

## **The wonderland of evolution / by Albert and George Gresswell.**

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THE WONDERLAND  
OF EVOLUTION



A. AND G. GRESSWELL



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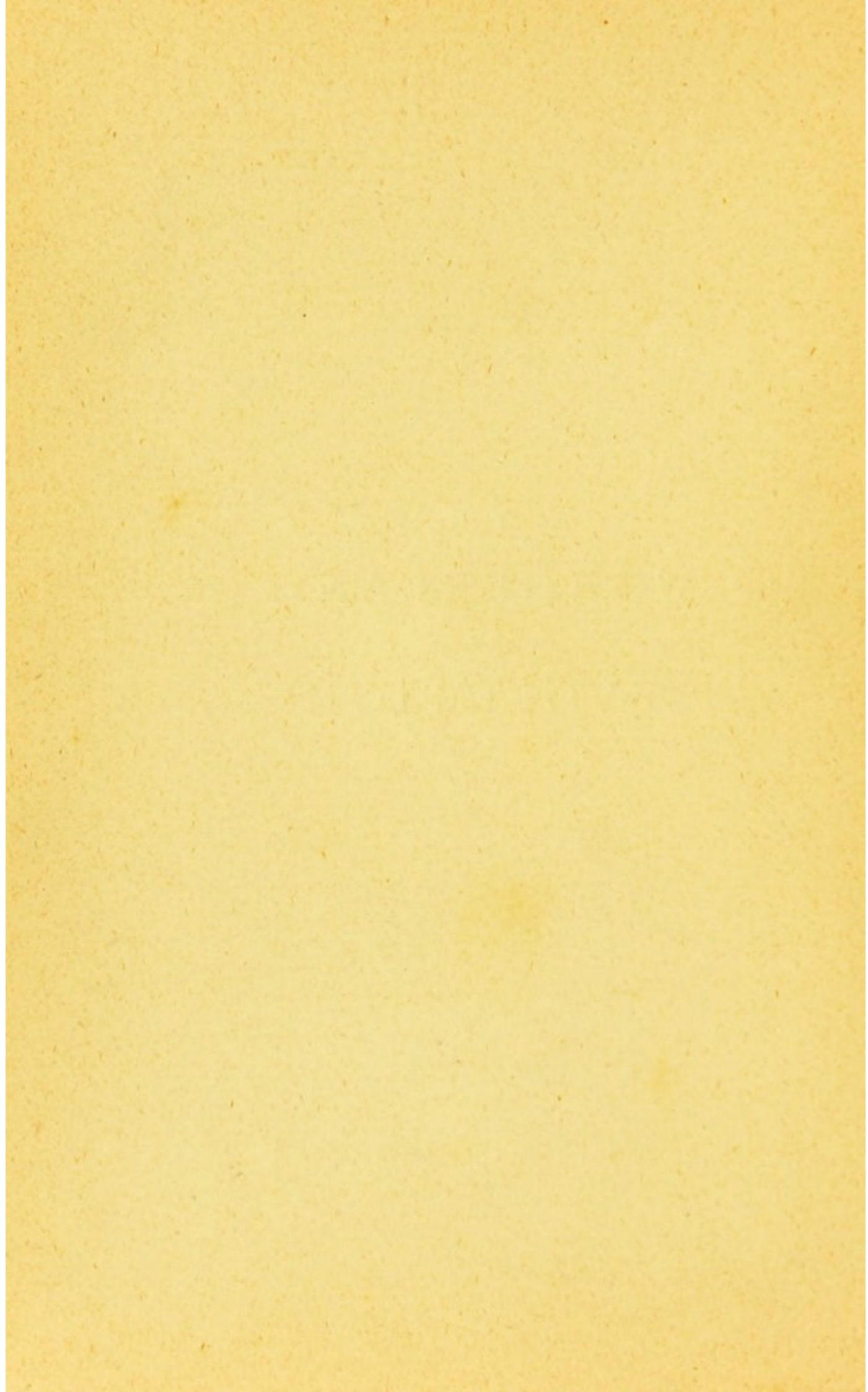


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THE  
WONDERLAND  
OF  
EVOLUTION





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WONDERLAND  
OF  
EVOLUTION

BY  
ALBERT AND GEORGE GRESSWELL



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CHAPTER I.

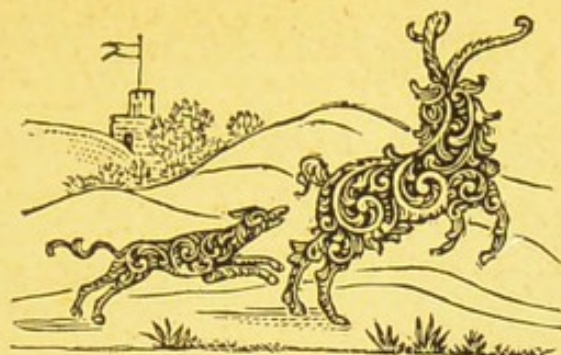


*"LOWLY LIFE."*

“Truth is as impossible to be soiled by any outward touch as the sunbeam.”—*Milton.*

“Nature, in her production slow, aspires  
By just degrees to reach perfection’s height.”  
—*Somerville.*

“Rivers from bubbling springs  
Have rise at first, and great from abject things.”  
—*Middleton.*



## CHAPTER I.

### *"LOWLY LIFE."*

**H**USH! hush! methought I heard a plaintive sigh from yonder gloomy caves and cliffs. Was it the voice of the whispering wind from the blind recesses of those caverned rocks?

I gazed wistfully, with startled glance, towards the spot from whence the sound had seemed to come; and there, in the sable darkness of the shadows cast by the mountain crags towering towards the white-clouded sky, what did I behold?—a tiny particle in grim solitude.

A tiny particle it was indeed, a trifling morsel of glistening jelly. Its name was Protoplasma. Joyous was I, yet fearing too, for in another moment the forces of nature might o'erwhelm and extinguish this tiny vital spark.

As I attentively watched the lowly form, I beheld in the far-off distance a faint light,



which approaching rapidly became brighter and brighter, and then at length assumed the form of a beautiful fairy, who thus addressed me :

“ You are about to see great marvels, for I, the fairy Chance, an airy magic sprite, do now intend, so mighty is my mystic sway, to create plants and animals to inhabit these my earthly dominions as yet desolate. E'er long you shall rove among blooming wilds and grassy vales, and shall wander joyfully in shining woodlands under the whispering boughs of balmy trees of mine. Everywhere smiling verdure and fragrant flowers bedewed by tender showers dropping their sweetness on the buds in early spring will greet your welcome advent.

“ You shall enjoy the luscious ripened fruits of autumnal orchards, and the sweetest perfumes of the myrtle and of orange blossoms. Creatures of every race will be your companions, and give you much cheering help in your onward progress. Birds from woodbine bowers and jasmine groves will enliven the lovely forests and woodlands with sweetest melody. Yes ;

o'er scenes of joyous progress will I waft thee. I shall be the pioneer, the guiding star, in this grand scheme; but my friend, that cunning sylph, Evolution, will aid me also. She will perfect and mature all that I initiate. You are indeed about to behold endless marvels, inexpressibly sublime. Go on your way happily; fear nothing, for I will befriend you. Take with you in your travels this box of remedies; they will be of much service to you. I now give you also the power of seeing the most minute particles, of hearing all varieties of sound, and of interpreting the murmurs of the very tiniest of my creatures. You perceive that I have already, after prolonged efforts, made a good beginning of my noble enterprise.” With these words Chance waved her wand over the little living creature, and then, borne on the mountain breezes, disappeared among the gloomy rocks and re-echoing dales.

