the Will plays with, man has no freedom and no individual worth. Yet elsewhere, from time to time, this is something Hardy again paradoxically insists on. In To Meet, or Otherwise, (published 1914), the lover maintains the worthwhileness of the trivial, human, voluntary action of meeting his beloved.

By briefest meeting something sure is won;
 It will have been:
 Nor God nor Demon can undo the done,
 Unsight the seen,
 Make muted music be as unbegun,
 Though things terrene
 Groan in their bondage till oblivion supervene.

So, to the one long-sweeping symphony
 From times remote
 Till now, of human tenderness, shall we
 Supply one note,
 Small and untraced, yet that will ever be
 Somewhere afloat
 Amid the spheres, as part of sick Life's antidote.⁴⁸

And in At Castle Boterel (1913) the mere memory of a walk together
 is worth preserving.

Primaeval rocks form the road's steep border,
 And much have they faced there, first and last,
 Of the transitory in Earth's long order;
 But what they record in colour and cast
 Is - that we two passed.

And to me, though Time's unflinching rigour,
 In mindless rote, has ruled from sight
 The substance now, one phantom figure
 Remains on the slope, as when that night
 Saw us alight.⁴⁹

Hardy's explanation of how human beings can, while remaining
 part of the Immanent Will, still be free to do the little things that
 make them individual human beings, is contained in the same letter
 quoted from above.

This theory, too, seems to me to settle the question of
 Free-will v. Necessity. The will of a man is, according
 to it, neither wholly free nor wholly unfree. When swayed
 by the Universal Will (which he mostly must be as a
 subservient part of it) he is not individually free;
 but whenever it happens that all the rest of the Great
 Will is in equilibrium the minute portion called one

person's will is free, just as a performer's fingers are free to go on playing the pianoforte of themselves when he talks or thinks of something else and the head does not rule them.⁵⁰

As a resolution of this recurring dilemma, this is neither more nor less convincing than most others.

A more persistent and troublesome source of apparent contradiction is the very act of trying to personify that which is essentially impersonal - and this applies, as intimated earlier, whether the figure resulting from the personification be that of Nature, God, or the Will. (The outcome is no happier, as seen above, if the attempt to "embody" that which Hardy means by the Will take the form of describing It as a gigantic brain.) An unimportant instance of this is the way on the one hand the Will is blind and purposeless, as asserted in The Blow and endlessly reiterated in The Dynasts, and yet on the other hand all things are foreordained and determined by the Will. For instance, in The Convergence of the Twain (1912), as implied by the very title, the Titanic and its iceberg have been destined for one another since birth.

Well: while was fashioning
This creature of cleaving wing,
The Immanent Will that stirs and urges everything

Prepared a sinister mate
For her - so gaily great -
A Shape of Ice, for the time far and dissociate.⁵¹

Obviously, according to strict materialistic determinism, events can be predetermined without there being any suggestion of purpose or plan. But if a personality foreordains something, then plan and

purpose are implied. And Hardy has personified, has made a person out of, the impersonal forces and processes of nature.

More seriously, if the Will is wholly unconscious - the mere personification of just such material processes - then, as is insisted on time and again, particularly in The Dynasts, it cannot be held responsible, cannot be blamed, for what it does.

Nay, blame not! For what judgment can ye blame? -
 In that immense unweeting Mind is shown
 One far above forethinking; processive,
 Rapt, superconscious; a Clairvoyancy
 That knows not what It knows, yet works therewith. -
 The cognizance ye mourn, Life's doom to feel,
 If I report it meetly, came unmeant,
 Emerging with blind gropes from impercipient
 By listless sequence - luckless, tragic Chance
 In your more human tongue.⁵²

Yet blamed It undoubtedly is. The defence of the Will just quoted, by the Spirit of the Years, is provoked by a long and impassioned attack on the Will by the Spirit of the Pities, who quotes Sophocles in his support (p.394). And there is no doubt, whatever his intellectual views may have been, where Hardy's sympathies lay as between the Spirits of the Pities and of the Years. Again in Sophoclean vein, the famous remark at the close of Tess of the d'Urbervilles about the "President of the Immortals" reflects the mixed compassion and indignation which throughout his novels Hardy feels in the face of human suffering. Most succinct of all is this note made in 1888.

He, she, had blundered; but not as the Prime Cause had blundered. He, she, had sinned; but not as the Prime Cause had sinned. He, she, was ashamed and sorry; but

not as the Prime Cause would be ashamed and sorry if it knew.⁵³

Finally, there is confusion and obscurity arising out of the idea that this personification of the material forces of the universe may be slowly becoming conscious. This Hardy refers to again in the letter already several times quoted.

That the Unconscious Will of the Universe is growing aware of Itself I believe I may claim as my own idea solely - at which I arrived by reflecting that what has already taken place in a fraction of the whole (i.e. so much of the world as has become conscious) is likely to take place in the mass; and there being no Will outside the mass - that is, the Universe - the whole Will becomes conscious thereby: and ultimately, it is to be hoped, sympathetic.⁵⁴

It is plain from this extract that it is the dawn of consciousness in man which has prompted the idea, and presumably set the pattern. What, in the strictly materialistic framework of the universe which Hardy professes to accept, can this mean except that more and more living things shall have consciousness and have it more abundantly? What it comes down to in the end, therefore, is that man may look forward to a time when he himself is increasingly able to rectify the ills he must at present suffer - a belief in human progress, in fact. But to insist that the whole Will (a personification, largely if not entirely for poetic purposes, of the material forces and processes of the universe) become conscious is either to deal in the mumbo-jumbo of nuclear energy and volcanoes and tidal waves and bacteria and plants partaking in consciousness, or to imply that

the Will is evolving from something wholly immanent in the physical world into something transcendent. Again, to maintain that the Will, having gained consciousness, will be sorry for what it has done, is either to postulate the emergence of an enduring, more than purely figurative, and presumably transcendent personality capable of accepting responsibility for what It did in Its unconscious and immanent infancy, or to pull faces out of the train window for the relief it affords one's feelings. Partial, ephemeral, fragmented human consciousness, and any conceivable or analogous extension to consciousness of this order, can have no such retrospective sense of responsibility.

It should be added that Hardy himself was aware that there were discrepancies in his thought - particularly in The Dynasts. "It is my misfortune," he wrote on one occasion, "that people will treat all my mood-dictated writing as a single scientific theory."⁵⁵ And Mrs. Hardy reports him as feeling that, even if there were discrepancies in the 'Spirits' philosophy, these were "immaterial where the work was offered as a poem and not a system of thought".⁵⁶

This, then, is Hardy's philosophy so far as it can be deduced from his poems. Life is in the main harsh and cruel, and man is relatively powerless to change his destiny. Certain early poems, and the plots of many of his novels, suggest that the deciding factor is sheer chance. Later Hardy changed from believing in Chance to believing in Necessity as the controlling factor in the

universe. By this time he had already begun writing those poems of his in which Nature, or God, or the Immanent Will controls the affairs of the universe, but is either powerless to order things better, or, more usually, is unaware of the suffering She, He or It is responsible for inflicting on humanity. Sometimes there is a suggestion that She, He or It would remain indifferent even if this were known; at other times She, He or It is credited with the capacity for compunction if or when awareness dawns. In the case of the Immanent Will, what is being personified is clearly the powers and processes of the physical universe, so we ourselves are a part of It. This, since we have attained to consciousness, is even adduced as a ground for hope that the Will as a whole is evolving towards consciousness, and some expectation is expressed that a conscious Will will improve on Its past blunders.

It remains to examine the most important influences which went to shape Hardy's view of the universe - the likely sources of his beliefs. He was, we know, a sensitive if probably fairly happy child, retaining to the last a vivid memory of his first encounter with death.

Also he remembered, perhaps a little later than this (his earliest recollection), being in the garden at Brockhampton with his father on a bitterly cold winter day. They noticed a fieldfare, half-frozen, and the father took up a stone idly and threw it at the bird, possibly not meaning to hit it. The fieldfare fell dead, and the child Thomas picked it up and it was as light as a feather, all skin and bone, practically starved. He said he had never forgotten how the body of the fieldfare felt in his hand: the memory had

always haunted him.⁵⁷

There was also, perhaps, a streak of the morbid in his youthful character, since his wife records how he once watched a hanging through a telescope.⁵⁸

He was only nineteen when The Origin of Species was published, and working as a pupil in an architect's office in Dorchester. His reading at this time consisted as much as anything of the New Testament in Greek, and the Greek dramatists - particularly Sophocles - in translation and in the original. The former he had undertaken largely in order to be able to defend the baptismal practice of the Church of England (of which he was still a devout member) in arguments with certain well-informed young Baptist friends. His faith was still not imperilled. Much more to the point of this chapter are the plays of Aeschylus and Sophocles. For Hardy came profoundly under their influence during these impressionable early years, and even at one time considered abandoning architecture and studying Classics at Cambridge. It is often forgotten how much of his later critical attitude towards the ultimate powers of the universe he may have owed to these early Greeks, and in particular to Sophocles. As W. R. Rutland points out, in his study of Thomas Hardy, it is from Sophocles rather than Schopenhauer that Hardy quotes in the following lines from The Dynasts.

But out of tune the Mode and meritless
That quickens sense in shapes whom, thou hast said,
Necessitation sways! A life there was

Among these self-same frail ones - Sophocles -
 Who visioned it too clearly, even the while
 He dubbed the Will "the gods." Truly said he,
 "Such gross injustice to their own creation
 Burdens the time with mournfulness for us,
 And for themselves with shame."⁵⁹

Hardy remained a convinced and practising Christian well after his move to London in 1862. In 1865 he even considered going to university and taking orders, since he felt he could not continue to practise architecture and at the same time write poetry, whereas there were many precedents for being a country parson and a poet. The call may have been to be a poet rather than a parson, but at least he could contemplate becoming the latter with relative equanimity. However, the self-examination occasioned by such tentative plans to be ordained may have revealed to Hardy things about himself and the state of his beliefs which he had previously been unwilling to acknowledge. For over the next year or two he lost a faith he was never to find again. Most of the poems known to have been written in 1866-7, including, notably, the sonnet Hap, indicate this fairly clearly. Hap also shows how Darwinian was the view of life which succeeded the Christian one.

Before considering Darwin's influence on Hardy more closely, however, it would be well to note the other influences at work on him during these and the immediately succeeding years. As well as Sophocles, Hardy had read before leaving Dorchester the notorious Essays and Reviews, and discussed the book with his friend Horace

Moule, the author and reviewer. Mrs. Hardy reports him as being much impressed by the ideas he found therein.⁶⁰

Another author he was very familiar with was J. S. Mill. Many years later, in a letter to The Times on the centenary of Mill's birth. Hardy referred to him as "one of the profoundest thinkers of the last century", and went on to describe listening to him campaigning for the Westminster seat.

It was a day in 1865, about three in the afternoon, during Mill's candidature for Westminster. The hustings had been erected in Covent Garden, near the front of St. Paul's Church; and when I - a young man living in London - drew near to the spot, Mill was speaking. The appearance of the author of the treatise On Liberty (which we students of that date knew almost by heart) was so different from the look of persons who usually address crowds in the open air that it held the attention of people for whom such a gathering in itself had little interest. Yet it was, primarily, that of a man out of place. The religious sincerity of his speech was jarred on by his environment - a group on the hustings who, with few exceptions, did not care to understand him fully, and a crowd below who could not ... The picture of him as personified earnestness surrounded for the most part by careless curiosity derived an added piquancy - if it can be called such - from the fact that the cameo clearness of his face chanced to be in relief against the blue shadow of a church which, on its transcendental side, his doctrines antagonized.⁶¹

Hardy's familiarity with Mill's writings, and deep respect for the man, as well as his clear awareness of the incompatibility between Mill's beliefs and the traditional tenets of the Church, are all apparent in this letter.

Rutland quotes two passages from Mill's Three Essays on Religion (published 1874) which may well have influenced Hardy. The first

deals with the inescapable dilemma that God, if he exist, either cannot or will not eliminate suffering.

They (theologians) have exhausted the resources of sophistry to make it appear that all the suffering in the world exists to prevent greater - that misery exists, for fear lest there should be misery; a thesis which, if ever so well maintained, could only avail to explain and justify the works of limited beings, compelled to labour under conditions independent of their own will; but can have no application to a Creator assumed to be omnipotent, who, if he bends to a supposed necessity, himself makes the necessity which he bends to. If the maker of the world can all that he wills, he wills misery, and there is no escape from the conclusion.⁶²

The second, with its juxtaposition of "will" and the "unconscious", and its assertion that consciousness could have evolved from unconsciousness, may have been even more seminal.

The assertion is that physical nature must have been produced by a will because nothing but will is known to us as having the power of originating the production of phenomena ... That nothing can consciously produce Mind but Mind is self-evident, being involved in the meaning of the words; but that there cannot be unconscious production must not be assumed.⁶³

Rutland also quotes an extract from Herbert Spencer's First Principles (1862) which, similarly, might have suggested to Hardy an impersonal source of creative and directive power in the universe.

Thus the consciousness of an inscrutable Power, manifested to us through all phenomena, has been growing ever clearer; and must eventually be freed from its imperfections. The certainty that on the one hand such power exists, while on the other it transcends intuition and is beyond imagination, is the certainty towards which intelligence has from the first been progressing.⁶⁴

Someone very different whom Hardy read "as he came out" was

Swinburne. On Swinburne's death Hardy wrote:

For several reasons I could not bring myself to write on Swinburne immediately I heard that, to use his own words, "Fate had undone the bondage of the gods" for him ...

No doubt the press will say some good words about him now he is dead and does not care whether it says them or no. Well, I remember what it said in 1866, when he did care ... and how it made the blood of some of us young men boil.⁶⁵

Swinburne's influence was clearly an emotional rather than an intellectual one. And even in this, though Hardy shared his infectious anger at the "President of the Immortals", under whatever name he went, the anger in Hardy's case was never joyous. Hardy's agnosticism was always tinged with regret. In The Impercipient (published 1898), God's Funeral (1908-10), and A Cathedral Facade at Midnight (published 1925), we see Hardy's sorrow at not being able to believe.

O, doth a bird deprived of wings
Go earth-bound willingly!⁶⁶

"On a visit to London in the winter (1873-4)," writes Mrs. Hardy, "Hardy had made the personal acquaintance of Leslie Stephen, the man whose philosophy was to influence his own for many years, indeed, more than that of any contemporary, and received a welcome in his household, which was renewed from time to time ..."⁶⁷ And in 1873 had appeared Stephen's Essays on Freethinking and Plain Speaking. In him Hardy was able to find the trenchancy of Swinburne, and some of the intellectual strength of Mill, combined in a congenial contemporary, editor, and friend.