Though deeply impressed with her words, inwardly I felt that, false as fair, Chance could not fulfil her promise; and though ready to follow the steps by which the two fairies were to accomplish each her part of the great work

prophesied, I reserved my decision as to a belief in their power to effect this wondrous end. I longed to see the dreary, barren landscape varied by trees and herbage, and to hear the merry singing of birds in the heavens above. Yet could plants and animals be made by Chance?

As I mused on these things, I slowly advanced towards the lowly form, and listening, with indescribable rapture I heard it sigh in plaintive concord of sorrowing melody, like the faint "exquisite music of a dream":

"Oh dear! Oh dear! What shall I do? what can I do? I have just been made from the material of this vast earth. What shall I eat? What shall I drink? How can I know what? From me, lowly though I be, are the mighty kingdoms of plants and animals to be descended! If I live; yes, *if* I live! Not that the care of future heirs disturbs me much, but that I am at any moment in danger of losing my tiny vital spark, so small, so very small, through lack of food; yes, this is alone what weighs me down with grief. 'O world! O life! O time, thou chrysalis of eternity.'

“As yet I am but two days old indeed ; and how can I unguided hope to live and thrive alone. Oh ! I wish—oh ! I do wish—that it had never been my lot to have been placed in this dull wilderness, this haunt of sad meditation, to muse o’er flood and fell, and live a life made weary by the dread bondage of such lingering uncertainty ; uncertainty !”

Now, as I listened eagerly to the sorrowful words of the trembling little mite, I heard the mountain echo answer from her “æry shell”—

Uncertainty	Uncertainty
ncertainty	ncertainty
ncertanty	ncertanty
ncrtanty	ncrtanty
ncrtnty	ncrtnty
nctnty	nctnty
ncnty	ncnty
ncty	ncty
nty	nty
ty	ty
Y	Y
	Y
	Y
	Y
	?

and the voice of the echo was lost among the hollow caves ; but no one answered the question “ *why?* ”

“ Shall I thus live ? ” quoth again the lonely speck of life. “ Shall I thus languish remote, unknown, to hold converse with nature’s charms alone, unbefriended, left to die, unseen, uncared for ? Is indeed this short span of life one hideous abortion and mistake of nature ? But ‘hence, loathed melancholy.’ Many, yes, many thousands of years ago is it since a small, small creature, just like myself, met with a sad and agonising fate.

“ He indeed was shrivelled up by the scorching rays of the summer’s heat—‘a Memnon smitten with the morning sun.’ Truly, he became, ere he’d well been born an hour, a withered, shapeless jot of lifeless matter in—oh ! I can’t remember how long exactly, but in less,—less than five minutes or so.

‘ Sleep ! O gentle Sleep !  
Nature’s soft nurse ; how have I frightened thee,  
That thou no more wilt weigh mine eyelids down,  
Nor steep my senses in forgetfulness ! ’ ”

While the tiny creature thus mournfully

soliloquized, a gust of wind blew ; only a gentle gust, that would not even have ruffled a fallen leaf from the spot where the autumn breezes had wafted it. Yet this gentle gust blew the tiny particle into a little heap of dry, powdery sand close by. Its moisture was thus rapidly withdrawn, and the flimsy chain which but a moment ago had linked this humble form with life was snapped at once before my very eyes. Oh, how sad I felt ! how overwhelmed with anguish ! for the sudden leap from lifeless matter into living protoplasm had only been wrought under the most strenuous and careful guidance of the fairy pilot, Chance.

With gentle touch I raised the lowly relic, as dead and as cold as stone, and placed him on moister ground, in the hope that he might again, perchance, regain life. For it seemed to me more likely that *he* would revive than that Chance would mould another little pilgrim like him. I had also recourse to my chest of remedies, with which the fairy, with such kind consideration, had provided me. Everything I tried in turn, yet all to no purpose. Life was indeed extinct. Dumb with sorrow,

I anxiously awaited some further proofs of the fairy's power; but there seemed little hope that a similar creature would ever again be made.

And even should this happen, how could such tiny creatures live in such a fatal sphere? And yet, "might not chance win back that by mischance lost"? While thus thinking, I moved slowly away, overcome with emotion. As I sighed, half aloud,—

"What's gone, and what's past help,  
Should be past grief,"—

Chance, the fairy enchantress, again appeared before me. After condoling with me concerning the misfortune which had befallen my little friend, for friend he was—I had no other fellow-creatures here,—she continued thus:—

"It matters not. Hundreds and thousands have thus perished. But I am always busy. Suppose not that I am incapable of producing many other similar creatures. My noble friend, Evolution, failed to aid me in this particular instance, you know; just at *that* time she was busy elsewhere. But in other regions, afar off,

we have worked together harmoniously with mystic sway. There, more successful creatures, made by us, are being perfected by our combined efforts, and have now for some time past been giving rise to numerous descendants of higher type. These you will ere long visit.

“They have been growing and progressing many thousands of years. Go onwards! I return to ‘Chindara’s warbling fount.’ Fare thee well!”

Happier after this exhortation, and very hopeful of seeing the fulfilment of these promises, I hastened my steps, and soon arrived at the brink of a beautiful sheet of deep clear water, extending far and wide, and now o’er-filled by copious summer rains.

I paused for a moment at the water’s edge, and, stooping forwards to watch the many little creatures and tiny little plants of very simple form, merrily disporting themselves, fell into the calm, clear lake, and became transformed into a bright little Polyp swimming majestically in their midst.

The lake was fed by rivulets flowing from the hills around, and was not far from the sea



beach. The little forms of life, strange to relate, were talking in just such a strain as that in which the little morsel of protoplasm had expressed itself a short time ago.

They were seen to multiply by processes of simple division and subtraction. Some split up into two, some into more, small parts; while from the sides of others there grew small buds which after a time detached themselves. Soon the small pieces and buds increased in size, and became as big and strong as their fathers.

So rapidly, indeed, did these tiny creatures multiply, that I feared the whole lake would soon be o'ercrowded by the countless myriads. But many died; and many ate their friends. I noticed particularly one chubby little fellow, of rounded shape, with arms all over his body.

He could retract and throw out his arms at will, and by this means he was enabled to move joyfully from place to place, as well as to clasp his prey and then digest and make it part and parcel of his own self. He was conversing eagerly with several much larger friends, who were hollow and provided with tentacles.

"Fellow-creatures," he began in a serious

voice, “We have now, as some of you know, advanced, under the most scrupulous care of the two powerful fairies who preside over us, to a high degree of perfection; yet we all know that a multitude of beings similar to ourselves were some thousands of years ago destroyed by a disastrous earthquake breaking forth with strange eruptions, and that scarce one survived to tell the sad tale of woe. At a later epoch still another hopeful band of joyous pilgrims was suddenly o’erwhelmed by a dread deluge rushing with impetuous waters, spreading destruction far and wide o’er their land of peace and calm.

“These things have been handed down to us by tradition, and of them we have inscrutable proofs. Such facts as these should clearly convey to all of us how uncertain is life, and how vexatious its vicissitudes. But let us not grieve;

‘For the high Muse answered: Wherefore grieve,  
 My brethren, with a fruitless tear;  
 Abide a little longer here,  
 And thou shalt take a nobler leave.’

“Let us, therefore, endeavour to improve

as quickly as we can, in order to reach a still higher state of perfection, and thwart the unruly elements of boisterous nature. By so striving, indeed, we shall aid Chance in her efforts to advance us. The air, you know, admirably suits our constitutions, and we have plenty of food; yet though we are happy and comfortable, we are making no progress."

"Please tell us when and where these poor pilgrims lived," cried a shrewd little creature as he moved himself nearer to the tiny rotund antiquarian; "and tell us also what their names were."

"Oh," answered the round little gentleman,—

"I can't recall *their* names ;  
They lived—no matter *where*,  
Once—but no matter *when*,  
I cannot that declare.  
They lived—how many years  
I truly can't decide ;  
But this one fact appears,  
They lived—until they died.  
They died I have averred,  
But cannot prove 'twas so ;  
But that they were interred,  
Is certain sure, I know."

"Indeed! were they indeed!" cried the

sharp little fellow. “I don’t believe a word of it; and but a minute or two ago you told us that you knew. Do you, or don’t you, know? And more than this, I must deny that there are no signs of progress here among us.

“Take my case. By some kind effort of Chance, forsooth! I have been fortunate enough to obtain greater transparency than most of you possess. Nay, more, I have even secured two small grains of pigment or colouring material. I need hardly explain to you that my greater transparency, by allowing light to pass through me more readily, causes greater perfection of vision, and the particles of pigment by absorbing the light increase this advantage.

“I have been lucky, and wish you all every success; for with me—

“Fortune is merry,  
And in this mood will give us anything.”

He then concluded, but not before he had informed his friends that unless they became as transparent as he was, and secured likewise grains of pigment, they would all inevitably

perish ; for he could, he said, thus obtain food more easily, and protect himself from enemies who had devoured so many of his friends.

A gloomy feeling now reigned supreme among the assembly, as each member thought of his possible fate. This depression of spirits, moreover, was still further increased by the assertions of another small creature, who affirmed that he had been lucky enough to become possessed of an auditory crystal, which he called an otolith. By its means he declared positively that he could hear perfectly all that went on around : the rushing of the winds, the rippling of the brooks, and the roar of the rising tide. He said he could even hear what the wild waves were saying.

“ Of course,” he pleasantly observed, “ you may all perhaps hear to some extent, by reason of the motion of your protoplasm, ruffled by the whispering wind, ‘ for it’s an ill wind that blows good to none.’ But the acuteness of your hearing is nothing compared with mine.” He then explained to them of what infinite use this new acquisition was to him, and ended by remarking : “ Unless you very speedily obtain

some similar advantage, you will all inevitably perish; and as for your offspring, they will soon become extinct, for they will never be able to cope with mine; and do you not know how true it is that—

‘Oft what seems  
A trifle, a mere nothing by itself,  
In some nice situations turns the scale  
Of fate, and rules the most important actions?’”

A humpbacked little dwarf now pointed out to the company a perceptible calcareous shell on his back, which to some extent protected him from cold, and afforded him a superb home when weary after his day’s work.

It was true, he acknowledged, that it was impossible for him to enter his tiny shell unless he compressed himself into most extraordinary and inconvenient shapes; yet this disadvantage, he had no doubt, the fairies would in time remedy, and that his posterity would easily be able to enter still more beautiful sinuous and cosy shells of lustrous pearly hue.

As he recounted this interesting narrative, he was interrupted by shouts of surprise and astonishment from all present.

“Surely you don’t suppose,” cried one of the eager listeners, “that you yourself will be benefited by powers, acquisitions, and treasures left to your children?”

“No, fellow-creatures,” he replied; “you mistake my meaning. I care not for my posterity. Indeed, I would destroy my august abode at once, did I not adore its polished lips of magnificence sublime, and its sheltering dome affording peaceful repose and a secure protection against all intruding foes. I merely mentioned the idea of its greater perfection in the future as a point which might interest all of you. And I venture further to oppose the statements made by two of our friends here, that we shall die if we do not acquire the pigment of the one or the auditory crystal of the other.”

He then proceeded to show how impossible it must be even for so mighty and fore-seeing a fairy as Chance, though aided by her equally powerful sister, to produce at any rate more than one or two such great advantages simultaneously in any one individual. And he averred that it was not necessary to gain a single crystal or a grain of pigment, or even a

shell, such as he was fortunate in possessing. On the other hand, he held that they might continue to live and to thrive, even if they merely improved, or if they gained, some other advantage equally useful. He then explained how his shell had arisen in the first instance. One of his forefathers long, long ago was agreeably surprised to find one sunny day a very small spot of chalky matter adhering closely to his back. He wondered whence it came and how he could possibly have gained such a prize. But at last, as he sat in the sunny shade engaged in deep meditation, he bethought himself of a little pool situated among the white chalky Downs far away.

He oft had visited its turbid waters when the wet weather had enabled him to do so, and here he presumed the acquisition had been made.

And so in ensuing rainy seasons he made a habit of revisiting the scenes of his former rambles, and in the course of time was delighted to find that his prize had trebled in size.

“You thus see,” said the wise little historian, “how highly favoured my ancestor was by



Chance, for when the calcareous particle first appeared, it could not have been of the most remote use to him.

“ And he knew how to take care of himself too. I’ll tell you what he used to say to himself when no one was listening. These were the words :—

‘ As I walked by myself I talked to myself,  
And myself replied to me,  
Look to thyself and take care of thyself,  
For nobody cares for thee.’

And he was quite right, too, in looking to himself, for if he hadn’t happened to have noticed his prize, no increase in size would have—ah! well—been gained. So you see, “his wish was the presentiment of his capability.” His children had small calcareous shells, which grew still larger in each successive generation. At length, in the hundred-thousandth generation, enough had been gained to constitute a means of protection, and all his relations not thus favoured by fortune—fortune you know is not always merry—gradually perished; many from want of it, others as a

result of their envy, jealousy, and despair. Even those of his kindred who had acquired other great advantages of a different kind became extinct, for they had *not* the favour of the two presiding fairies.”

“But didn’t these favoured relations look to themselves?” said one of the pilgrims of the company.

“Well, no,” answered our interesting little friend. “They repeated wrong lines to themselves. Such as these :—

‘So I turned to myself, and I answered myself  
 In a joyous reverie,  
 Look to myself or *not* to myself,  
 The selfsame thing will it be.’

You see they thought it was no use looking to themselves. They cared not for paltry pigment or otoliths, nor for anything fortune would not give them. They were like the fox who cared not for sour grapes. They cared not for grand acquisitions, but acted on the following lines :—

‘Alas ! the joys that fortune brings  
 Are trifling and decay,

And those who prize these paltry things,  
More trifling still are they.'

So they died, every one of them, for no one cared to point out their folly to them."