These, then, were some of the other figures who must have influenced Hardy in the 1860's and 70's. But the most important of such influences was almost certainly Darwin. It is impossible to be certain when Hardy read The Origin of Species, or first encountered the theory of natural selection, though Mrs. Hardy writes, in connection with his attending Darwin's funeral, that "As a young man he had been among the earliest acclaimers of The Origin of Species."⁶⁸ He may well have discussed it, along with Essays and Reviews, with Horace Moule, for the latter reviewed both books at about the same time.

Clearly, by the time he wrote Hap in 1866, he was familiar with the main tenets of Darwinism. H. Curtis Webster, in On a Darkling Plain, argues that much of the mechanism of chance, together with the virtually exclusively "sexual" selection which governs the mating of many of the characters, in his novels, is strongly Darwinian in tone. (Though surely novelists had known of sexual selection long before Darwin!) Most conclusive of all is the following passage from A Pair of Blue Eyes (1873), where Knight is hanging on for his life to tufts of grass, the edge of the cliff having just given way under him. At this moment, a few inches from his eyes, he sees an embedded fossil. The powerful, emotive, and functional use Hardy makes of the whole concept of evolution argues, just as forcibly as Meredith's or Swinburne's witty use of the same theory, that it was by this date deeply and integrally a part of Hardy's way of thinking. In addition,

Hardy's sheer knowledge here of evolutionary evidence is more extensive than even Tennyson's.

By one of those familiar conjunctions of things wherewith the inanimate world baits the mind of man when he pauses in moments of suspense, opposite Knight's eyes was an imbedded fossil, standing forth in low relief from the rock. It was a creature with eyes. The eyes, dead and turned to stone, were even now regarding him. It was one of the early crustaceans called Trilobites. Separated by millions of years in their lives, Knight and this underling seemed to have met in their place of death. It was the single instance within reach of his vision of anything that had ever been alive and had had a body to save, as he himself had now.

The creature represented but a low type of animal existence, for never in their vernal years had the plains indicated by those numberless slaty layers been traversed by an intelligence worthy of the name. Zoophytes, mollusca, shell-fish, were the highest developments of those ancient dates. The immense lapses of time each formation represented had known nothing of the dignity of man. They were grand times, but they were mean times too, and mean were their relics. He was to be with the small in his death ...

Time closed up like a fan before him. He saw himself at one extremity of the years, face to face with the beginning and all the intermediate centuries simultaneously. Fierce men, clothed in their hides of beasts, and carrying, for defence and attack, huge clubs and pointed spears, rose from the rock, like the phantoms before the doomed Macbeth. They lived in hollows, woods, and mud huts - perhaps in caves of the neighbouring rocks. Behind them stood an earlier band. No man was there. Huge elephantine forms, the mastodon, the hippopotamus, the tapir, antelopes of monstrous size, the megatherium, and the myledon - all, for a moment, in juxtaposition. Further back, and overlapped by these, were perched huge-billed birds and swinish creatures as large as horses. Still more shadowy were the sinister crocodylian outlines - alligators and other uncouth shapes, culminating in the colossal lizard, the iguanodon. Folded behind were dragon forms and clouds of flying reptiles: still underneath were fishy beings of lower development; and so on, till the lifetime scenes of the fossil confronting him

were a present and modern condition of things.⁶⁹

The spirit of Darwinism continued, moreover, to inform the remainder of his life's work. The poem In a Wood (1887: 1896), from The Woodlanders, shows (as do certain prose passages from the same novel) the ruthlessness of natural selection at work. It also illustrates how difficult Darwin had made it to write, in Wordsworthian vein, about the influence of a "vernal wood".

Pale beech and pine so blue,
Set in one clay,
Bough to bough, cannot you
Live out your day?
When the rains skim and skip,
Why mar sweet comradeship,
Blighting with poison-drip
Neighbourly spray?

Heart-halt and spirit-lame,
City-opprest,
Unto this wood I came
As to a nest;
Dreaming that sylvan peace
Offered the harrowed ease -
Nature a soft release
From men's unrest.

But, having entered in,
Great growths and small
Show them to men akin -
Combatants all!
Sycamore shoulders oak,
Bines the slim sapling yoke,
Ivy-spun halters choke
Elms stout and tall ...

Since, then, no grace I find
Taught me of trees,
Turn I back to my kind,
Worthy as these.
There at least smiles abound,
There discourse trills around,
There, now and then, are found

Life-loyalties.⁷⁰

More central still to Hardy's whole philosophy, the following extract from The Dynasts Part I (1904) shows how appropriate it is to think of the Immanent Will working through the mechanism of evolution and natural selection - working blindly, waywardly, wastefully, uncaringly, irresistably.

O Innocents, can ye forget
That things to be were shaped and set
Ere mortals and this planet met?

Stand ye apostrophizing That
Which, working all, works but thereat
Like some sublime fermenting-vat

Heaving throughout its vast content
With strenuously transmutive bent
Though of its aim unscient? -

Could ye have seen Its early deeds
Ye would not cry, as one who pleads
For quarter, when a Europe bleeds!

Ere ye, young Pities, had upgrown
From out the deeps where mortals moan
Against a ruling not their own,

He of the Years beheld, and we,
Creation's prentice artistry
Express in forms that now unbe

Tentative dreams from day to day;
Mangle its types, re-knead the clay
In some more palpitating way;

Beheld the rarest wrecked amain,
Whole nigh-perfected species slain
By those that scarce could boast a brain;

Saw ravage, growth, diminish, add,
Here peoples sane; there peoples mad,
In choiceless throws of good and bad;

Heard laughters at the ruthless dooms
Which tortured to the eternal glooms
Quick, quivering hearts in hetacombs.

Us Ancients, then, it ill befits
To quake when Slaughter's spectre flits
Athwart this field of Austerlitz!71

This affinity between the workings of natural selection and those of the Will is further underlined by the already quoted comparison between the Will and "the tendency of an ape to become a man and other such processes" (p. 386).

Finally, the concept of the Will becoming conscious implies, as already argued, a belief in a sort of extension to the evolutionary process.

Hardy may have been early impressed by and converted to Darwinism. What is by no means certain, though sometimes assumed, is that Darwinism was solely, or principally responsible for Hardy's loss of faith and pessimism. Contributory it undoubtedly was, together with all the other influences playing on him during the sixties and seventies. But it must have been fifteen to twenty years after Hardy first met Darwinism - years during which many other factors, some doubtless purely personal, played their dispiriting part - that he reached the nadir of his hopes. It is even quite likely that he knew of, and accepted, evolutionary theory several years before acknowledging to himself that he had lost his Christian faith.

Many of the direct references made by Hardy to Darwin and evolution are by no means particularly pessimistic, though he was clearly aware of the rigours of natural selection. Mrs. Hardy reports him as having been an early "acclaimer" of The Origin. A note made by Hardy in 1876 places evolution in perspective as only one strand in a whole texture of related thought - thought, moreover, which is not unduly gloomy for Hardy.

If it be possible to compress into a sentence all that a man learns between 20 and 40, it is that all things merge into one another - good into evil, generosity into justice, religion into politics, the year into the ages, the world into the universe. With this in view the evolution of species seems but a minute and obvious process in the same movement.⁷²

And a reference back to the early days when he first encountered Darwin's thought, made in the Apology with which he prefaced Late Lyrics and Earlier (1922), is quite nostalgic in the way it contrasts the liberating effect Darwin had on him as a young man with the constricting effect on others of later superstitions such as spiritualism.

... these (literature and religion), I say, the visible signs of mental and emotional life, must like all other things keep moving, becoming; even though at present, when belief in witches of Endor is displacing the Darwinian theory and "the truth that shall make you free," men's minds appear, as above noted, to be moving backwards rather than on.⁷³

Moreover, from the same Apology comes a passage in which Hardy, refuting as best he can his own pessimism, or rather what he claims to be others' distortions of his pessimism, and claiming the maximum

freedom for men to better their lot which is reconcilable with the overall determinism he still acknowledges, seems to view "evolutionary meliorism" as some sort of palliative to what otherwise might be unendurable.

And what is to-day, in allusions to the present author's pages, alleged to be "pessimism" is, in truth, only such "questionings" in the exploration of reality, and is the first step towards the soul's betterment, and the body's also.

If I may be forgiven for quoting my own old words, let me repeat what I printed in this relation more than twenty years ago, and wrote much earlier, in a poem called "In Tenebris":

If way to the Better there be, it exacts a full
look at the Worst:

that is to say, by the exploration of reality, and its
frank recognition stage by stage along the survey, with
an eye to the best consummation possible: briefly,
evolutionary meliorism.⁷⁴

Thus, though evolution is consonant with the idea of the Will, and even confirms the existence and workings of the Will, it is seen as one of the more hopeful aspects of its activity, and as offering some support to man's hopes of continuing and assisting the ameliorative process.

Finally, as Webster points out, Hardy in the sixties and early seventies was a young man of fairly radical political and social views, whose first unpublished novel, The Poor Man and the Lady, so far as its content can now be deduced, was radical and critical of society, in a way none of his later ones were. This was so much so

as to make the publisher's reader, Meredith, advise Hardy against publishing it for fear the resulting furore might prejudice his future as a writer. In the words of Mrs. Hardy:

The story was, in fact, a sweeping dramatic satire of the squirearchy and nobility, London society, the vulgarity of the middle class, modern Christianity, church-restoration, and political and domestic morals in general, the author's views, in fact, being obviously those of a young man with a passion for reforming the world - those of many a young man before and after him; the tendency of the writing being socialistic, not to say revolutionary ...⁷⁵

This novel was written in 1867, a time when some of his verses clearly reflect a certain cosmic pessimism, in part at least occasioned by Darwinism. Evidently this was counter-acted quite effectively by youth and vigour and hope and indignation. Moreover, his novels for some years to come are far from his most despondent. Desperate Remedies (1871), Under the Greenwood Tree (1872), A Pair of Blue Eyes (1873), Far from the Madding Crowd (1874) and The Hand of Ethelberta show only a gradually and fitfully deepening pessimism. The Return of the Native (1878) is the first to begin to show human helplessness against a truly indifferent background, but this is followed by The Trumpet Major (1880) - described in The Oxford Companion to English Literature as "one of Hardy's simplest and pleasantest tales, with hardly a trace of irony or bitterness"⁷⁶ - and A Laodicean (1881). Two on a Tower (1882), though not one of Hardy's most impressive novels, sets the human action against an even vaster background of indifference, and the whole plot is governed by such a fateful series

of accidents as to transcend the workings of mere chance. And thereafter, in The Mayor of Casterbridge (1886), The Woodlanders (1887), Tess of the d'Urbervilles (1891) and Jude the Obscure (1896), both Hardy's art as a novelist and his pessimism reach their ultimate and then overreach themselves.

It is clear, then, from the novels (whose dates give a more reliable chronological guide than those of the poems) that towards the end of the seventies, and above all throughout the eighties and nineties, Hardy's view of the universe became more unrelievedly gloomy than ever it had been in the sixties and early seventies.

No easy solution presents itself so far as the incidents of Hardy's personal life are concerned. He was relatively successful as a novelist, living by choice in his native Dorset but taking a house in London for a part of each year. As to how happy or unhappy his first marriage was, opinions are divided, but even at its least happy, his marriage alone offers no adequate explanation of Hardy's pessimism. (In fact one of the causes of what domestic friction there was may well have been Mrs. Hardy's inability to understand or sympathise with Hardy's constitutional lack of hope.) No doubt the mainspring of Hardy's view of the universe was, in one way or another, deeply personal; a note from 1878 reads: "Woke before it was light. Felt that I had not enough staying power to hold my own in the world."⁷⁷ But those who are sick at heart do not always need a palpable and external cause for their despair.

So far as Darwinism itself is concerned, it is possible that its intellectual and emotional effect on Hardy was cumulative. Darwin's own The Descent of Man in 1871, and the various deterministic extensions to Darwinism by authors such as Tyndall, Huxley, Haeckel and W. K. Clifford (Body and Mind, 1874), may have served to bring home to Hardy the further and fuller implications of evolutionary theory - as they did to Tennyson and Browning, to their consternation. At all events, it seems clear that during the late seventies and early eighties Hardy was moving on from belief in a chance-directed universe to belief in a necessity-directed one - to a materialistic determinism. Odd notes and memoranda preserved by Mrs. Hardy indicate this clearly - showing, for instance, that plans for a Napoleonic drama or epic, which had been maturing in his mind for some years, took a markedly deterministic turn in 1881.

1875: A Ballad of the Hundred Days. Then another of Moscow. Others of earlier campaigns - forming altogether an Iliad of Europe from 1789-1815.⁷⁸

1877: Consider a grand drama, based on the wars with Napoleon, or some one campaign (but not as Shakespeare's historical dramas). It might be called "Napoleon", or "Josephine", or by some other person's name.⁷⁹

1881: A Homeric Ballad, in which Napoleon is a sort of Achilles, to be written. (This entry, of a kind with earlier ones, is, however, superseded a few days later by the following:) Mode for a historical Drama. Action mostly automatic; reflex movements, etc. Not the result of what is called motive, though always ostensibly so, even to the actors' own consciousness. Apply an enlargement of those theories to, say, "The Hundred Days";⁸⁰

Three years later, while engaged in writing The Mayor of Casterbridge, he could ask:

Query: Is not the present quasi-scientific system of writing history mere charlatanism? Events and tendencies are traced as if they were rivers of voluntary activity, and courses reasoned out ~~from~~ the circumstances in which natures, religions, or what not, have found themselves. But are they not in the main the outcome of passivity - acted upon by unconscious propensity? 81

One of the influences under which Hardy undoubtedly came at about this time was the philosophy of Schopenhauer, though in reply to a presentation copy of a doctoral thesis entitled Thomas Hardy, an Illustration of the Philosophy of Schopenhauer, Hardy once wrote: "My pages show harmony with Darwin, Huxley, Spencer, Hume, Mill, and others, all of whom I used to read more than Schopenhauer."⁸² Nevertheless, he is known to have owned and annotated a copy of The Four-fold Root of the Principle of Sufficient Reason (Schopenhauer's doctoral thesis, in which he first outlines the ideas he will later develop), published in its English version in 1889. There was also a first edition of The World as Will and Idea (Die Welt als Wille und Vorstellung (1819) Englished) on his shelves. Its three volumes were brought out between 1883 and 1886, but the first contains the heart of Schopenhauer's message, and he is in fact mentioned by name in Hardy's poem The Pedestrian subtitled "An Incident of 1883". It ~~has been suggested that Hardy may~~ even have met some of Schopenhauer's ideas in magazine articles in the 1870's. So a growing familiarity with some of the works and views of Schopenhauer was probably roughly contemporaneous with a deepening pessimism on Hardy's part, though if anything lagging behind rather

than preceding it. Clearly the reason for Schopenhauer's particular appeal to Hardy at this time was that his philosophy confirmed the existing main trends in Hardy's thought, and pointed further in the direction in which they were already moving. This much is ~~clearly~~ implied by Hardy's comment, above, on the thesis that Schopenhauer was the prime influence at work.