A very stout old gentleman now came forward, evidently anxious to obtain a hearing. By way of introducing himself, he began somewhat impatiently in a very pompous manner: "I am the father of worms, and my name is Archiscolex." Some of the creatures were much amused at his strange appearance, while others manifested considerable uneasiness, and were much alarmed as he moved about in the water in order to impress his words more deeply upon them. Indeed he was an extraordinary and grotesque little creature. He was so ancient, so ugly, and so peculiarly shapen withal.

After the commotion caused by his arrival among the little creatures had subsided, he was again enabled to obtain a hearing.

"Be not afraid," said he. "I am old, and shall not trouble you long. The production of my family is an experiment of Chance. This experiment it is said will succeed, as from my stock are to be derived many highly developed

creatures; but long before this end is gained, I and mine will be no more. We shall become extinct. My shape, you will observe, is somewhat indefinite; but I am far superior to most of you, for I have many special gifts which you have not; and though they may be useless to me, they are nevertheless of very great interest.

‘You know

’Tis but an hour ago since it was nine,  
 And after one hour more ’twill be eleven;  
 And so from hour to hour we ripe and ripe,  
 And then from hour to hour we rot and rot,  
 And thereby hangs a tale.’”

While the venerable worthy thus sang, a tiny part of his unshapely form detached itself and swam away, and in full vigour assumed forthwith an independent existence.

“Do you observe my son?” said Archiscolex, looking up to me as he spoke. “It is quite clear that I am breaking up. I shall go home at once and make my will.” He would have gone there and then, had not his dutiful son thwarted this purpose. Master Alcibiades Archiscolex coolly charged his noble parent

with not having cultivated his manifold talents. "I am exactly similar to you," said he, "only not so strong as yet, and I feel sure that as we are not making sufficient progress our family must inevitably become extinct." To this his father replied, "Your views are mine. We cannot wonder if your words shall prove in the future to be in accordance with truth. I indeed am surprised that we were ever made. Fellow-creatures—

‘ Oh ! ye who bask in fortune’s sun,  
And hope’s bright garlands wear,  
Your blessings from the god of love  
Let his poor children share.’

“ But friends, I must not thus repine. Let us rather take a journey to the sea beach. Such a change would doubtless be highly beneficial to all of us. Let us swim along the sparkling stream, with mossy banks, which flows from this lake into the ocean near. We may probably find King Palechinus, the noted old monarch, and his prime minister—for they are always together, while many bristling satellites of the sea attend in their train. And more-

over, I must go and find a lawyer to make my will at once, for my time is short.”

Many of the animals agreed to this proposition, and swam rapidly away in a body to the sea.





CHAPTER II.



*TWO MIGHTY KINGDOMS.*



“He who studies Nature’s laws,  
From certain truth his maxim draws.”

—*Gay.*

“Truth is the ground of science, the centre wherein all things  
repose, and is the type of eternity.”—*Sir Philip Sydney.*



## CHAPTER II.

### *TWO MIGHTY KINGDOMS.*

Now the animals had migrated, small plants and other tiny creatures alone remained. These latter were not plants indeed, and they were not animals. They were very simple forms of life. The plants were evidently somewhat afraid of the animals, for during the late discussions they had held aloof, and though intent on all that was said, had preserved a discreet silence. No sooner, however, had the animals withdrawn to the far distant seas, than there arose such a clamour that I listened, half in curiosity, half in fear, for I was afraid lest such serious wranglings should thwart the efforts of Chance by causing their untimely extinction.

My attention, however, was occupied rather in observing their form and conduct than in listening to their quarrels, especially as there was now so good an opportunity of determining

in what points animals really differed from plants.

I expected to find all plants fixed, and was not a little surprised to notice many of these primitive vegetals moving about with vigour and grace.

There were, I observed, at least three large groups or kingdoms of living creatures: the animal, the vegetable, and an intermediate group. This latter was perchance that of the most primitive forms, and from them it seemed that both animals and plants had arisen.

The air appeared to be remarkably well suited to the constitutions of all these living forms. It had indeed just those properties and that composition to suit every one. Chance had, forsooth, arranged *all* such matters with so much forethought!

“May I say a few words respecting the future history of our race?” at this moment exclaimed a little plant who, though but a tiny mite, was evidently of note among his comrades. “From us are to be derived trees of stupendous height, flowers of superb hue and lovely fragrance, and fruits of delicious flavour. And in

the course of time animals will become still more dependent upon us than at present. They will derive from us food, shelter, clothing, all kinds of delicacies, as well as, indirectly, every necessary of life."

A very sensible little plant hereupon interrupted the speaker, observing that though Chance had great power, yet it was impossible for her to cause two large groups of organisms to grow up side by side, one being much superior to the other, and yet so far dependent upon it as not to be able to exist without its help for a single day. For animals could only feed on matters first prepared and changed by plants. He regarded the fairy Chance, indeed, as an impostor, and exhorted those of his friends present by the following lines:—

'Let us rest content to live and die,  
For sweet are the thoughts that savour of content ;  
The quiet mind is richer than a crown,  
Sweet are the nights in careless slumber spent.  
The poor estate scorns fortune's angry frown.  
Such sweet content, such minds, such sleep, such bliss,  
Beggars enjoy when princes oft do miss.'

"And again," continued he, "supposing our

society, as yet lowly, be suddenly o'erwhelmed ; or supposing instead of making progress, we fall off and decline. The noblest plants of us are as yet quite simple, while many of us are mere cells.

' Great faith it needs, according to my view,  
To trust in that which never could be true.'

Chance, I affirm, can effect nothing ; 'tis power and design alone such things as these can rule."

When this little plant had finished, wishing to rejoin the animals, I proceeded by the side of the rippling stream which led to the sea.

Arriving at the beach, I saw no trace of my former friends. Consequently I swam out to sea, hoping thus to fall in with them, as they could not have travelled far from land. My efforts were soon crowned with success, for I espied at no great distance from me a large concourse of creatures, and among the motley herd of sea-urchins, star-fishes, jelly-fishes and others, some of my former acquaintances, the animal inhabitants of the pool, were easily distinguished. Near them I stationed myself, certain that the proceedings could not

fail to afford me amusement and instruction. King Palechinus, attended, as befitted his pre-eminent position among these creatures, by his body guards, was a conspicuous object. He was addressing a host of his subjects, who had arranged themselves so as to hear his learned remarks to the best advantage.

His majesty would stop every now and again, and grope about for his notes, which he was continually losing, and read with great difficulty.

It was a great pity that no one else could be found to perform this irksome task for him. It was however whispered that when he spoke without his notes, the remarks he made were much clearer and more intelligible.

The address was not uninterrupted, for the king would observe at one time a guileless young sea-urchin standing on his head, at another a hydra attempting to turn inside out, much to the amusement of an admiring circle of philosophic Physaliæ. Sometimes he would notice a jelly-fish smiling at its own folly, or a star-fish enjoying the jokes propounded by a Spatangus of a witty turn of mind. During

such occurrences the king would not proceed until the culprit had been removed and the consequent noise and clamour abated.

“ My subject this morning,” began the monarch, “ is—

‘ The sea ! the sea ! the open sea !  
The blue, the fresh, the ever free !  
Without a mark, without a bound,  
It runneth the earth’s wide region round ;  
It plays with the clouds, it mocks the skies,  
Or like a cradled creature lies.’

“ You all know,” continued the king, “ how Chance and her ally have contrived to fabricate such complex beings as we are from the elements in nature ; but in addition let everyone note how they have been at work in other directions.

“ We are all creatures of the briny sea, and are therefore much interested in all that is known of the peculiar properties of the medium in which we move and live and die. Firstly, water, you must know, holds gases in it in solution, and by reason of this important fact we are enabled to breathe and live. From it we obtain the oxygen we require, and to it

we give up another vapour (carbonic acid) which we no longer need. Furthermore, you should note how soon the sea would be converted into one large block of ice in winter had not water the peculiar properties with which it is endowed."

Here the king stopped, for he perceived that his learned disquisition had not been clearly understood. He soon however began again with renewed energy, and as he despaired of eliciting a more intelligent appreciation of his lucid remarks, became even more abstruse, apparently for the sake of his own enjoyment.

"If water were not peculiar in its properties," he continued, "we should all be embedded in ice during cold weather, like currants in a plum-pudding. But you know that—

'The deepest ice which ever froze,  
Can only o'er the surface close,  
The living stream lies quick below,  
And flows and cannot cease to flow.'

And moreover it is a noteworthy fact, that in order to boil water, a much larger amount of heat is necessary than would be required to raise other bodies to the same temperature.



“ Thus, my friends, the water of our lakes, rivers, and seas is seldom much raised in temperature even on the hottest summer’s day, as it would be were not water a unique element. For nature is not willing to boil us all alive. So you see how fortunate we are. But now let me speak to you about another interesting topic ; namely, change. You will no doubt have noticed that the events which happen on any one day, even in the case of the most regular of us, are not like those of any other day. We may even go so far as to say that at no two periods in one’s life is any one the same person ; he has changed. And you may further have observed that all changes are more or less rhythmical. Night follows day. Season follows season. Change is necessary for progress.

“ Weep not that the world changes ; did it keep a stable, changeless course, ’twere cause to weep. All things around us change ; lifeless matter, however, far less than living beings. We shall always continue to change, and in the dim future, it is said, shall produce a race of beings much better or much worse than ourselves.

“But my friends, let us hope for the best. We will hope that the changes will be in the direction of improvement; ‘for hope travels through, nor quits us when we die.’

“You cannot but be struck with all the wondrous events which have happened to-day; yet all have concurred in bringing us safely to the end of it. Chance has brought this about, and she will, let us hope, continue to favour us. I presume all of you have heard those memorable lines of the poet,—

‘Not in vain the distance beckons;  
Forward, forward let us range,  
Let the people spin for ever  
Down the ringing grooves of Change!’”

King Palechinus now sat down. His discourse furnished me with matter for deep reflection; but as I communed with myself, the fairy Chance again appeared in the air above me. “My efforts,” said she, “have been hitherto successful; but I see you are sceptical concerning my power. Beware how you trifle with me! Let us move hence.”

An irresistible impulse now led me to rise out the water and seat myself by her side on

a beautiful winged charger—assuming as I did so my wonted form. We rapidly flew through the air at an incredible rate, and at length reached a lovely island surrounded by rocky cliffs. Having here dismounted the fiery steed, Chance informed me that I was about to see still greater wonders. She then vanished, leaving me alone in an unknown land.



CHAPTER III.



*THE STORY OF THE INK-FISH.*

“ Each moss,  
Each shell, each crawling insect holds a rank  
Important in the plan of Him who framed  
This scale of beings ; holds a rank which, lost,  
Would break the chain, and leave behind a gap  
Which Nature’s self would rue.”—*Thomson.*

“ Upward steals the life of man,  
As the sunshine from the wall ;  
From the wall unto the sky,  
From the roof along the spire.  
Ah ! the souls of those that die  
Are but sunbeams lifted higher.”—*Longfellow.*



## CHAPTER III.

### *THE STORY OF THE INK-FISH.*

**T**HE isle on which the fairy had left me was indeed beautiful. Trees and ferns, shrubs and herbs of every description, and flowers of the loveliest hue, abounded in ample profusion. As I wandered, lonely as a cloud, in this secluded isle, I heard the distant murmur as of ocean waves, and ere long arrived at the edge of a steep, rocky cliff. The sun was shining brightly in the azure, cloudless sky, and the air was keen and exhilarating. The prospect from my elevated position, varied as it was by the rocky irregular coast and the deep silvery ocean, stretching far and wide, was sublimely entrancing.

As I looked around me, intent on the beauty of the scenery, I saw assembled on the sandy beach below, along the margin of a bay, a group

of marine creatures of many kinds. Much impressed, I slowly began to descend the cliff with the view of observing more closely what was going on. Having soon reached in safety the beach below, I seated myself on a large smooth stone, rounded by the noisy billows of past ages, and now o'ergrown with moist, tangled seaweed, and viewed leisurely these busy creatures.

On all sides were animals of various shapes, some totally unlike any I had before seen. Crabs and lobsters were crawling about on the sandy beach, while fishes, large and small, swam about gracefully in pools left by the ebbing tide. The lobsters and crabs were thronged by their families, and were teaching their young children to crawl; the shrimps were hopping about merrily, and sandhoppers were similarly disporting themselves.

All were intent on killing time previous to the arrival of King Archichthys (the father of the fishes), who was about to speak on a very important matter; this being, as I gathered, the object of this assemblage. There had been lately raging a grievous war among the creatures

now so gay. The rivalry had been between King Archichthys, whose followers claimed for their king the title of Archi-vertebrate (father of the back-boned animals), and King Palaitunicus (the father of the sea-squirts), whose subjects demanded for their leader the same honourable title.

King Archichthys had not yet arrived with his armed array, but at length there were to be seen swimming from the sea towards one of the largest pools, crowds of fish of all kinds, headed by the leader of the finny tribe, and the king himself. This mighty potentate was like a shark, only much uglier. Imbedded in his skin were numerous little spines, and similar ones on his jaws were exhibited whenever he smiled. He had no bones, for these were replaced in him by supports of cartilage or gristle.

I was greatly interested in what was going on, but felt somewhat wearied, owing, no doubt, to my recent travels and excitements. I was, therefore, much delighted to find that I had been observed by some very amiable and considerate molluscs, who, among others, were seated at a table on which breakfast was most



artistically laid. The table was placed in a comfortable little nook under an overlying ledge of rock. At the head sat a very sage old crab, and on either side of him was a fresh, noble-looking oyster. There were also among the guests many snails and clams and cockles of large size. "Pray take a seat," said an oyster raising himself and looking attentively at me, "and partake of some breakfast with us." Thanking him, I seated myself comfortably at the table on a soft clump of red and green seaweed. At my back stood a neatly-dressed little lobster-page, with a silver tea-pot in his right claw. "May I help you to a little tea?" said my many-legged attendant.

"Thank you," I replied, "with much pleasure."

"With brandy or without?" said an oyster who sat near me.

"Brandy!" I exclaimed. "I never take brandy in my tea."

"Well, then, go without it; I always take it, and so do all of us here."

"Very bad for you," observed I.

"You mean you think it is bad," said the

oyster; "and that, you know, is a very different thing."

"No, begging your pardon," said I, "I don't mean I think, I mean I know it is bad; bad for the stomach, bad for the liver, bad for the head."