Schopenhauer introduces his concept of Will by offering us his account of the familiar dichotomy between mind and body. Mind - or Will, as he calls it, since he wishes to extend its meaning later so as to attribute it to phenomena certainly not usually thought of as having a mental aspect - Will is not separate and distinguishable from body, but the same thing viewed from a different standpoint.

The body is given in two entirely different ways to the subject of knowledge, who becomes an individual only through his identity with it. It is given as an idea in intelligent perception, as an object among objects, and subject to the law of objects. And it is also given in a quite different way as that which is immediately known to everyone, and is signified by the word will. Every true act of his will is also at once and without exception a movement of his body. The act of will and the movement of the body are not two different things objectively known, which the bond of causality unites; they do not stand in the relation of cause and effect; they are one and the same, but they are given in entirely different ways, - immediately, and again in perception for the understanding. The action of the body is nothing but the act of the will objectified i.e. passed into perception. It will appear later that this is true of every movement of the body, not merely those which follow upon motives, but also involuntary movements which follow upon mere stimuli, and, indeed, that the whole body is nothing but objectified will, i.e. will become idea. ⁸³

Having thus established his right to use the term "will" as a

necessary way of looking at and thinking about man, because purely physical or materialistic concepts and terms are inadequate to represent the experience of human existence, Schopenhauer then finds such terms inadequate to express the nature of all existence, and by analogy postulates a will behind all phenomena.

Whoever has now gained from all these expositions ... a knowledge that his will is the real inner nature of his phenomenal being ... will find that of itself it affords him the key to the knowledge of the inmost being of the whole of nature; for he now transfers it to all those phenomena which are not given to him, like his own phenomenal existence, both in direct and indirect knowledge, but only in the latter ... He will recognise this will of which we are speaking not only in those phenomenal existences which exactly resemble his own, in men and animals as their inmost nature, but the course of reflection will lead him to recognise the force which germinates and vegetates in the plant, and indeed the force through which the crystal is formed, that by which the magnet turns to the north pole, the force whose shock he experiences from the contact of two different kinds of metals, the force which appears in the elective affinities of matter as repulsion and attraction, decomposition and combination, and lastly, even gravitation, which acts so powerfully throughout matter, draws the stone to the earth and the earth to the sun, - all these, I say, he will recognise as different only in their phenomenal existence, but in their inner nature as identical, as that which is directly known to him so intimately and so much better than anything else, and which in its most distinct manifestation is called will. It is this application of reflection alone that prevents us from remaining any longer at the phenomenon, and leads us to the thing in itself. Phenomenal existence is idea and nothing more. All idea, of whatever kind it may be, all object, is phenomenal existence, but the will alone is a thing in itself. As such, it is throughout not idea, but toto genere different from it; it is that of which all idea, all object, is the phenomenal appearance, the objectification. It is the inmost nature, the kernal, of every particular thing, and also of the whole. It appears in every blind force of nature and also in the preconsidered action of man; and the great difference between these

two is merely in the degree of the manifestation, not in the nature of what manifests itself.⁸⁴

The passage shows a curious blend of, or ambivalence between, the scientist's ambition to account for all differences in the physical world as differences of quantity and structure within an uniform continuum, and an almost alchemical search for an unifying duality of spirit and body throughout all aspects of creation. Which is perhaps only to say that alchemists were nearer to many of the conclusions if not the modes of modern thought than is generally realised, and that writers like Schopenhauer and Bergson perpetuate something of their quasi-mystical, synthesising cast of mind in a predominantly analytic age. Their syntheses are arrived at prematurely, by far too direct and intuitive means, instead of being indefinitely postponed as in the modern manner.

Schopenhauer's concept of the Will is quite Darwinian in its ruthless unconcern for the individual save as a means of perpetuating the species and life as a whole. Generation and death, says Schopenhauer, in a startlingly frank and callous few sentences, are merely more extreme forms of quite everyday processes of life.

That generation and death are to be regarded as something belonging to life, and essential to this phenomenon of the will, arises also from the fact that they both exhibit themselves merely as higher powers of the expression of that in which all the rest of life consists. This is through and through nothing else than the constant change of matter in the fixed permanence of form; and this is what constitutes the transitoriness of the individual and the permanence of the species. Constant nourishment and renewal differ from generation only in degree, and constant excretion differs only in degree from death.⁸⁵

However, the operations of Schopenhauer's Will seem merely self-perpetuating. Schopenhauer's dates (1788-1860) preclude his philosophy from being in any true sense Darwinian, and such ideas of progress, biological or historical, as may have come to his notice were wholly irrelevant to the utterly pessimistic view he took of the universe. This is apparent if one contrasts Hardy's hopes, expressed at the end of The Dynasts, that the Will may be evolving towards self-knowledge ("Consciousness the Will informing, till It fashions all things fair!") with Schopenhauer's views on such consciousness as is attained to by the Will in the mind of man.

The will, which, considered purely in itself, is without knowledge, and is merely a blind incessant impulse, as we see it appear in unorganised and vegetable nature and their laws, and also in the vegetative part of our own life, receives through the addition of the world as idea, which is developed in subjection to it, the knowledge of its own willing and of what it is that it wills. And this is nothing else than the world as idea, life, precisely as it exists.⁸⁶

What the Will wills is a "world ..., life, precisely as it exists" - and as it is now, it was in the beginning, and ever shall be.

In similar vein, we have in the following passage, not only an utter determinism expressed, but an absolving of the Will from any kind of blame.

The world, in all the multiplicity of its parts and forms, is the manifestation, the objectivity, of the one will to live. Existence itself, and the kind of existence, both as a collective whole and in every part, proceeds from the will alone. The will is free; the will is almighty. The will appears in everything, just as it determines itself in itself and outside time. The

world is only the mirror of this willing; and all finitude, all suffering, all miseries, which it contains, belong to the expression of that which the will wills, are as they are because the will so wills. Accordingly with perfect right every being supports existence in general, and also the existence of its species and its peculiar individuality, entirely as it is and in circumstances as they are, in a world such as it is, swayed by chance and error, transient, ephemeral, and constantly suffering; and in all that it experiences, or indeed can experience, it always gets its due. For the will belongs to it; and as the will is, so is the world. Only this world itself can bear the responsibility of its own existence and nature - no other ...⁸

This has more in common in some ways with the stoicism of Arnold's Empedocles, than with Hardy and is a far cry from the indignation Hardy clearly feels, despite his acknowledgement of the meaninglessness of blaming the Will, at the human lot.

Schopenhauer's conclusion (and also that of his disciple, von Hartmann, though in his case less compellingly argued) is that the Will, or the Will to live, because so inescapably productive of suffering, is fundamentally evil, and should therefore be resisted by the Will not to live. (The origin of such a moral imperative, in an universe in which the Will "is the inmost nature, the kernal, of every particular thing, and also of the whole", is not made clear.) This Will not to live must manifest itself not in suicide (which is merely death, and therefore a part of the processes of the Will), but in asceticism, and above all in chastity. A perversion of this final message of Schopenhauer must be presumed to lie behind the actions of Little Father Time in Jude the Obscure. Indeed, it is said in extenuation

of them that

... there are such boys springing up amongst us - boys of a sort unknown in the last generation - the outcome of new views of life. They seem to see all its terrors before they are old enough to have staying power to resist them ... It is the beginning of the coming universal wish not to live. 88

There is no call, however, to identify such a view with Hardy's own. Hardy does not subscribe to the ultimate nihilism of Schopenhauer's position. As he himself writes, referring to Schopenhauer and von Hartmann, and not entirely understanding Einstein:

But if it be true, as Comte argued, that advance is never in a straight line, but in a looped orbit, we may, in the aforesaid ominous moving backward, be doing it pour mieux sauter, drawing back for a spring. I repeat that I forlornly hope so, notwithstanding the supercilious regard of hope by Schopenhauer, von Hartmann, and other philosophers down to Einstein who have my respect. 88 89

The hope is scarcely buoyant or infectious, but it persists. Far in the future, the Will may one day gain consciousness. Even failing this, there is still hope, if hope is the right word,

that whether the human and kindred animal races survive till the exhaustion and destruction of the globe, or whether these races perish and are succeeded by others before that conclusion comes, pain to all upon it, tongued or dumb, shall be kept down to a minimum by loving-kindness, operating through scientific knowledge, and actuated by the modicum of free will conjecturally possessed by organic life when the mighty necessitating forces - unconscious or other - that have "the balancings of the clouds," happen to be in equilibrium, which may or may not be often. 890

Rutland argues that Hardy's hope that the Will may gain consciousness was not, as he thought, original; that he may have gleaned it from his reading of von Hartmann. This is to ignore that,

though both von Hartman and Schopenhauer acknowledge that the Will, or the Unconscious, attains to consciousness in man, the only result is for It to recognise Its own inherent and inescapable tendency to evil, and the only solution a rejection of Its own promptings in that part of It which is conscious. Hardy's hope, on the contrary, is that the Will may become increasingly conscious, and increasingly rectify its past mistakes - though, as already argued, to inquire too closely into the means whereby this may be brought about is to have the theory raise more difficulties than it solves.

Hardy's affinities with Schopenhauer correspond in a strange way to Meredith's (and to a lesser degree Swinburne's) with Bergson, though whereas Hardy read and was influenced by Schopenhauer, Meredith anticipated Bergson in certain respects. In each case there is an intellectual acceptance, and an imaginative or poetic rejection, of the full implications of materialism. This results in Meredith's case, for whom wholly materialistic natural forces and processes seemed in the main to be Darwinianly ameliorative and conducive to progress, in a personification of these same forces and processes as the munificent and well-disposed, if often stern, figure of Mother Nature. Hardy, on the other hand, was peculiarly aware of quite other, though equally Darwinian, qualities in the workings of nature. For him they were indifferent, wasteful, without assured purpose, and often seemingly cruel. Therefore these were the predominating characteristics of whichever figure - Mother Nature, God, the Immanent Will - he

happened to be using at the time as the poetic embodiment of what he knew perfectly well were wholly materialistic natural forces and processes.

This poetic use of personification led, as we have seen, to certain ambiguities, not to say ambivalences, in the work of Meredith and Swinburne. The same is equally true of Hardy, except that in his case it is a question as to what meaning can be attached, in a wholly materialistic context, to such terms or concepts as "indifference", "heartlessness", even "vindictiveness", rather than, as in Meredith's case, those of "purpose" and "benevolence".

This becomes peculiarly and ironically apparent after reading Hardy's own comments, in a letter to Dr. Saleeby in 1915, on Bergson. Almost all Hardy's criticisms of Bergson apply with equal force to Schopenhauer and most of them to Hardy himself.

His theories are much pleasanter ones than those they contest, and I for one would gladly believe them; but I cannot help feeling all the time that his is rather an imaginative and poetical mind than a reasoner's, and that for his charming and attractive assertions he does not adduce any proofs whatever. His use of the word "creation" seems to me loose and vague. Then as to conduct: I fail to see how, if it is not mechanism, it can be other than caprice, though he denies it. Yet I quite agree with him in regarding finalism (teleology) as an erroneous doctrine. He says, however, that mechanism and finalism are only external views of our conduct - "Our conduct extends between them, and slips much further". Well, it may, but he nowhere shows that it does. 91

Neither Schopenhauer nor Hardy can wholly escape the charge of being "poetic" or "imaginative", and both "adduce" few enough "proofs"

for their ugly and unattractive "assertions" concerning a rather "loose and vague" entity termed the Will. However, the real bone of contention is whether Bergson has found a valid escape from the dilemma posed by materialism versus finalism, or whether, as Hardy clearly holds, to reject the latter is to be left with no alternative to the former. And on this point, Bergson's feeling that "conduct" cannot adequately be characterised by a purely external account, whether materialistic or teleological, that it "extends between them, and slips much farther", and that any full account of it must include the subjective knowledge we have of ourselves, is precisely Schopenhauer's starting point. Moreover, Schopenhauer extends his subjectively apprehended concept of a Will to all forms of existence precisely because he finds a purely external, mechanistic account of the whole universe no more adequate than a similar account of his own conduct. And Hardy too, by his use of the concept of the Will, is adding something to mere materialism in just as real a sense as Schopenhauer or Bergson himself. In his own, less hopeful way he is guilty of the same kind of complexity, clumsiness and confusion he accuses Bergson of in a later letter on the same subject.

An elan vital - by which I understand him to mean a sort of additional and spiritual force, beyond the merely unconscious push of life - the "will" of other philosophers that propels growth and development - seems much less probable than single and simple determinism, or what he calls mechanism, because it is more complex: and where proof is impossible, probability must be our guide. His partly mechanistic and partly creative theory seems to me clumsy and confused.⁹²

Equally, therefore, with Meredith's and Swinburne's, Hardy's poetic practice reveals an antipathy towards the materialistic determinism he avowedly embraced. And on this score, if not on others, all three are in unintended sympathy with Tennyson and Browning.

CHAPTER IX

CONCLUSION

In Chapters I and III of this study the history of evolutionary ideas was traced, in the writings of scientists of one kind or another, from the mid-eighteenth century to the beginning of the twentieth. It was shown how they interacted with other areas of scientific thought and investigation, and how their advance could only take place as far and as fast as the supporting evidence from such other fields of enquiry would permit. Thus the discovery that stellar forms were not fixed, but were slowly changing and evolving dispositions of matter, helped to create a climate of opinion less hostile towards, or incredulous of, the idea of biological evolution. Thus the more precise definition by Ray and Linnaeus of species, depending as it did on their capacity to breed true, militated in the first instance against evolution, though clearing the way for later advances. Thus the increasing skill of human beings at improving the strains of the plants and animals they bred, and in particular the hybridization which hot-house cultivation made possible, threw doubt on such fixity of species. Thus the preformationist embryology of the eighteenth century ran completely counter to any form of evolutionary theory, whereas the latter was offered strong support through analogy by the discovery in the nineteenth century that the embryo appeared to

recapitulate various earlier stages of an animal's evolutionary history.

Thus above all the advance of evolutionary ideas was dependent at almost every stage on that of geological thought, while geological thought was in its turn certainly influenced by evolutionary ideas. Even catastrophism, hostile as it was to true evolution, found itself obliged, in order to accommodate the increasing support that geological evidence was affording to the concept that life had in some way or other developed, to adopt a quasi-evolutionary, "progressionist" position. Lyell, on the other hand, being so opposed to such teleological progressionism, went to the other extreme and conceived of his own uniformitarianism as being wholly non-progressive or cyclical, and so could not readily accept the idea of biological evolution. Nevertheless, in insisting that the earth's crust was the result of the gradual operation, over vast stretches of time, of the same natural laws still to be observed at work, Lyell was approaching the problems of geology in exactly the same spirit as Darwin was to approach those of biology. Moreover, he was offering Darwin a geological time-scale which made evolution by natural selection possible.