"You mean you think you know!" retorted the oyster angrily. "But as I have no head, it can't be bad for it; and it can't be bad for you, for you've no head either, if you do not know such simple facts; for how, indeed, can an acephalous mollusc have a head? Haven't you ever learnt Greek? Here *we* speak Greek as naturally as pigs squeak. And more than this, I shall always take brandy in my tea now; as you who know so much say it's bad for what one has not, and therefore it can't be bad for what a body has."

"No squabbling allowed at my table!" cried the spiny old crab at the head of the table. "You have no business to interfere with our habits!" continued he, looking at me as he spoke; "let every one do as he likes, and mind your own breakfast. But you are eating nothing; what will you take?"

"Well, I will have some cockles, please," replied I.

"Cockles!" screamed all the guests in one voice; "do you mean to say you wish to eat live cockles."

"Oh, no! boiled cockles, of course," said I.

"Boiled!" screamed every one again at the top of his voice, more vehemently than before, while many of the poor cockles present made a hasty retreat, spilling tea, coffee, eggs, and butter on the floor; "do you mean to say you want to eat boiled cockles?"

"Oh, pray don't be alarmed!" said I. "Those things in the pot look just like cockles, and I thought they were boiled—boiled in the ordinary way—I mean boiled alive."

"Boiled alive, you thought!" shrieked the large old crab. "You shouldn't always think so much, if you cannot think better things; and just look what you have done, you have frightened half my poor guests away, and broken the tea-cups and wasted the tea!"

"Really, I am very sorry," replied I. "I thought they were cockles."

"There! thinking again!" cried the crab,

“always thinking. They are not cockles, I tell you. Nobody would boil cockles alive,—at any rate, nobody would if they considered other people’s feelings. How would you like to be boiled alive, eh?”

“Well, what are they?” said I.

“Oh! that is a very different thing. What are they indeed! I can soon tell you that if you won’t always be thinking. We never think. *We* speak without thinking. But if you must know,” continued the spiny crab, “that pot is for boiling, and plenty of boiling it does, too. We always put it on the table to boil food for our last course.”

“So you speak without thinking, do you?” interposed I.

“So do we!” screamed the oysters.

“Then you are as absurd as many others,” rejoined I.

“Absurd!” shrieked the oysters; “why are we absurd? How could you think if you had no head? and how would you like to be called absurd?”

“Oh! I beg your pardon,” I replied, “I imagined you had heads.”

“There, at it again!” cried the crabbed old chairman. “Imagined, indeed; that is quite as bad as thinking.”

“Put his hand into that pot of boiling water,” continued the crab, savagely pointing to me as he spoke, “and see how he likes his hand being boiled. He thinks cockles like it. He’s only an eel.”

“I can’t stop now,” said I, rising from my seat; for all were much annoyed with me, and there was no telling how soon the crab’s order might be carried into execution. “And, moreover, I am not an eel; and if I were I should not have hands, because eels haven’t any. That is what comes of speaking without thinking, and you have yet to learn that ‘the value of a thought cannot be told.’”

“Pray be seated!” cried the crab; “there is no occasion for alarm. We don’t listen to reason, but trust the senses—there the conviction lies. You thought, perhaps, we had all sorts of shell-fish, and various other delicacies, for breakfast here in Shookoowabskoosis. I know some one asserts that—

“Your food shall be fish from the waters,  
Drawn forth on the point of a hook,  
From murmuring Shookoowabskoosis  
Or wandering Skoodoowabskook.”

But you must not think it is true ; it isn't.

“Pray excuse me now,” said I, as the crab ended these lines, for I beheld King Archichthys about to speak.

“Certainly!” cried the crab. “Good-morning to you, and take my advice—give up thinking.”

“We are here,” began Archichthys, “to discuss and settle by arbitration who is really the Emperor Archi-vertebrate, the monarch of all. Now I bring here with me the records of the past history of my race, as far as my most learned antiquaries have been able to investigate it. In the first place, then, it is sufficiently clear from them that I am in no way related to that contemptible creature, King Palaitunicus.” Hereupon the latter sovereign, who had been visibly swelling with wrath and vexation at the words of his rival, ordered a large body of cuttle fishes—who were always ready at a moment's notice to execute dutifully the commands of their king—to advance towards

Archichthys and his followers, and inject into their eyes the ink which they possessed conveniently stored up for such purposes. No sooner had this command been given, than such a volume of the dark inky fluid found its way into the eyes of King Archichthys that, totally discomfited, he was fain, for a time, to desist from further argumentation.

At length, slightly recovering, he floundered about with rage, and forthwith ordered a body of electric fish to proceed immediately to attack and destroy the impostors, his ignoble and despised foes, and King Palaitunicus himself. This laudable end would doubtless, however, have been effected long ago, in the battle which had occurred, had not the objects of attack been capable of adequate self-defence. They were also nobly reinforced by crabs, lobsters, and other brave allies, and many had hard coats of mail, and thus felt but little inconvenience from the most severe blows, being neither very sensitive nor easily impressed; while many of the molluscs, who formed part of the army, contented themselves with retiring into their shells and laughing to scorn the

advancing detachments of their enemies. It often happened, also, that some of the soldiers of the army of Archichthys would pass by those creatures encased in their tunics, failing to discover their animal nature, and would then return to their leader protesting that the enemy had fled (for the tunicate animals, when adult, are in most cases immovably fixed, and not only present a plant-like appearance, but their outer coat of mail contains a substance—cellulose—which, as a rule, is sufficiently characteristic of plants).

King Palaitunicus, after having inflicted upon the enemy a severe rebuke, exclaimed :

“We have nothing to fear ; we are secure against all attacks, and as you see are quite capable, not only of defending ourselves, but also of assailing you with success. At the same time, we must protest against such treacherous tricks as those we have just witnessed. Yet we wish to end this conference amicably ; for we came to talk and not to fight. Be assured that King Archichthys is a pretender. And in order to prove this, let him be examined. We shall then see



how frail are his claims to be considered the monarch and father of all; or, if the king objects, some relative will perhaps offer himself for the honour of the family.

“But ah! what is this I see? One of my own faithful band mortally wounded during the recent unprovoked assault. He is evidently dead; we will therefore examine him. Let all arrange themselves around me. Hand me the scissors, please! Now,” continued he, quickly slitting through the tunic, “you see here a spine of simple and lowly form, similar to but not so matured as that of King Archichthys and his followers! You see, too, the gullet, perforated by numerous slits for the aeration of the blood, an arrangement to be compared with that of my rival king, though likewise much simpler. It is of no avail to deny these facts. Come up, all disbelievers, and be convinced! To proceed: you observe that the heart is a hollow tube open at both ends and composed of muscle. Now, these and other structures which we possess, are much simpler than in our rivals, who are, in all probability, offshoots from our race.”

Hereupon nearly all present shouted in favour of the speaker; and so satisfied were all of the truth of his arguments, that King Archichthys, deserted by his adherents, thought it best to submit without more ado.

The successful patriarch, encouraged by the applause, continued: "We are very unfortunate in having our nerves but very slightly developed. In fact, we possess merely a single spot of nerve substance, with a few very small threads spreading from it; and it is owing to this that we are so slightly sensitive. Chance has favoured us, however, even in this respect, for my ancestors had no nerves whatever."

A tall cuttle fish now remarked that he thought he could explain to all how such nerves had gradually been formed. "You are aware," said he, "that we are provided with an ink-bag, and you have just seen what great service it renders us. The fluid contained in this receptacle is black, and is largely composed of a dark brown colouring matter. My earliest ancestors had no such advantage, and how they managed to live without it I don't know.

One might have supposed that they would all have died. They didn't.

“But let me tell you how the ink-bag was in the first instance produced. You will then be able to imagine how your nerves really first began. And I must claim your respectful attention, for these things require careful thought, and—

“Errors like straws upon the surface flow,  
He who would search for pearls must dive below.”

“Now, once upon a time, very long ago, one of my forefathers went out early in the morning in search of breakfast, and happened to encounter a large fish, also intent upon the same object; yet neither of them could find anything to eat. The big fish proposed, therefore, to deliver my forefather out of all his difficulties by calmly allowing him to slide down his throat.

“My noble ancestor was highly indignant, as you may imagine; but the unduly enlarged piscine monster, not to be baffled, endeavoured forthwith to carry his proposition into execution.

“There now ensued a struggle for existence

on the part of my poor relative, who, being discomfited, but somewhat nimble, at last succeeded in gaining a position of safety behind a projecting rock. My ancestor was nearly exhausted, and knew not what to do; for he was almost dying of hunger, and it was impossible for him to gain food, jammed up as he was in this corner. Suddenly, however, recollecting that he had recently come into the possession of several small pigmentary particles, he began to bethink himself how he might use them in self-defence. A bright idea flashed across his perplexed brain. He would sally forth and cast his colouring matter around and into the eyes of the big fish, who would thus be blinded and frightened, and finally obliged to give up the chase.

“Accordingly, he left his hiding-place, and his enemy seeing him, prepared for an immediate attack. My noble ancestor, with dauntless courage drew himself together, and contracting his body, with great vehemence and energy cast out a few grains of the pigment with which Chance had so kindly provided him. The effect was marvellous

Two or three particles found their way into the eyes of the monster, and so blinded and annoyed him that he at once precipitately fled.

“Oh! how thankful was my poor relative, and how he afterwards laughed at the discomfiture of the big fish! He still possessed a very small quantity of the precious material, and oh! how he prized and loved it. How he tried to eat up all the colouring matter he chanced to find, that it might be stored up in his body and again serve him in the hour of danger! How he gobbled up everything he saw which had colour! It was a marvel that he was not poisoned. Nearly all his children were equally fortunate in the possession of pigment grains.

“My forefather was honoured, during the remainder of his life, as a hero of no common type, and all his children for centuries afterwards were wont to tell of his illustrious exploits and his wonderful adventure with the big greedy fish. They endeavoured, one and all, to emulate his heroic deed, and consequently thrived in the midst of enemies, while those of our family who were not lineally de-

scended from this our great ancestor, were summarily devoured by predatory fishes.

“Yet, strange to relate, up to that time they had derived but little inconvenience from the want of a few paltry pigment particles. Perhaps, however, sharks suddenly became fond of them, as a relish, and appreciated them as a luxury of no ordinary kind.

“Now, my friends, this full and true account will exemplify to our recently proclaimed Emperor Archi-vertebrate the manner in which his family first gained possession of their nerves. It is probable that one of his progenitors obtained a very small portion of nerve-tissue, which, being produced by Chance, grew larger and larger in successive generations.”

“My claims,” said Archichthys, “have been shown to be false. Allow me, however, to say a few words for the edification of all. There are, as you see, spiny scales all over my skin, and similar ones in my mouth which serve as teeth. You must know that by the kind efforts of Chance they arose in the first instance. But how do you suppose that the spines became useful as teeth? Let me inform

you. Some of my ancestors once, long ago, happening to find a few spines fixed in their mouths, observed them to be useful in crushing food ; and so, strange to relate, survived, while all their relatives not similarly fortunate left posterity which in a few generations became extinct."

After this short address, inspired by a poetic impulse, Archichthys sang—

“ Ye creatures of this ocean,  
Ye dwellers on the land,  
Whose lives for many years have braved  
The noisy winds and seas,  
Go onward, brave companions !  
Your standards raise again,  
For we are now developing  
As fast as e'er we can.”

At this moment a peculiar feeling overcame me as I listened to King Archichthys. It seemed as if I was becoming influenced by some stupifying drug ; and with a vague notion that I had taken something poisonous during my late hearty meal, I was horrified to find myself becoming smaller and smaller, and everything began to whirl around me, until at length all was obscured in oblivion.

CHAPTER IV.



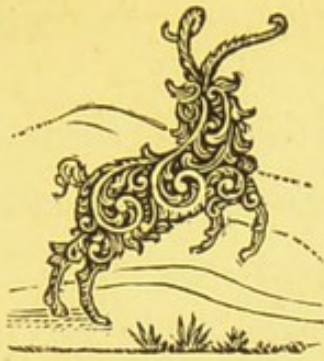
*SCENES IN ANT LIFE.*



“ Where order in variety we see,  
And where, though all things differ, all agree.”

“ In these beings so minute, and as it were  
Such nonentities, what wisdom is displayed,  
What power, what unfathomable perfection !”

—*Pliny.*



## CHAPTER IV.

### *SCENES IN ANT LIFE.*

**T**HE scene was changed, and I was not a little surprised to find myself groping through a long winding tunnel into the abode of a large colony of ants, for in my sleep I had become transformed into one of these tiny insects. On all sides I saw the industrious little occupants busily engaged. One, of large size, seated upon a tiny piece of bark which served for a throne, was evidently the queen, and I was struck with the subservient manner of all her numerous attendants, to whom at intervals she gave her orders most imperiously.

“Take these eggs,” said she, “which I have just produced, hatch them, rear the young, and tend them with great care.” No sooner was this command given than it was obeyed. My attention continued to be fixed upon the queen

until it was diverted by a green aphid (one of the plant lice) who approached, and thus addressed me : " Why are you standing idly here, when you see all your comrades so busily engaged ? How is it that you alone find nothing to do ? Why don't you make yourself useful by milking me, and thus revive us both ? "

These remarks seemed very odd, and I was about to express my surprise, when an ant who was near, thinking himself addressed, set to work vigorously to remove from the aphid a luscious fluid. I was tempted to partake of it, and found it refreshing and delicious. The ants gazed attentively at me, and seemed to be earnestly discussing who and whence I was.

I feared lest they should put me to death, but it was soon manifest that they had no such sanguinary intention ; for a sentinel-ant drew near, and tapping my shoulder, addressed me in a somewhat agitated manner : " Lead us forth to a glorious victory, brave captain ; for we are about to engage in deadly combat with a rival colony ! The unanimous voice of the soldier-ants has selected you for this office, more especially because you have only just come

among us, and are therefore not likely to exercise any favouritism in the promotion of the soldiers."

I accepted the command with thanks, and sallied forth under his directions, wondering how this strange adventure would terminate. What was my surprise, on emerging from the formicary, to see myriads of soldier-ants drawn up in battle array. The sentinel-ant whispered to me that an address to the troops would be expected on this great occasion, and then left me alone in front of the assembled hosts. I spoke as follows :—

" My brave warriors! yours is to be the honour of destroying the wicked foes who have so recently attacked your beautiful home! Mine is to be the unlooked-for honour of leading you forth to victory and glory! Some of us will be slain, some wounded, some led into captivity. These are necessities of warfare."