More interesting from the point of view of this study, it became increasingly apparent how ideas about evolution interacted with areas of thought not so clearly scientific. First of all, there was

the importance of that heirarchical concept of a great chain of being. Its detailed gradation of species into a quite static order or "progression" was an unimportant appendage, almost, to its religious or philosophic basis and its social implications. Nevertheless, this ordering of the forms of life made it easier for men eventually to accept a non-static progression of species. Then it was seen how, at a point in time when some eighteenth century biologists were coming round to the idea of there being a certain fluidity of species, resulting in improvements and degenerations, eighteenth century notions of progressive change in human affairs and history spilled over and helped men conceive of changes in the natural world, and particularly those in biology, as being on the whole upward or progressive. During the nineteenth century, however, human and historical progress came to be seen as more and more process-like or developmental, more and more a working out of fundamental tendencies or laws, until eventually the eighteenth century position was reversed, and concepts of biological progress began influencing theories of human progress. History was seen as a continuation of mechanistic and inevitable biological processes and therefore as subject to the same kind of laws - often harshly analogous to those of Darwinian natural selection.

There were, of course, many who were strongly opposed to such views. Large numbers of devout believers were incensed at the idea

that mankind had evolved by chance out of mechanistic necessity. Some even, like Samuel Butler, who felt no need of the hypothesis of God to account for what they saw around them, nevertheless came to regard strictly Darwinian or random mechanisms of development as being inadequate to account for as "meaningful" an end product as man. Such a line of thought tended, as had certain neo-transcendental developmental philosophies originating in Germany, to invest the processes themselves, rather than any wholly external or non-immanent source of significance, with certain quasi-supernatural qualities. This culminated in Bergson and his elan vital. For those who could bring themselves to believe in his, or a similar, life-force, it offered an escape from what many felt to be the insupportable dilemma of having to choose between materialistic determinism and transcendent teleology.

Chapters II and IV dealt with the appearance of evolutionary ideas in the poetry of the eighteenth century and of the nineteenth century Romantics. Eighteenth century poetry is chiefly interesting in this connection for the way in which ideas which are quite incompatible with evolution, and those which are compatible with or even seem to support evolution, can appear virtually contemporaneously in the work of different authors, and sometimes even in that of the same author. This seems in large measure to be because no one was then aware, as we who see it all in perspective are, of the full

implication of such ideas.

Thus Pope in An Essay on Man (1733-4) presents a picture of the various biological forms of life as forming an elaborate, wholly static chain of being, while barely ten years later, in The Pleasures of Imagination, Akenside sees life as infused with a propensity to rise within the scale of being, though curiously not to change thereby the overall composition of that chain of being, since the lower links are continuously replenished by fresh creation or spontaneous generation. Thus Young, though seemingly a subscriber to a static chain of being, nevertheless emphasises the linking and transitional nature of certain orders of existence (notably that of man) within such a chain, presents a clear picture of stellar evolution, and avows that "Nature delights in progress, in advance/ From worse to better". Thus Erasmus Darwin, though on the one hand able to show the importance of sexual selection in maintaining and improving the stock of a species, while on the other hand keenly aware of the wasteful carnage inherent in nature's competitive mechanisms, and of the need for each species to have the means to escape from or to pursue - in a word to compete with - other species, never saw any connection between these two sets of factors, or between either of them and the account he was able to give of the probable course of evolution, from life under the sea to life on land and in the air.

There were a number of reasons why evolution and associated topics figured less prominently in the writings of the Romantics than in those of some eighteenth century poets. In the first place, because of its associations with Erasmus Darwin and with Lamarck, Geoffroy St. Hilaire and other Frenchmen, evolution had become a disreputable subject both in a poetic and in a political or patriotic sense. In addition, the religious beliefs of a man like Coleridge, being less rational and dispassionate, more personal and intensely held than was the rule in the eighteenth century, presented a considerable obstacle to his accepting a theory he was perfectly well aware of, and in many ways in sympathy with. As for Byron, though he was happy to use aspects of Cuvier's catastrophism as an illustration of a point he was making, one feels that he neither knew nor cared whether such theories were tenable. They had served a turn, and that was enough. Moreover, both he and Shelley had too much of the crusader about them to be attracted to theories of impersonal and inevitable progress. And in any case, the subjects favoured by the Romantics for their poems, and their conception of the nature and role of poetry, were much less accommodating to a treatment of evolutionary themes than the subjects and the conceived nature and role of eighteenth century poetry.

Tennyson's dates (1809-92) make him the first poet considered in this study who was still alive in the year Darwin published

The Origin of Species, though many of the references in his poems to evolution appeared earlier than this. Indeed, for a layman Tennyson was exceptionally well read on the subject, and though it has been suggested that, before 1859, it was to progressive acts of creation rather than to evolution proper that Tennyson was referring, there is a good deal of evidence to the contrary. He writes very compellingly of infinitely slow, Lyellian geological changes, and almost as certainly of slow biological development, probably of a Lamarckian kind. It is, in fact, in his best known reference to evolution that Tennyson leaves least doubt he was no catastrophist; for his near despair in Sections LIV, LV and LVI of In Memoriam is by no means occasioned by a God who, quite deliberately, kills off successive creations in order to replace them with better. Rather, it is a reaction to the ruthless, wasteful, and apparently haphazard prodigality of "Nature", both now and throughout evolution, and to the thought that there may be no ultimate and abiding significance behind these mindlessly materialistic processes of Nature.

Tennyson's despair at this point in his life, and in In Memoriam, was, we know, largely personal in its origin; later in the same poem, and elsewhere, he lets evolution seem to lead on to a more general notion of progress, in typical Victorian fashion. Nevertheless, his horror at the cruelty of nature, and his concern at

the growing hold of materialism over men's minds, cannot be dismissed as mere rationalization of a private disposition to grief. There really was something for him to be disturbed at in the view which science was increasingly presenting of nature. And the ruthlessness of natural selection, together with the non-teleological emphasis of Darwinism proper, gave greater precision and authority to just those features of such a view which had most disturbed Tennyson when he was writing the Sections of In Memoriam discussed above. Hence, presumably, his long poetic silence on the subject of evolution after 1859 - a silence not broken, in fact, until the brief, petulant outburst against natural selection in The Promise of May in 1882. This, moreover, was to be Tennyson's one and only direct reference to natural selection; his other late poems on or around the subject of evolution content themselves with making conventional links between past biological progress and future social or ethical progress.

Browning too wrote of evolution before 1859. The close of Paracelsus is a paean in praise of progress - a progress which implies and includes biological progress over a long period. There are, however, two major differences between Browning and Tennyson on the subject of evolution. First, Tennyson was much the better read and informed on this aspect, and indeed on all aspects, of science.

Thus there is no indication in Paracelsus of any preferred mechanism for evolution. Certain later poems, such as Luria and Cleon, seem to show Browning in favour of successive, progressionist creations; whereas others, such as Mr. Sludge "The Medium", lean towards scientific gradualness. Finally the unconscious inconsistencies and contradictions come face to face in the same poem; Prince Hohensteil-Schwangau reveals Browning as not really aware of the crucial difference between a progressionist evolution, operating by means of alternating catastrophes and creations, the creations getting better every time, and a developmental evolution, whether Lamarckian or Darwinian. After this it comes as no surprise to discover, in Fifine at the Fair, that Browning cannot distinguish between the Lamarckian and Darwinian variants of evolution either.

Browning was therefore less aware than Tennyson of the harshness of nature in achieving her ends; he was not sufficiently knowledgeable to have written Section LV of In Memoriam. But the second great difference between Browning and Tennyson, in this connection, is that Browning would never have wanted to write Section LVI, since the apparent ruthlessness which so distressed Tennyson would merely have confirmed an aspect of Browning's oft repeated personal philosophy. This required the presence in the world of an appreciable element of evil, harshness, cruelty and imperfection, as a kind of irritant, to ensure progress and prevent stagnation. Even Darwinian natural selection, had Browning understood it, would

not have struck him as unduly repellent.

Nevertheless, after the appearance of The Origin of Species, and even more markedly so after the publication of The Descent of Man (1871), Browning eschews any easy affirmation of a belief in progress, of the kind he had written in Paracelsus. More and more (and most notably in Francis Furini) he comes to mistrust all knowledge which is objectively and intellectually apprehended and arrived at, in favour of that which is sensual or emotional, and in any case subjective. He comes close to admitting that such a mistrust should apply to his own theoretical justification of evil and basis for optimism; certainly it applies to evolution. For Browning, like Tennyson, senses increasingly the threat to religion which a belief in evolution must constitute, once that evolution seems self-explanatory in terms of wholly natural laws.

Certain American near-contemporaries of Tennyson and Browning, like Emerson and Whitman, managed to accept evolution in their poetry a good deal more easily than their English counterparts. This is largely because they do not seem to have been aware of the strongly non-teleological nature and probable implications of evolution, and in particular of evolution by natural selection. With Swinburne, Meredith and Hardy, however, we are dealing with a generation of English poets for whom evolution, and even Darwinism, are theories they encountered and accepted in early manhood. In

addition, none of them remained orthodoxly religious beyond early manhood, and in Swinburne's case the fact that evolution seemed to run counter to religious belief was enough to commend it almost without further consideration.

The work of Swinburne and Meredith is fundamentally optimistic, evolution being thought of as continuing in some form or other into the future, and the incidental sufferings of man and beast in the meantime as being justified by the greater happiness they serve to bring nearer. Both poets are also essentially materialistic, believing evolution to be the result of impersonal, natural forces. Yet both, by using personification ("Hertha" or "Mother Nature") extensively when referring to such impersonal forces, and in Meredith's case by postulating, at least for poetic purposes, an infinitely remote godhead, to a large extent contradict or nullify their parallel insistence on the impersonal, non-teleological factors they profess to see at work in evolution. Meredith in particular sounds a prophetically Bergsonian note at times.

In a curiously similar way, Hardy too, whilst professing to think of everything that takes place as being determined by wholly materialistic causes, half gives the lie to this by his various personifications. At different times he refers to, or addresses, the powers that be as Mother Nature (or the Mother, or Nature, or the Great Dame, and so forth), as God (but God in a strict Hardy

sense, meaning the personification of impersonal forces, and in sharp contradistinction to any Christian notion of God), and as the Immanent Will (It). There are slight changes of emphasis as Hardy moves from one to another. Mother Nature seems the most blame-free, powerless to do other than what she does; sometimes she works in conjunction with a more shadowy, culpable figure referred to as Doom, whose instructions she must blindly execute. God, as might be expected, is a personification used by Hardy when he has more need of someone to blame, and is portrayed as one who, though for the most part unknowing and uncaring, has momentary pangs of something akin to guilt before relapsing into unconsciousness. The Immanent Will marks a return in some ways to the more mindless irresponsibility of Mother Nature, though whereas with Nature the determining factor had been "hap" or chance, Hardy now thinks more grimly in terms of necessity. On the other hand, there are clear, if wavering, hopes that the collective unconscious of the Will may be evolving towards both consciousness and responsibility - that there may be hope of better things in the far future. Nevertheless, in spite of such touches of optimism, and in spite of the similarity we have noted between Hardy and Meredith, Hardy's philosophic affinities are retrospectively with the pessimist Schopenhauer rather than prophetically with Bergson.

It may be objected that I place too much emphasis on the attendant but unintended implications of Swinburne, Meredith and

Hardy's having adopted a merely literary device - that of personification. Indeed, some of the difficulties experienced in Chapters VII and VIII over apparent inconsistencies in Meredith's or Hardy's thought may be attributable to just such an over-literal-minded approach on my part to their use of personification. Yet I believe such inconsistencies and difficulties to be significant and revealing. Intellectually, for instance, Meredith seems to think clearly enough of Mother Earth as representing impersonal, non-teleological forces at work within the universe. Yet the frequency with which he employs maternal and mammery imagery, and the very real, often ambivalent, filial ties which he portrays in a poem like Earth and Man, clearly indicate his need as poet and perhaps as man of some cosmic entity with whom/which he can think of himself as having a personal relationship. In many ways it is presumably the same need which, according to Freud, causes man to postulate the parental projection he calls God, though in Meredith's case the relationship between man and Nature is not merely one of dependence, but increasingly one of mutual interdependence. (His concept of parenthood is evidently less arrestedly infantile than that described by Freud!) There is also an odd, almost Marian quality to the rôle played by Mother Nature as intermediary between man and an infinitely remote, unknowing and unknowable, godhead.

In the case of Hardy it is equally clear, from certain passages, that intellectually he is at great pains to exculpate the Immanent Will, qua personification of wholly materialistic forces, and show

that in such a context blameworthiness is a quite meaningless concept. Yet it is equally clear, from other passages, that one of the reasons for such an exercise in personification is precisely Hardy's need of someone to blame. There is even a suspicion that, when Hardy dreams of a possible evolving sense of awareness and responsibility in the Will, he relishes the thought of It's retrospective guilt.

If I am right, then there is a sense in which certain affinities or differences of attitude toward evolution and evolutionary materialism, taken in conjunction with certain affinities or differences of temperament, may be said to link the poetry of Swinburne, Meredith and Hardy with that of both Tennyson and Browning. Prior to 1859, Browning's innate bounce and optimism led him to welcome theories of progress of all kinds, including biological progress; just as Meredith, and to a limited extent Swinburne, were able even after 1859, thanks to an innate buoyancy of temperament, to accept the harsher aspects of natural selection, regarding them as incidental to the more important, hopeful, and progressive implications of Darwinism as a whole. Tennyson, on the other hand, even before 1859, was by temperament inclined to dwell more on those aspects of the new geology and biology which implied harshness and indifference to individual human life; just as Hardy's constitutionally gloomy cast of mind tended to find confirmation of its pessimism in the severities of Darwinism.

The attitudes to evolution of Tennyson and Browning drew closer together after 1859, however, as the increasingly materialistic implications and influence of Darwinism became apparent. To both of them, complete materialism was anathema. And similarly, though Swinburne, Meredith and Hardy in their different ways accepted the implications of evolution by natural selection, including that of a more or less materialistic determinism, they found it impossible to function as poets within a strictly non-anthropomorphic, non-teleological framework of cosmic thought. All three, but Meredith and Hardy in particular, fell back on a variety of kinds of personification to say what they had to say about the nature of the universe, all of which vitiated to a greater or less extent their authors' more overt professions of materialism.

Moreover, behind Hardy stands the brooding gloom of Schopenhauer, and beyond Meredith the half-biological, half-mystical optimism of Bergson. And between these two extremes stretches a whole line of thinkers (such as von Hartmann, Schelling, Hegel, Nietzsche, maybe even Spencer and Marx) who, with similar ambivalence, both accepted and rejected the increasingly materialistic determinism towards which so many discoveries and so much thought in the nineteenth century seemed inexorably to be leading. What they were all searching for, perhaps, was a model of the universe derived from nineteenth century biology rather than eighteenth century physics - a model which conceived of the universe as an organism rather than a

machine, with future patterns of behaviour both prescribed and unpredictable. Just such a model was adumbrated by Hardy, in his image of individual human lives being impulses within a gigantic brain (p.386). And it is probably true that, of the quasi-panteisms we have been discussing in the previous two chapters, Hardy's of the Immanent Will is the least dissatisfying. But of all of them it is even truer that, if they reveal any of the truth about the nature of the universe, it is because they reveal much more directly something about the nature of the human minds which devised, wrote about, and needed them.

Finally, what of the poems as poems rather than mere documents in a history of ideas? Sadly one thinks of The Pleasures of Imagination, Universal Beauty, or The Temple of Nature, and realises that no one can ever again read them for a reason other than intellectual or idle curiosity - if, indeed, anyone has ever been able to. Yet, granted that Akenside, Brooke and Erasmus Darwin are irretrievably minor, by the canons of any age and no matter what they choose to write about, does the theme of evolution seem to fare much better if we turn elsewhere? Is it for Prince Hohenstiel-Schwangau and Fifine at the Fair or for Men and Women that we value Browning? for The Woods of Westermain and The Test of Manhood or for Modern Love that we turn to Meredith? for the abstract mythologies of Nature's Questioning or for the sea, sky,

road, rocks, and remembered love of Beeny Cliff and At Castle Boterel that we read the lyrics of Hardy?

There is a sentence from The Trembling of the Veil, in which Yeats sets down his reasons for rejecting a great part of Victorian poetry.

I saw ... that Swinburne in one way, Browning in another, and Tennyson in a third, had filled their work with what I called 'impurities', curiosities about politics, about science, about history, about religion; and that we must create once more the pure work.¹

Perhaps he is right. Perhaps Auden too is right to excise Spain, however meaningful to however many when written, from his latest Collected Poems.² Perhaps all poetry should be pure.

Yet Yeats clearly cannot mean (or if he does, then he is clearly wrong) that there is no room at all in poetry for politics, science, history, and religion. To take but a few examples, this would be to rule out of court some, much, or all of The Faerie Queene (and especially the Mutability Cantos, which view the passing of an old order of understanding with an even more fundamental concern than In Memoriam does), almost anything by Donne, Paradise Lost, Absalom and Achitophel, The Prelude, Don Juan, and Hellas, to say nothing of Pound's Cantos, Eliot's Waste Land and Four Quartets, the work of Auden et al. in the thirties - or Easter 1916! One must remember that Yeats is here issuing a manifesto to justify particular poems written by a particular person at a particular time and in reaction to other poems written by other persons, not defining the

nature and scope of poetry for all time. One must also look more closely at his use of the word "curiosities".

It was not exactly the eighteenth century tradition of "informative" verse which the Victorians revived; at least they felt no need of footnotes and appendices. But they did return to a ruminative cast of mind and style of verse. They used ideas or topics which were in the air or news, and which caught their intellectual interest or curiosity, as subjects for free-ranging poetic meditations. Thus Tennyson wrote of women's rights in The Princess, and of progress in Locksley Hall; thus Browning wrote of spiritualism in Mr. Sludge "The Medium", and of the nature of painting or art in Fra Lippo Lippi and Andrea del Sarto. Moreover, where the style (and, in the case of the dramatic monologues, the characterisation) is both good enough in itself and well-enough matched to the subject, the result can be satisfactory. We can still read Bishop Blougram's Apology, or Caliban on Setibos, with pleasure, aware of the cross-currents of belief and opinion to which they were a response, though not deriving the greater part of our pleasure from such awareness.

The other way in which Victorians incorporated "curiosities" or concepts drawn from politics, science, history, religion, and so forth, into their poems was to use them as illustrative material or images in a poem ostensibly about something else. Thus Tennyson uses geology in The Princess and Audley Court (pp. 150-1, 164-5) and in In Memoriam (pp. 152-3); thus Browning uses catastrophism and

evolution in Prince Hohenstiel-Schwangau (pp. 250-1, 254-6). This latter practice is only, in a sense, what John Donne and the metaphysicals did two centuries before, but at their best in so much less diffuse, so much more intense and incorporating a manner.

Turning, then, to those occasions when evolutionary theory or science is the "impurity" in question in these poems on which Yeats turned his back, its most successful appearance in Browning would seem to be in Paracelsus, where it forms the basis for the eloquent climax to an early poem which is by no means typical of Browning at his mature and distinctive best. Significantly, evolution for Browning at this stage is merely a vague extension backward into pre-human times of an ardent belief in progress. The subject makes only brief, oblique appearances (e.g. in Cleon and Rabbi Ben Ezra) in those poems of his maturity for which Browning is justly best remembered, where the didactic element is wholly expressed in terms of, and therefore subsumed into, the poetic and dramatic elements. When it reappears at any length, it is in poems such as Prince Hohenstiel-Schwangau, Fifine at the Fair, and Francis Furini, which are almost never reprinted or read by modern editors or readers. It should in fairness be admitted that other poems of this period which have nothing to do with evolution (such as Red Cotton Night-Cap Country) are at least equally prolix and unreadable. All one can safely say is that evolution did not attract Browning as a subject during that period when he was writing his best poetry, and that when later it did seem to preoccupy him during the writing of certain poems,

it did not inspire him to any higher levels of poetic achievement than had become the norm for that period in his life.

It seems to me that Swinburne on the other hand does succeed, through the impetus of the rhythms and through the sweepingly generalised imagery of Hertha, in capturing and conveying a real sense of the author's bravado in those early days of evolutionary theory - an emotion so remote from anything we are likely spontaneously to feel at the thought of man's sole responsibility for his own destiny, that our momentary surrender to the spirit of the poem is all the greater tribute.

Meredith, however, despite his even greater anxiety to be such than Swinburne, is a very poor poetic advocate or exponent of evolution. Earth and Man is perhaps his best poem in the genre - cogent and coherent throughout its length, and succeeding at times in establishing the sense of a personal, filial relationship between Man and Earth. But it remains very flat-footed and earthbound. In Hard Weather and A Thrush in February Meredith strikes off some fine lines or even stanzas, but does not build these into integrated poems. And in poems like The Woods of Westermain, A Faith on Trial, and The Test of Manhood, all of which begin compellingly, or at least forcefully and directly, and then lose themselves in obscurity and shapelessness, the same inability to maintain and structure a whole poem manifests itself. Even the images, Meredith's notorious mixed metaphors, fail to cohere; they jostle yet neither serve nor strike sparks off each other. Meredith can only write effective poetry, it

seems, in narrative form or passages of direct description. As soon as he tries to incorporate or follow a line of abstract thought he is lost, unless he holds hard to one personified relationship throughout, as in Earth and Man.

Tennyson and Hardy, the two remaining nineteenth century English poets considered in this study, are probably the ones who best succeeded in writing poetry which incorporates evolutionary ideas and which remains readable in its own right. In each case this is largely true because of one poem. Tennyson's late poems on evolution, and his references to the topic in poems such as The Princess or Maud, are of little or no consequence beside In Memoriam. Indeed, though quite untypical in many respects, and particularly in its stylistic restraint, of Tennyson's work as a whole, In Memoriam may be the work he is longest remembered for. For what is basically a series of lyrical meditations written over a long period of time, and subsequently rearranged, the poem has both structure and unity to a remarkable degree. And in its range, its honesty, and its limitations, it is a moving reflection of its age.

As for Hardy, he may be laughable when promulgating a cosmic myth in just a few quatrains, but in The Dynasts he comes nearer than anyone else to giving poetic utterance to that half-inarticulate body of nineteenth century philosophy and thought which was trying to arrive at a sense of organic system and necessity, in place of

either the no longer viable personal fiat of a deity, or the too rigidly mechanical notion of necessity developed in the eighteenth century, or any combination of these. And if the execution does not match or live up to the original conception, The Dynasts must still command our awe, like a vast, roofless folly which sketches forth in the mind its completed, perfect form just as surely as does a cathedral in ruins.

In neither of these poems could it be maintained for a moment that the scientific or philosophic content was a mere curiosity; in both cases evolution is a part, and a major part, of what the poets must wrestle with as having brought them to the verge of despair; in each instance the writer faces his dilemma with honesty and achieves, whether we are convinced by it or not, some sort of resolution within the poem.

NOTESChapter I, pp. 1-12.

1. Plato Selections, ed. Ralph Demos, N.Y. 1927, p. 371.
2. Ibid., p. 393.
- x 3. A. O. Lovejoy, The Great Chain of Being, Cambridge, Mass., 1936, p. 50.
4. Summa contra Gentiles, quoted by Lovejoy, op. cit., pp. 76-7.
5. John Locke, An Essay Concerning Human Understanding, ed. John W. Yolton, London (Everyman) 1961, vol. II, pp. 49-50 (bk. III, ch. VI, section 12).
6. Hugh Miller, The Old Red Sandstone, 7th edn., London 1858 (1st edn. 1841), pp. 68-9 (my italics).
7. Quoted by Lovejoy, op. cit., p. 197.
8. "Review of "A Free Enquiry into the Nature and Origin of Evil", The Literary Magazine, No. XV, 1757 (reprinted in The Works of Samuel Johnson, a New Edition in Twelve Volumes with an Essay on his Life and Genius by Arthur Murphy Esq., London 1806, vol. VIII, pp. 23-61.
9. Timon of Athens, I - i - 259.
10. John Ray, General History of Plants, quoted by John C. Greene, The Death of Adam, N.Y. (Mentor) 1961, p. 135.
11. Quoted by Greene, op. cit., p. 134.
12. Ibid., p. 139.

13. Ibid., p. 139.
14. These six points are a summary of Loren Eiseley's Darwin's Century, London 1959, pp. 35-8.
15. G. L. L. Buffon, Natural History, General and Particular, tr. William Smellie, corrected and enlarged by William Wood, London 1812, vol. I, p. 35.
16. Ibid., vol. V, p. 88.
17. Ibid., vol. IV, pp. 346-7 (The Dog).
18. Quoted by Lovejoy, op. cit., pp. 278-9.
19. The extract is taken from the chapter on The Ass in History of the Quadrupeds, and precisely because horse and ass seem closer related than almost any other pair of species, Buffon takes the occasion to protest that even the capacity to interbreed, if the results are sterile, is no indication of the sort of relationship which classifying different species as belonging to the same genus (as Linnaeus does) would seem to imply.
20. Buffon, op. cit., vol. V, pp. 160-4 (The Ass).
21. Jean Rostand, Esquisse d'une Histoire de la Biologie, Paris (Gallimard) 1945, p. 56.
22. Samuel Butler, in his anger with Darwin when he discovered how unLamarckian and mechanistic was the theory of natural selection, and in his consequent desire to unearth as many examples as possible of naturalists forestalling The Origin of Species (Evolution, Old and New), 1871), took the irony to be in Buffon's final paragraph - a self-protective irony. In this view Butler has been followed by

others, including for instance Loren Eiseley in Darwin's Century. And it is certainly true that Buffon had already been in trouble with the ecclesiastical authorities over those aspects of his theory of the origin of the earth which clashed with the biblical account of such matters, so he may well have been taking the opportunity, in the final paragraph quoted here, to throw a half-ironic sop in their direction. But the most closely documented attempt, on the basis of remarks scattered throughout his oeuvre, to establish Buffon as an evolutionist (J. S. Wilkie, "The Idea of Evolution in the Writings of Buffon", Annals of Science, vol. XII, nos. 1, 3 and 4, 1957) comes to the conclusion that the rest of this, Buffon's earliest and fullest resume of arguments potentially in favour of evolution, means just what it says - i.e. that to accept the validity of Linnaeus' genera is tantamount, ultimately, to admitting that all forms of life may be related to (and therefore derivable from) all other forms, and since we know this not to be true, Linnaeus is mistaken.

23. H. F. Osborne, From the Greeks to Darwin, Oxford 1894; E. Clodd, Pioneers in Evolution, from Thales to Huxley, London 1897.
24. It is desirable to examine the great domain of organized beings by means of a methodical comparative anatomy, in order to discover whether we may not find in them something resembling a system, and that too in connection with their mode of generation, so that we may not be compelled to stop short with a mere consideration of forms as they are, - which gives no insight into their generation, - and need not despair of gaining a

full insight into this department of nature. The agreement of so many animals in a certain common plan of structure, which seems to be visible not only in their skeletons but also in the arrangement of their other parts, - so that a wonderfully simple typical form, by the shortening or lengthening of some parts, and by the suppression and development of others, might be able to produce an immense variety of species, - gives us a ray of hope, though feeble, that here perhaps some results may be obtained, by the application of the principle of the mechanism of Nature; without which, in fact, no science can exist. This analogy of forms (in so far as they seem to have been produced in accordance with a common prototype, notwithstanding their great variety) strengthens the supposition that they have an actual blood relationship, due to derivation from a common parent; a supposition which is arrived at by observation of the graduated approximation of one class of animals to another, beginning with the one in which the principle of purposiveness seems to be most conspicuous, namely, man, and extending down to the polyps, and from these even down to mosses and lichens, and arriving finally at raw matter, the lowest stage of Nature observable by us. From this raw matter and its forces, the whole apparatus of nature seems to have been derived according to mechanical laws (such as those which resulted in the production of crystals); yet this apparatus, as seen in organic beings, is so incomprehensible to us, that we feel ourselves compelled to conceive for it a different principle. But it would seem that the Archeologist of Nature is at liberty to regard the great Family of creatures (for as a family we must conceive it, if the above mentioned continuous and connected relationship has a real foundation) as having sprung from the immediate results of her earliest revolutions, judging from all the laws of their mechanisms known to or conjectured by him.

I. Kant, Critique of Judgment, 1790, section 80, quoted by

Clodd, op. cit., pp. 87-8.

25. Rostand, op. cit., p. 57.

26. Mais, quand les difficultes qui environnent toutes ces questions laisseroient quelque lieu de disputer sur cette difference de l'homme et de l'animal, il y a un autre qualite tres specifique qui les distingue, et sur laquelle

il ne peut y avoir de contestation: c'est la faculte de se perfectionner, faculte qui, a l'aide des circonstances, developpe successivement toutes les autres et reside parmi nous tant dans l'espece que dans l'individu; au lieu qu'un animal est au bout de quelques mois ce qu'il sera toute sa vie, et son espece au bout de mille ans ce qu'elle etoit la premiere annee de ces mille ans.

Jean-Jacques Rousseau, Discours sur l'Origine et les Fondements de l'Inegalite parmi les Hommes (1745), Cambridge 1941, p. 36.

27. All the causes that contribute to the perfection of the human race, all the means that ensure it, must by their very nature exercise a perpetual influence and always increase their sphere of action... We may conclude then that the perfectibility of man is indefinite.

Marquis de Condorcet (Marie Jean Caritat), Sketch for a Historical Picture of the Progress of the Human Mind (1795), tr. June

Barraclough, London 1955, p. 199.

28. We know that we have made no discoveries, and we think that no discoveries are to be made, in morality; not many in the great principles of government, nor in the ideas of liberty, which were understood long before we were born, altogether as well as they will be after the grave has heaped mould upon our presumption, and the silent tomb shall have imposed its law on our pert loquacity.

Edmund Burke, Reflections on the Revolution in France, in The Works of Edmund Burke (Bohn edn.), London 1876, vol. II, p. 358.

29. It is an universal maxim that the more liberty is given to everything which is in a state of growth, the more perfect it will become.

Joseph Priestley, Prose Works (Bohn edn.), vol. II, p. 188, quoted by Basil Willey in The Eighteenth Century Background, London 1940, p. 199.

30. Government gives substance and permanence to our errors. It reverses the genuine propensities of the mind, and instead of suffering us to look forward, teaches us to look backward for perfection. It prompts us to seek the public welfare, not in innovation and improvement, but in a timid reverence for the decisions of our ancestors, as if it were the nature of mind always to degenerate, never to advance.

William Godwin, Enquiry concerning Political Justice, London 1793,

vol. I, p. 64 (bk. I, ch. 4).

31. On the whole, therefore, though our future prospects respecting the mitigation of the evils arising from the principle of population may not be so bright as we could wish, yet they are far from being entirely disheartening, and by no means preclude that gradual and progressive improvement in human society, which before the late wild speculations on this subject was the object of rational expectation.

T. R. Malthus, The Principles of Population, 8th edn. London 1878

(1st edn. 1798), p. 480.

32. Edward Gibbon, The Decline and Fall of the Roman Empire, ed. J. B. Bury, 3rd edn., London 1908, vol. IV, p. 169 (end of ch. 38).

33. The following is an extract from ch. V of Thomas Love Peacock's Melincourt, or Sir Oran Haut-Ton (with intro. by George Saintsbury, London 1896, p. 53), a novel in which he satirises Monboddo's views by introducing an orang-outang into English society and having him eventually enter parliament. In this extract only the words underlined are Peacock's own; the rest he admits to taking verbatim from Monboddo's Antient Metaphysics (Edinburgh, 1779-99, vol. III, pp. 41-2). Moreover, the French Horn is the only touch of fantasy which could not be supported by Monboddo's comments on closely adjacent pages.

Now I will only observe that if an animal who walks upright - is of the human form, both outside and inside, - uses a weapon for defence and attack - associates with his kind - makes huts to defend himself from the weather, better I believe than those of the New Hollanders - is tame and gentle - and instead of killing men and women, as he could easily do, takes them prisoners and makes servants of them - who has, what I think essential to the human kind, a sense of honour; which is shown by breaking his heart, if laughed at, or made a show, or treated with any kind of contumely - who, when he is brought into the company of civilized men, behaves (as you have seen) with dignity and composure, altogether unlike a monkey; from whom he differs likewise in this material respect, that he is capable of great attachment to particular persons, of which the monkey is altogether incapable; and also in this respect, that a monkey never can be so tamed that we can depend on his not doing mischief when left alone, by breaking glasses or china within his reach, whereas the orang outang is altogether harmless; - who has so much the docility of a man that he learns to not only to do the common offices of life, but also to play on the flute and French Horn; which shows that he must have an idea of melody and concord of sounds, which no brute animal has; - and lastly, if joined to all these qualities he has the organ of pronunciation, and consequently the capacity of speech, though not the actual use of it; if, I say, such an animal be not a man, I should desire to know in what the essence of a man consists, and what it is that distinguishes a natural man from the man of art.

This is, of course, a summary by Monboddo of sundry travellers' tales concerning the orang outang - tales which he has recounted at greater length earlier in the book. Its use by Peacock shows how such views were widely enough known in 1817 to call forth and sustain a satirical treatment of them. It also probably indicates the amused disrespect in which all such notions (little if any distinction being in all likelihood made between Monboddo and Erasmus Darwin) were held at that time by most educated Englishmen.

- vol. IV (1795)), p. 32.
35. Ibid., vol. III (1784), p. 363, and idem, Of the Origin and Progress of Language, Edinburgh 1773-92, vol. I (2nd edn. 1774), p. 361.
36. Condorcet, op. cit., pp. 199-201.
37. J. B. Robinet, De La Nature V - Vue Philosophique de la gradation naturelle des formes de l'etre, les Essais de la Nature qui apprend a faire l'homme, (1768), quoted by Lovejoy, op. cit. p. 280.
38. Erasmus Darwin, Zoonomania, 3rd edn., London 1801 (1st edn. 1794-6), vol. II, pp. 245-6.
39. P. Lamarck, Zoological Philosophy, tr. Hugh Elliot (from Philosophie Zoologique, 1809), London 1914, pp. 186-7.
40. These are four categories of Darwin's own devising, under which he classifies all bodily actions, functions and diseases, and which he tends to drag in by the ears whenever possible.
41. Darwin, op. cit., vol. II, p. 240.
42. Lamarck, op. cit., p. 2.
43. Desmond King-Hele, Erasmus Darwin, London 1963.
44. Some nations of Asia have small hands, as may be seen by the handles of their scymetors; which with their narrow shoulders show, that they have not been accustomed to so great labour with their hands and arms, as the European nations in agriculture, and those on the coasts of Africa in swimming and rowing. Dr. Manningham, a popular accoucheur in the beginning of this century, observes in his aphorisms that broad-shouldered

men procreate broad-shouldered children. Now as labour strengthens the muscles employed, and increases their bulk, it would seem that a few generations of labour or of indolence may in this respect change the form and temperament of the body.

E. Darwin, op. cit., vol. II, pp. 13-14.

45. Ibid., vol. II, pp. 236-8.

46. Herb, shrub, and tree, with strong emotions rise
 For light and air, and battle in the skies;
 Whose roots diverging with opposing toil
 Contend below for moisture and for soil;
 Round the tall Elm the flattering Ivies bend,
 And strangle, as they clasp, their struggling friend;
 Ev' venom'd dews from Macinella flow
 And scald with caustic touch the tribes below;
 Dense shadowy leaves on stems aspiring borne
 With blight and mildew thin the realms of corn;
 And insect hordes with restless tooth devour
 The unfolded bud, and pierce the ravell'd flower.

In ocean's pearly haunts, the waves beneath,
 Sits the grim monarch of insatiate Death;
 The shark rapacious with descending blow
 Darts on the scaly brood, that swims below;
 The crawling crocodiles, beneath that move,
 Arrest with rising jaws the tribes above;
 With monstrous gape sepulchral whales devour
 Shoals at a gulp, a million in an hour.
 - Air, earth, and ocean, to astonish'd day
 One scene of blood, one mighty tomb display!
 From hunger's arm the shafts of Death are hurl'd,
 And one great slaughter-house the warring world.

Erasmus Darwin, The Temple of Nature, London 1803, canto IV,

ll. 41-64.

47. Darwin, Zoonomania, vol. II, pp. 240 and 318.

X

1. Alexander Pope, An Essay on Man, ed. Maynard Mack (vol. III^{of} of The Twickenham Edn., gen. ed. John Butt), London 1950, bk. I, ll. 207-28.
2. James Thomson, The Seasons, ed. Anthony Todd Thomson, London 1847, Summer, ll. 318-41.
3. Edward Young, The Complaint, or Night Thoughts, ed. Rev. George Gilfillan, Edinburgh 1853, Night the First, ll. 74-5.
4. Pope. op. cit., bk. III, ll. 7-26.
5. Ibid., bk. III, ll. 147-68.
6. Henry Brooke, Universal Beauty (in The Works of the English Poets from Chaucer to Cowper, London (Chalmers) 1810, vol. XVII), note to bk. V, l. 162.
7. Ibid., bk. III, ll. 92-110.
8. E. Darwin, Zoonomania, vol. II, pp. 217-18.
9. Sir Richard Blackmore, Creation, 2nd edn., London 1712, pp. 281-2 (bk. VI, ll. 280-98 in The Wks. of Eng. Poets from Chaucer to Cowper, vol. X).
10. Henry Baker, The Universe, 1728 edn. p. 22 (quoted by G. R. Potter in "Mark Akenside, a Prophet of Evolution", Modern Philology, vol. XXIV, p. 61).
11. Young, Night Thoughts, I, ll. 123-31.
12. Ibid., VI,
13. Ibid., IX,

14. Oliver Goldsmith, An History of the Earth and Animated Nature, London 1774, vol. IV, pp. 203-4 (my italics).
15. Ibid., vol. II, pp. 374-5.
16. Ibid., vol. IV, p. 135.
17. The Poetical Works of Mark Akenside, ed. Rev. Alexander Dyce, London 1834, p. 305.
18. Douglas Bush, Science and English Poetry, N.Y. (O.U.P.) 1950, p. 71.
19. G. Potter, "Mark Akenside a Prophet of Evolution", Modern Philology, vol. XXIV, pp. 55-64.
20. Mark Akenside, The Pleasures of Imagination (in Poetical Works, ed. Dyce) bk. I, ll. 201-6.
21. Ibid., bk. I, ll. 59-77.
22. Ibid., bk. II, ll. 308-37.
23. Ibid., bk. I, ll. 212-26.
24. Ibid., bk. II, ll. 337-63.
25. Idem, The Pleasures of the Imagination, bk. II, ll. 234-77.
26. Bush, op. cit., pp. 71-2.
27. O Adam, one Almighty is, from whom
 All things proceed, and up to him return,
 If not depriv'd from good, created all
 Such to perfection, one first matter all,
 Indu'd with various forms, various degrees
 Of substance, and in things that live, of life;
 But more refin'd, more spiritous, and pure,
 As neerer to him plac't or neerer tending
 Each in thir several active Sphears assign'd,
 Till body up to spirit work, in bounds
 Proportiond to each kind. So from the root
 Springs lighter the green stalk, from thence the leaves
 More aerie, last the bright consummate floure

Spirits odorous breathes: flours and thine fruit
 Man's nourishment, by gradual scale sublim'd
 To vital spirits aspire, to animal,
 To intellectual, give both life and sense,
 Fancie and understanding, whence the soule
 Reason receives, and reason is her being...

John Milton, Paradise Lost (in The Poetical Works of John Milton,
 ed. H. C. Beeching, new edn. London 1941), bk. V, ll. 469-87.

28. Akenside, Poetical Wks., p. 74.

29. Idem, The Pleasures of Imagination, bk. II, ll. 242-54.

30. Pope, op. cit., bk. I, ll. 241-4.

31. Akenside, The Pleasures of Imagination, bk. I, ll. 219-21.

32. But why so violent against metaphysics in poetry? Is
 not Akenside's a metaphysical poem? Perhaps you do not like
 Akenside - well - but I do - and so do a great many others...

Collected Letters of Samuel Taylor Coleridge, ed. Earl Leslie
 Griggs, Oxford 1956-9, vol. I, p. 215.

33. Erasmus Darwin, The Temple of Nature, London 1803, canto I,
 ll. 89 ff.

34. Ibid., canto I, ll. 251-64.

35. Ibid., canto I, ll. 244.

36. Ibid., canto I, l. 278.

37. Ibid., canto I, l. 325.

38. Idem, The Botanic Garden (Pt. I, The Economy of Vegetation),
 London 1791, canto I, l. 111.

39. Alexander Pope, The Rape of the Lock, ed. Geoffrey Tillotson
 vol. II of The Twickenham Edn.), London 1940, canto I, ll. 101-2.

40. The Complete Works of Samuel Taylor Coleridge, ed. W. G. T. Shedd, N.Y. 1884, vol. III, p. 155 (Biographia Literaria, ch. I).
41. Darwin, Botanic Garden, Pt. II, canto I, ll. 103-12.
42. Ibid., canto II, ll. 33-8.
43. Ibid., canto II, ll. 575-84.
44. It seems: (a) that Darwin and his contemporaries did not distinguish at all clearly between the genetic, sexual reproduction of plants (through seed), and the annual growth from bulbs or buds; (b) that the miniature form of next year's plant, discernible in certain bulbs (the reference to three successive generations being visible within the same bulb, if not mere speculation, must surely be based on the daughter bulblets which sometimes form round the base of the original, parent bulb) was therefore taken as confirmatory evidence of the theory of preformationism; and (c) that this in some turn gave rise to some licence in the interpretation of dissections of seeds and buds.
45. Darwin, Botanic Garden, Pt. II, canto II, ll. 381-94.
46. Norton Garfinkle, "Science and religion in England, 1790-1800: the critical response to the works of Erasmus Darwin", Journal of the History of Ideas, vol. XVI, no. 3, pp. 376-88.
47. See Appendix A.
48. Darwin, The Temple of Life, canto I, ll. 295-314.
49. Where climate is favourable, and salubrious food plentiful, there is reason to believe, that the races of animals perpetually improve by reproduction. The smallest microscopic

animals become larger ones in a short time, probably by successive reproductions, as is so distinctly seen in the buds of seedling apple trees, and in the bulbs of tulips raised from seed; both of which die annually, and leave behind them one or many, which are more perfect than themselves, till they produce a sexual progeny, or flowers. To which may be added, the rapid improvement of our domesticated dogs, horses, rabbits, pigeons, which improve in size, or in swiftness, or in the sagacity of the sense of smell, or in colour, or other properties, by sexual reproduction...

But it may appear too bold in the present state of our knowledge on this subject, to suppose that all vegetables and animals now existing were originally derived from the smallest microscopic ones, formed by spontaneous vitality? and that they have by innumerable reproductions, during innumerable centuries of time, gradually acquired the size, strength, and excellence of form and faculties, which they now possess? and that such amazing powers were originally impressed on matter and spirit by the great Parent of Parents! Cause of Causes! Ens Entium!

Erasmus Darwin, The Temple of Life, pp. 36-7 of Additional Notes (note on Reproduction).

50. Ibid., canto I, ll. 107-10.

51. Ibid., canto I, ll. 107-10.

51. Ibid., canto II, ll. 313-26.

52. See pp. 105-6.

53. Darwin, The Temple of Life, canto III, ll. 93-126.

54. Ibid., canto IV, ll. 393-404.

1. Quoted by Eiseley in Darwin's Century, p. 38.
2. Ibid., p. 79.
3. Quoted as a footnote by Herbert Spencer in The Factors of Organic Evolution, London 1887, pp. 1-2.
4. Charles Lyell, The Principles of Geology, London 1830-3, vol. II, pp. 62-3.
5. G. R. de Beer, "Recapitulation", Chambers Encyclopaedia, London 1955, vol. XI, pp. 546-7.
6. Louis Agassiz, The Structure of Animal Life (Lectures delivered at the Brooklyn Academy of Music, 1862), London 1866, pp. 106-8.
7. Quoted by Lyell, op. cit., vol. I, p. 61.
8. Ibid., vol. II, p. 131.
9. Charles Darwin, An Historical Sketch of the Progress of Opinion on the Origin of Species, prefaced to The Origin of Species, 6th edn. popular impression, London 1900, pp. xx-xxii.
10. G. M. Young, Portrait of an Age, 2nd edn., London 1953, p. 74.
11. Anon (Robert Chambers), Vestiges of the Natural History of Creation, 2nd edn., London 1844, pp. 219-20.
12. C. Darwin, op. cit., p. xxiv.
13. Idem: Autobiography, London 1958 (1887 in Life & Letters of Darwin), pp. 118-122.
14. Charles Darwin and Alfred Russel Wallace, Evolution by Natural Selection, with a foreword by Sir Gavin de Beer, Cambridge 1958, pp. 277-8.

15. A good account both of the father's views and of the part these played in the relationship between father and son is found in Edmund Gosse's Father and Son (1907).
16. Quoted by Georg Ropen in Evolution and Poetic Belief, Oslo 1956, p. 149.
17. Anthropological Review, 1864, vol. II, pp. clviii-clxxxvii.
18. Charles Darwin, The Descent of Man, 2nd edn., London 1883, pp. 128-9.
19. Walter Bagehot, Physics and Politics, 4th edn., London 1876, p. 43.
20. The extremes to which this attitude could be taken are here illustrated by T. H. Huxley writing of the minute constituents of the living body, and apparently oblivious to the harmony and degree of co-operation which must exist between them, as he argues that
- what the world is to organisms in general each organism is to the molecules of which it is composed. Multitudes of these, having diverse tendencies, are competing with one another for opportunity to exist and multiply; and the organism, as a whole, is as much the product of the molecules which are victorious as the Fauna, or Flora of a country is the product of the victorious organic beings in it.
- Life and Letters of Charles Darwin, ed. Francis Darwin, London 1887, vol. III, p. 119.
21. Grant Allen, Vignettes from Nature, London 1881, p. 88.
22. Bagehot, op. cit., p. 44.
23. Ibid., p. 207.
24. Herbert Spencer, Principles of Sociology, 2nd edn., London 1877, vol. I (Synthetic Philosophy, vol. VI), pp. 9-10.

25. To be fair to Spencer, he was willing to concede (op. cit., vol. I, p. 10) that "the strict proportioning of rewards to merits may be tempered by private sympathy in favour of the inferior." Nevertheless, he still held that "nothing but evil can result if this strict proportioning is so interfered with by public arrangements, that demerit profits at the expense of merit."
26. Herbert Spencer, "Progress: Its Law and Cause" (Westminster Review, April 1857), in Essays: Scientific, Political and Speculative, London 1868, vol. I, pp. 2-3.
27. G. H. Lewes, A Biographical History of Philosophy, London 1845-6, vol. IV, pp. 249-50.
28. G. Hegel, Introduction to the Philosophy of History, tr. J. Sibree, in Hegel Selections, ed. J. Loewenberg, London (Scribner) 1929, pp. 408-9 and 412.
29. George Eliot's Life as related in her Letters and Journals, ed. J. W. Cross, Edinburgh 1885, vol. II, pp. 147-8 (letter dated 5 Dec., 1859).
30. John Baillie, The Belief in Progress, London 1950, pp. 127 & 130.
31. See Lovejoy, op. cit., (The Great Chain of Being), p. 318.
32. Henri Bergson, Creative Evolution, tr. Arthur Mitchell, London 1911, p. 28.
33. Quoted by Eiseley, op. cit., p.
34. T. H. Huxley, Evolution and Ethics (Romanes Lecture of 1893), London 1893, pp. 32-~~4~~.

1. The Complete Poetical Works of Percy Bysshe Shelley, ed. Thomas Hutchinson, London 1905, reset 1943, p. 602.
2. The Poems of William Wordsworth, ed. Nowell C. Smith, London 1908, vol. III, p. 492.
3. Ibid., vol. III, p. 203 (The Excursion, bk. VII, ll. 999-1007).
4. Ibid., vol. III, p. 108 (The Excursion, bk. IV, ll. 332-43).
5. Both I and Mrs. Coleridge have carefully watched our little one and noted down all the circumstances etc., under which he smiled and under which he laughed for the first six times - nor have we remitted our attention-- but I have not been able to derive the least confirmation of Hartley's or Darwin's theory.

Collected Letters, vol. I, p. 363.
6. See Notebooks of Samuel Taylor Coleridge, ed. Kathleen Coburn, p. 2912 n. See also below, Ch. IV, n. 28.
7. Table Talk, ed. H. N. Coleridge, 1835, June 29 1833.
8. Collected Letters, vol. I, pp. 517-18.
9. Complete Wks. of S.T.C., ed. Shedd, vol. II, p. 362 (Intro. to 2nd Section of The Friend).
10. Ibid., vol. II, pp. 449-50 (Essay X in 2nd Section of The Friend).
11. G. R. Potter, "Coleridge and the Idea of Evolution", PMLA, vol. XL, pp. 379-97.
12. Quarterly Journal of Foreign Medicine and Surgery, vol. I (1818-19), p. 89, Art. IX, quoted by Potter, loc. cit., p. 385.

13. Quoted by Potter, loc. cit., p. 385, from Notes Theological, Political and Miscellaneous.
14. Collected Letters, vol. IV, pp. 574-5.
15. Undated extract from an unpublished notebook, quoted by Alice D. Synder in "Coleridge on Giordano Bruno", Modern Language Notes, vol. XLII, p. 431.
16. S. T. Coleridge, Hints towards the formation of a more comprehensive Theory of Life, ed. Seth B. Watson, London 1848, pp. 36-7 (Complete Wks., vol. I, pp. 383-4).
17. Anima Poetae, ed. E. H. Coleridge, London 1895, p. 294.
18. The Poems of Samuel Taylor Coleridge, ed. Derwent and Sara Coleridge, London 1869, p. 52.
19. Ibid., pp. 243-4.
20. Ibid., p. 279.
21. In particular that of Kant and Schelling.
22. The Complete Poetical Works of Byron, ed. Paul E. More, Cambridge, Mass., 1933, p. 254.
23. Ibid., p. 627.
24. Ibid., p. 901.
25. Ibid., p. 298.
26. The Complete Works of Percy Bysshe Shelley, ed. Roger Ingpen and Walter E. Peck, N.Y. 1926, vol. VIII, p. 135 (letter to Thomas Jefferson Hogg, undated - ?July 28, 1811).

27. Ibid., vol. IX, pp. 34 & 36 (letters to Thomas Hookham & Clio Rickman dated Dec. 17 & Dec. 24 respectively, 1812).
28. Coleridge is very explicit on the subject of Erasmus Darwin's scepticism.

Dr. Darwin would have been ashamed to have rejected Hutton's Theory of the earth without having minutely examined it; yet what is it to us how the earth was made, a thing impossible to be known, and useless if known? This system the doctor did not reject without having severely studied it; but all at once he makes up his mind on such important subjects, as whether we be the outcasts of a blind idiot called Nature, or the children of an all-wise and infinitely good God; whether we spend a few miserable years on this earth, and then sink into a clod of the valley, or only endure the anxieties of mortal life in order to fit us for the enjoyment of immortal happiness. These subjects are unworthy a philosopher's investigation. He deems that there is a certain self-evidence in infidelity, and becomes an atheist by intuition.

Collected Letters, vol. I, p. 99.

29. Complete Wks. of Shelley (ed. Ingpen & Peck), vol. IX, p. 11.
30. Complete Poetical Wks. of Shelley (ed. Hutchinson), p. 261
(Prometheus Unbound, Act IV, ll. 278-318).
31. Poems and Verses of John Keats, ed. John Middleton Murray, 2nd edn., London 1949, p. 241 (Epistle to John Hamilton Reynolds).
32. The Works of Thomas Lovell Beddoes, ed. H. W. Donner, Oxford 1935, pp. 471-2.

1. Alfred Lord Tennyson, A Memoir, by his son, London 1897, vol. I, p. 20.
2. Ibid., vol. I, p. 40.
3. Ibid., vol. I, p. 120.
4. The Works of Tennyson, annotated by Alfred Lord Tennyson, ed. Hallam Lord Tennyson, (the Eversley Edn.), London 1907-8, vol. IV, p. 27.
5. A Memoir, vol. I, p. 29.
6. Works, vol. IV, p. 56.
7. Ibid., vol. I, p. 289.
8. Ibid., vol. I, p. 254.
9. Ibid., vol. IV, p. 88.
10. A Memoir, vol. I, p. 85.
11. Works, vol. I, p. 123.
12. Ibid., vol. III, p. 165.
13. Ibid., vol. III, p. 74.
14. Ibid., vol. III, p. 169.
15. A Memoir, vol. I, pp. 277-8.
16. Ibid., vol. I, p. 44.
17. Ibid., vol. I, pp. 119-20.
18. Works, vol. III, p. 184.
19. Ibid., vol. VI, p. 177.
20. Ibid., vol. IV, pp. 158-9.

21. Ibid., vol. III, pp. 220-1, and A Memoir, vol. I, p. 324.
22. A Memoir, vol. I, p. 17.
23. Ibid., vol. I, p. 16.
24. Ibid., vol. I, p. 162.
25. Ibid., vol. I, pp. 222-3.
26. Ibid., vol. I, p. 356.
27. Ibid., vol. I, p. 379.
28. Ibid., vol. I, p. 443.
29. Ibid., vol. II, p. 386.
30. G. R. Potter, "Tennyson and the Biological Theory of Mutability in Species", Philological Quarterly, vol. XVI, pp. 321-43.
31. William Whewell, History of the Inductive Sciences, London 1837, vol. III, p. 452, and Indications of the Creator, London 1845, p. 26.
32. Charles Lyell, Principles of Geology, London 1830-33, vol. II (1832), p. 63 (acknowledged to be a summary of relevant passages from E. R. A. Serres, Anatomie Comparee du Cerveau, 1824).
33. See Potter, loc. cit., p. 336 n.
34. Ibid., p. 336, and Alfred Tennyson, Poems, London 1842, vol. I, p. 148.
35. Lionel Stevenson, Darwin Among the Poets, reissued N.Y. 1963, pp. 65-6.
36. Works, vol. VII, p. 91.

37. Ibid., vol. VII, p. 38.
38. A Memoir, vol. I, p. 323, and Works, vol. III, p. 220.
39. Works, vol. IV, pp. 54-5.
40. Potter, loc. cit., pp. 341-2.
41. Graham Hough, "The Natural Theology of In Memoriam", The Review of English Studies, vol. XXIII, p. 246.
42. Works, vol. I, p. 245.
43. Ibid., vol. IV, p. 159.
44. Ibid., vol. VI, p. 177.
45. Ibid., vol. III, pp. 91-4.
46. Ibid., vol. III, pp. 164-6.
47. A Memoir, vol. II, p. 474.
48. Works, vol. VII, p. 176.
49. Ibid., vol. III, p. 167.
50. Ibid., vol. III, p. 262.
51. Ibid., vol. IV, p. 28.
52. Ibid., vol. III, pp. 183-4.
53. Ibid., vol. IV, p. 158.
54. Ibid., vol. VII, p. 375.
55. Ibid., vol. II, pp. 192-3.
56. Ibid., vol. II, pp. 207-8.
57. Ibid., vol. VII, pp. 268-9.
58. A Memoir, vol. II, p. 57.
59. Works, vol. VII, p. 176.

60. Works, vol. VI, p. 298.
61. Ibid., vol. VI, pp. 291-2.
62. Ibid., vol. VI, p. 296.
63. Ibid., vol. VII, p. 107 (Parnassus).
64. William Rutland, "Tennyson and the Theory of Evolution", Essays and Studies, vol. XXVI, p. 8.
65. Hough, loc. cit., p. 251.
66. Rutland, loc. cit., p. 18.
67. Works, vol. II, pp. 47-8.
68. Ibid., vol. II, pp. 48-9.
69. Ibid., vol. II, p. 28 (Ulysses).
70. Ibid., vol. II, pp. 44-6 (my italics).
71. Harold Nicolson, Tennyson: Aspects of his Life, Character and Poetry, London 1923, p. 15.
72. A Memoir, vol. I, p. 300.
73. Ibid., vol. I, p. 304.
74. Works, vol. VI, pp. 402-3.
75. Ibid., vol. VI, p. 399, and A Memoir, vol. II, p. 319.
76. Works, vol. VI, pp. 227, 229 & 233.
77. Ibid., vol. III, p. 43.
78. Ibid., vol. III, p. 74.
79. Ibid., vol. III, p. 73. (Section XXXIV).
80. Ibid., vol. III, p. 85 (Section XLVII).
81. Ibid., vol. III, p. 91 (Section LIV).

NOTES (cont.)Chapter V, pp. 199-
201.

82. Works, vol. III, pp. 170-1 (Section CXXIV).
83. Ibid., vol. III, p. 168. (Section CXXIII).
84. Ibid., vol. III, p. 169.
85. Ibid., vol. III, p. 173 (Section CXXVII).
86. Ibid., vol. III, pp. 173-4 (Section CXXVIII).

1. The Poetical Works of Robert Browning, ed. Augustine Birrell, London (Smith & Elder) 1908, vol. I, p. 202.
2. Works, vol. II, p. 773.
3. Ibid., vol. I, p. 5.
4. Ibid., vol. I, p. 11.
5. Ibid., vol. I, p. 183.
6. Ibid., vol. I, pp. 542-3.
7. Ibid., vol. II, p. 234.
8. Ibid., vol. I, p. 151.
9. Ibid., vol. II, pp. 359-60.
10. Ibid., vol. I, p. 578.
11. Ibid., vol. I, p. 70.
12. Ibid., vol. I, p. 169.
13. Ibid., vol. I, pp. 169-70.
14. Ibid., vol. I, p. 590.
15. Ibid., vol. I, p. 592.
16. Ibid., vol. I, p. 269.
17. Ibid., vol. II, p. 550.
18. Ibid., vol. I, pp. 579-80.
19. Ibid., vol. I, pp. 580-1.
20. Ibid., vol. I, p. 186.
21. Ibid., vol. I, p. 187.
22. Ibid., vol. II, p. 300.
23. Ibid., vol. II, p. 235.

24. Henry Jones, Browning as a Philosophic and Religious Thinker, Glasgow 1891, pp. 138. & 142.
25. Ibid., pp. 218-9.
26. Works, vol. II, p. 741.
27. Ibid., vol. I, p. 270.
28. Letters of Robert Browning, collected by Thomas J. Wise, ed. Thurman l. Hood, New Haven 1933, pp. 199-200 (letter to Dr. F. J. Furnival from Venice, Oct. 11, 1881).
29. Works, vol. I, p. 194.
30. William Clyde De Vane, A Browning Handbook, 2nd edn., N.Y. 1955, p. 55.
31. Stevenson, op. cit., pp. 126-7.
32. The Hermetical and Alchemical Writings of Aureolus Phillipus Theophrastus Bombast, of Hohenheim, called Paracelsus the Great, ed. Arthur Edward Waite, London 1894, vol. I, p. 239.
33. Ibid., vol. II, p. 293.
34. Ibid., vol. I, pp. 239-40.
35. Works, vol. I, p. 69.
36. Ibid., vol. I, p. 69.
37. Ibid., vol. I, pp. 69-70.
38. Ibid., vol. I, p. 70.
39. Ibid., vol. I, p. 70.
40. Ibid., vol. I, pp. 70-1.
41. Ibid., vol. I, p. 71.

NOTES (cont.)Chapter VI, pp. 233-56.

42. Works, vol. I, p. 71.
43. Ibid., vol. I, p. 71.
44. Ibid., vol. I, p. 71.
45. Ibid., vol. I, p. 72.
46. Ibid., vol. I, p. 72.
47. Ibid., vol. I, p. 463.
48. Ibid., vol. I, p. 463.
49. Ibid., vol. I, p. 545.
50. Ibid., vol. I, p. 544.
51. Ibid., vol. I, p. 544.
52. Ibid., vol. II, p. 694.
53. Ibid., vol. I, p. 587.
54. Ibid., vol. I, pp. 580-1.
55. Ibid., vol. I, p. 581.
56. Ibid., vol. I, p. 539.
57. Ibid., vol. I, p. 618.
58. Letters, p. 145.
59. Ibid., p. 152.
60. Works, vol. II, p. 296.
61. Ibid., vol. II, p. 304.
62. Ibid., vol. II, pp. 304-5.
63. Ibid., vol. II, p. 305.
64. Ibid., vol. II, p. 305.

65. It is also, virtually, what Agassiz maintains (see pp. 80-1).
66. Works, vol. II, p. 329.
67. Ibid., vol. II, p. 339.
68. Ibid., vol. II, p. 358.
69. Ibid., vol. II, p. 361.
70. Norton B. Crowell, The Triple Soul: Browning's Theory of Knowledge, Univ. of New Mexico Press 1963, p. 51.
71. Georg Roppen, Evolution and Poetic Belief, Oslo 1956, p. 147.
72. Works, vol. II, p. 361.
73. Ibid., vol. II, p. 366.
74. Ibid., vol. II, p. 368.
75. Ibid., vol. II, p. 691.
76. Ibid., vol. II, p. 693.
77. William Clyde De Vane, Browning's Parleyings, New Haven 1927, p. 199.
78. Works, vol. II, p. 694.
79. Ibid., vol. II, p. 705.
80. Ibid., vol. II, p. 713.
81. Ibid., vol. II, pp. 713-14.
82. Ibid., vol. II, p. 714.
83. Ibid., vol. II, p. 714.
84. Ibid., vol. II, p. 715.
85. Ibid., vol. II, p. 715.
86. Ibid., vol. II, p. 715.

NOTES (cont.)Chapter VI, pp. 273-81.

87. Works, vol. II, p. 715.
88. Ibid., vol. II, pp. 715-16.
89. Ibid., vol. II, p. 716.
90. Ibid., vol. II, p. 716.
91. Ibid., vol. II, p. 769.
92. Ibid., vol. II, p. 770.
93. Ibid., vol. II, p. 771.
94. Ibid., vol. II, p. 771.
95. Ibid., vol. II, p. 772.
96. Ibid., vol. II, p. 772.
97. Ibid., vol. II, p. 771.
98. J. M. Cohen, Robert Browning, London 1952, p. 166.

1. Frederick William Conner, Cosmic Optimism, Gainesville (Univ. of Florida Press) 1949, p. 96.
2. Emerson's Complete Works, London 1886-9 (Riverside Edn.), vol. III, pp. 172-3.
3. Ibid., vol. IX, p. 56.
4. Ibid., vol. IX, p. 57.
5. Ibid., vol. I, pp. 194-5.
6. And, willing to be God, the worm
 Flees through all the spires of form. (1845)

Conner, op. cit., p. 49.
7. Works, vol. I, p. 7.
8. Who shall tell what did befall
 Far away in time when once,
 Over the lifeless ball,
 Hung idle stars and suns?
 When God the element obeyed?
 Wings of what wind the lichen bore,
 Wafting the puny seeds of power,
 Which, lodged in rock, the rock upbraid?
 And well the primal pioneer
 Knew the strong task to it assigned,
 Patient through Heaven's enormous year
 To build in matter home for mind.
 From air the creeping centuries drew
 The matted thicket low and wide,
 This must the leaves of ages strew
 The granite slab to clothe and hide,
 Ere wheat can wave its golden pride.
 What smiths, and in what furnace, rolled
 (In dizzy aeons dim and mute
 The reeling brain can ill-compute)
 Copper and iron, lead and gold?
 What oldest star the fame can save
 Of races perishing to pave
 The planet with a floor of lime?
 Dust is their pyramid and mole:
 Who saw what ferns and palms were pressed
 Under the tumbling mountain's breast,

In the safe herbal of the coal?
 But when the quarried means were piled,
 All is waste and worthless, till
 Arrives the wise selecting will,
 And, out of shine and chaos, Wit
 Draws the threads of fair and fit.
 Then temples rose, and towns, and marts,
 The shop of toil, the hall of arts;
 Then flew the sail across the seas
 To feed the north from tropic trees;
 The storm-wind wove, the torrent span,
 Where they were bid the rivers ran;
 New slaves fulfilled the poet's dream,
 Galvanic wire, strong-shouldered steam.
 Then docks were built, and crops were stored,
 And ingots added to the hoard.
 But, though light-headed man forget,
 Remembering Matter pays her debt:
 Still, though her motes and masses draw
 Electric thrills and ties of Law,
 Which bind the strengths of Nature wild
 To the conscience of a child.

Works,

9. Ibid., vol. IX, pp. 209-12.
10. Conner, op. cit., p. 50.
11. Walt Whitman, Leaves of Grass, ed. S. Bradley & H. W. Blodgett,
 London 1966, p. 460.
12. Ibid., p. 555.
13. Ibid., p. 57.
14. Ibid., p. 44.
15. Ibid., p. 50.
16. Ibid., p. 60.
17. Ibid., p. 59.
18. Ibid., pp. 80-1.
19. Ibid., p. 19.
20. Ibid., p. 86.
21. Ibid., p. 101.

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APPENDIX AExtract from THE TEMPLE OF NATURE, Canto I, by Erasmus Darwin.

By firm immutable immortal laws
 Impress'd on Nature by the GREAT FIRST CAUSE,
 Say, Muse! how rose from elemental strife
 Organic forms, and kindled into life;
 How Love and Sympathy with potent charm
 Warm the cold heart, the lifted hand disarm;
 Allure with pleasures, and alarm with pains,
 And bind Society in golden chains... 8

"First, if you can, celestial Guide! disclose 215
 From what fair fountain mortal life arose,
 Whence the fine nerve to move and feel assign'd,
 Contractile fibre, and ethereal mind:

"How Love and Sympathy, the bosom warm,
 Allure with pleasure, and with pain alarm, 220
 With soft affections weave the social plan,
 And charm the listening Savage into Man."

"GOD THE FIRST CAUSE! - in this terrene abode
 Young Nature lisps, she is the child of God.
 From embryon births her changeful forms improve,
 Grow, as they live, and strengthen as they move.

"Ere time began, from flaming chaos hurl'd
 Rose the bright spheres, which form the circling world;
 Earths from each sun with quick explosions burst,
 And second planets issued from the first. 230
 Then, whilst the sea at their coeval birth,
 Surge over surge, involved the shoreless earth;
 Nurs'd by warm sun-beams in primeval caves
 Organic life began beneath the waves.

First HEAT from chemic dissolution springs,
 And gives to matter its eccentric wings;
 With strong Repulsion parts the exploding mass,
 Melts into lymph, or kindles into gas.
 ATTRACTION next, as earth or air subsides,
 The ponderous atoms from the light divides, 240
 Approaching parts with quick embrace combines,
 Swells into spheres, and lengthens into lines.
 Last, as fine goads the gluten-threads excite,
 Cords grapple cords, and webs with webs unite;

And quick CONTRACTION with ethereal flame
 Lights into life the fibre-woven frame. -
 Hence without parent by spontaneous birth
 Rise the first specks of animated earth;
 From Nature's womb the plant or insect swims,
 And buds or breathes, with microscopic limbs. 250

"In earth, sea, air, around, below, above,
 Life's subtle woof in Nature's loom is wove;
 Points glued to points a living line extends,
 Touch'd by some goad approach the bending ends;
 Rings join to rings, and irritated tubes
 Clasp with young lips the nutrient globes or cubes;
 And urged by appetencies new select,
 Imbibe, retain, digest, secrete, eject.
 In branching cones the living web expands,
 Lymphatic ducts, and convoluted glands; 260
 Aortal tubes propel the nascent blood,
 And lengthening veins absorb the refluent flood;
 Leaves, lungs, and gills, the vital ether breathe
 On earth's green surface, or the waves beneath.
 So life's first powers arrest the winds and floods,
 To bones convert them, or to shells, or woods;
 Stretch the vast beds of argil, lime, and sand,
 And from diminish'd oceans form the land!

"Next the long nerves unite their silver train,
 And young SENSATION permeates the brain; 270
 Through each new sense the keen emotions dart,
 Flush the young cheek, and swell the throbbing heart.
 From pain and pleasure quick VOLITIONS rise,
 Lift the strong arm, or point the inquiring eyes;
 With Reason's light bewilder'd Man direct,
 And right and wrong with balance nice detect.
 Last in thick swarms ASSOCIATIONS spring,
 Thoughts join to thoughts, to motions motions cling;
 Whence in long trains of catenation flow
 Imagined joy, and voluntary woe. 280

So, view'd through crystal spheres in drops saline,
 Quick-shooting salts in chemic forms combine;
 Or Mucor-stems, a vegetative tribe,
 Spread their fine roots, the tremulous wave imbibe.
 Next to our wondering eyes the focus brings
 Self-moving lines, and animated rings;
 First Monas moves, an unconnected point,
 Plays round the drop without a limb or joint;
 Then Vibrio waves, with capillary eels,
 And Vorticella whirls her living wheels; 290

While insect Proteus sports with changeful form
 Through the bright tide, a globe, a cube, a worm.
 Last o'er the field the Mite enormous swims,
 Swells his red heart, and writhes his giant limbs.

"ORGANIC LIFE beneath the shoreless waves
 Was born and nursed in Ocean's pearly caves;
 First forms minute, unseen by spheric glass,
 Move on the mud, or pierce the watery mass;
 These, as successive generations bloom,
 New powers acquire, and larger limbs assume;
 Whence countless groups of vegetation spring,
 And breathing realms of fin, and feet, and wing.

300

"Thus the tall Oak, the giant of the wood,
 Which bears Britannia's thunders on the flood;
 The Whale, unmeasured monster of the main,
 The lordly Lion, monarch of the plain,
 The Eagle soaring in the realms of air,
 Whose eye undazzled drinks the solar glare,
 Imperious Man, who rules the bestial crowd,
 Of language, reason, and reflection proud,
 With brow erect who scorns this earthy sod,
 And styles himself the image of his God;
 Arose from rudiments of form and sense,
 An embryon point, or microscopic ens!

310

"Now in vast shoals beneath the brineless tide,
 On earth's firm crust testaceous tribes reside;
 Age after age expands the peopled plain,
 The tenants perish, but their cells remain;
 Whence coral walls and sparry hills ascend
 From pole to pole, and round the line extend.

320

"Next when imprison'd fires in central caves
 Burst the firm earth, and drank the headlong waves;
 And, as new airs with dread explosion swell,
 Form'd lava-isles, and continents of shell;
 Piled rocks on rocks, on mountains mountains raised,
 And high in heaven the first volcanoes blazed;
 In countless swarms an insect-myriad moves
 From sea-fan gardens, and from coral groves;
 Leaves the cold caverns of the deep, and creeps
 On shelving shores, or climbs on rocky steeps.
 As in dry air the sea-born stranger roves,
 Each muscle quickens, and each sense improves;
 Cold gills aquatic form respiring lungs,
 And sounds aerial flow from slimy tongues.

330

"So Trapa rooted in pellucid tides

In countless threads her breathing leaves divides,
 Waves her bright tresses in the watery mass,
 And drinks with gelid gills the vital gas;
 Then broader leaves in shadowy files advance,
 Spread o'er the crystal flood their green expanse; 340
 And, as in air the adherent dew exhales,
 Court the warm sun, and breathe ethereal gales.

"So still, the Tadpole cleaves the watery vale
 With balanced fins, and undulating tail;
 New lungs and limbs proclaim his second birth,
 Breathe the dry air, and bound upon the earth.

"So from deep lakes the dread Mosquito springs,
 Drinks the soft breeze, and dries his tender wings,
 In twinkling squadrons cuts his airy way,
 Dips his red trunk in blood, and man his prey. 350

"So still the Diodons, amphibious tribe,
 With two-fold lungs the sea or air imbibe;
 Allied to fish, the lizard cleaves the flood
 With one-cell'd heart, and dark frigescent blood;
 Half-reasoning Beavers long-unbreathing dart
 Through Erie's waves with perforated heart;
 With gills and lungs respiring Lampreys steer,
 Kiss the rude rocks, and suck till they adhere;
 The lazy Remora's inhaling lips,
 Hung on the keel, retard the struggling ships; 360
 With gills pulmonic breathes the enormous Whale,
 And spouts aquatic columns to the gale;
 Sports on the shining wave at noontide hours,
 And shifting rainbows crest the rising showers.

"So erst, ere rose the science to record
 In letter'd syllables the volant word;
 Whence chemic arts, disclosed in pictured lines,
 Lived to mankind by hieroglyphic signs;
 And clustering stars, pourtray'd on mimic spheres,
 Assumed the forms of lions, bulls, and bears; 370
 - So erst, as Egypt's rude designs explain,
 Rose young DIONE from the shoreless main;
 Type of organic Nature! source of bliss!
 Emerging Beauty from the vast abyss!
 Sublime on Chaos bornè, the Goddess stood,
 And smiled enchantment on the troubled flood;
 The warring elements to peace restored,
 And young Reflection wonder'd and adored."

Now paused the Nymph, - the Muse responsive cries,
 Sweet admiration sparkling in her eyes, 380

"Drawn by your pencil, by your hand unfurl'd,
 Bright shines the tablet of the dawning world;
 Amazed the Sea's prolific depths I view,
 And Venus rising from the waves in YOU!"

390

"Still Nature's births enclosed in egg or seed
 From the tall forest to the lowly weed,
 Her beaux and beauties, butterflies and worms,
 Rise from aquatic to aerial forms.

Thus in the womb the nascent infant laves
 Its natent form in the circumfluent waves;
 With perforated heart unbreathing swims,
 Awakes and stretches all its recent limbs;
 With gills placental seeks the arterial flood,
 And drinks pure ether from its Mother's blood.
 Erewhile the landed Stranger bursts his way,
 From the warm wave emerging into day;
 Feels the chill blast, and piercing light, and tries
 His tender lungs, and rolls his dazzled eyes;
 Gives to the passing gale his curling hair,
 And steps a dry inhabitant of air.

390

400

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