I should have continued, but was interrupted by cries of warning from the sentinel-ants that the enemy was at hand. One hasty glance I took around, before giving the order to charge, and observed that all my soldiers were pro-

vided with claws of most formidable character, and that their heads were almost as large as their bodies. I was similarly shapen and equipped, and we had, in addition, the power of ejecting a poisonous liquid of sulphurous odour.

With such soldiers, what could a leader fear? Confident of victory, I cried out in a loud voice, "Forward, my brave warriors! To the front!" The battle soon raged furiously. My soldiers indeed fought so vigorously that some died from pure exhaustion, while others in their fury ejected not only their poisonous fluid, but even their poison receptacles. At length, after a long struggle and varying fortune, some reserves, which had been sent from the nest to our aid, came dashing up and carried all before them. The victory was ours.

"The day is gained!" cried I. "Fall in, and prepare for the homeward march." Without hesitation my soldiers obeyed, for they were tired and hungry, and many were severely wounded, so that they could hardly hobble along the stony paths. After a tedious march, we were delighted to arrive at the formicary, and having entered, we sat down to a copious

repast, which all enjoyed. After the meal a lively discussion arose between two neuter ants respecting the origin of their society and the question of the division of labour. They nominated me arbitrator. The argument of one was that the society had originated by the fostering care of a Designing Power; while the other maintained that all had been the work of far-seeing Chance and good-natured Evolution.

Selecting twelve neuters as jurors, I thus addressed my intelligent hearers:—"The individuals of your monarchy comprise many distinct kinds, each with a definite sphere of labour. You possess slaves to do your work and cows to supply you with milk. Your society is indeed most wonderful! But how have some of you been rendered sterile? How is it that both in structure and in instinctive capacities the neuters differ widely from the other members of this community. Granting that once upon a time a peculiarly-constituted queen-ant had given birth to one neuter, of what advantage would this one have been to the colony? It would probably have died without its distinctive characteristics being understood.

We will suppose, if you like, in order to surmount this difficulty, either that a queen-ant was in the habit of producing one now and then, until at length these isolated neuters began to attract notice; or else that she, on one occasion, produced many, which by reason of their numbers drew marked attention to their peculiarities. We will further suppose that the neuters, even from the first, differed very widely from the rest of the ants; for if the differences were slight, they would have been of little service to the community. Granting all this, however, how could these sterile ones have propagated ants similar to themselves? Do you suppose that the queen, seeing of what advantage they were, developed a strong desire to produce neuters, and that at length she actually succeeded in doing so? and further, that this desire became stronger and attended with still more marked success in the succeeding queens? But again, consider how the neuters of several different kinds of ants vary. Not only do they differ from the queen and the other members of the colony, but also from one another, to an almost

incredible extent. Indeed, in one variety of the ant tribe there are, at least, three distinct kinds of neuters, acting in unison for the welfare of the community, and there are no intermediate forms linking them together. A particular caste, in one case, even secretes honey for the colony. Surely a Designing Hand is here traceable.

“To proceed, let us discuss the condition and origin of your slaves. You are, perhaps, aware that in some communities of ants the members are so dependent on the slaves that they could not survive one single day without their aid. Even when the masters migrate, they have to be carried by their slaves. Indeed, their only end and aim in life is to capture and educate their future attendants. Explain, if you can, the high instinct herein implied, the origin of this desire to secure slaves, and the other numerous, wonderful, and highly-perfected powers which characterize you and other kinds of insects. For instance, how was the desire of the honey-bee to collect honey first acquired? Was it the work of Natural Selection? Was it due to the inheritance of



habits acquired and strengthened by slow degrees in successive generations? Let us consider more closely this case of the honey-bee. You are doubtless aware of the marvellous manner and mathematical precision wherewith she forms her cells, in which to store the honey gathered from the beautiful flowers around. How was this wonderful habit acquired, how matured, how perfected? Ignoring for the present the difficulties of any explanation of the inclination to store up honey for future use, how can we account for the production of the wax-making power? Let us imagine that an early ancestral form had acquired the capability of making wax in small quantities. She would then be able to use the wax in the construction of store-houses, only under the condition that she had simultaneously developed a capacity for making store-houses, or at any rate she must have perceived the possibility of making wax store-houses of some rude description. Let us assume both these conditions to have been fulfilled. We must also suppose that her children inherited the newly-obtained powers in a still higher degree. They would

then be able to store up honey more perfectly, and would consequently, you say, all live to a ripe old age, surrounded by a large flock of still more highly-gifted little insects. Is it possible that the capacity for storing up honey could have been thus acquired? Is it likely that in the early stages of the development of this power the slightest benefit would accrue to the possessors thereof? It is almost a wonder that we do not hear that the queen of one community, having suddenly left offspring with a slight advance in their ability to construct store-houses, gained so much advantage in this respect over a neighbouring community that the latter suddenly perished.

“My friends, in the course of my travels through other lands, I have heard equally absurd arguments advanced by some people; but nevertheless you may be assured that a Designing Hand is clearly indicated. Depend upon it, my friends, a much higher power than the fairies mentioned has been at work. Chance, always acting blindly, as she does even though aided by Natural Selection, could never have initiated—much less perfected—such instincts

as those of the honey-bee. Have you not read that

‘All nature is but art unknown to thee,  
All chance direction which thou canst not see’”

My address was now ended, and the two neutrals and the twelve jurors forthwith began to speak with one accord. I therefore proposed that every one should be silent and the vote of the jurors recorded.

Nearly all voted in favour of my view, and I was delighted with the almost unanimous decision.

But now a most awful sound, like that of a terrific explosion, was heard, and a huge rent in the ground became apparent. Into this I fell, and continued to fall, until my descent was interrupted by a splash.



CHAPTER V.

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*THE CLIMBING FISH AND THE BEAUTIFUL  
LIZARD.*

“The spacious firmament on high,  
With all the blue ethereal sky,  
And spangled heavens, a shining frame,  
Their great Original proclaim.  
Th’ unwearied sun, from day to day,  
Does his Creator’s power display,  
And publishes to every land  
The work of an Almighty hand.”

—*Addison*

“Can that which is *not* shape the things that are?  
Is Chance omnipotent? Resolve me why  
The meanest shell-fish, and the noblest brute  
Transmit their likeness to the years that come.”

—*Sladden.*



## CHAPTER V.

### *THE CLIMBING FISH AND THE BEAUTIFUL LIZARD.*

I NOW found myself floating in the waters of a subterranean river, and the peril of my situation caused me much alarm.

After a short time, as I looked around, I found that the river was closed in on all sides by walls of chalk. Swimming along, I met some very strange fishes, such as I had never before beheld. One of these, who particularly attracted my attention, addressed me as follows :—

“ We have been waiting here a long time for you. Why have you not ere this appeared ? ”

On my inquiring why he expected me whom he had never seen before, he replied, “ We who inhabit these regions have all been awaiting your arrival ; for we have always believed that the

great fairy Chance, who has been working so long and diligently, would eventually be so far successful as to create some being like yourself."

"Do you, then, consider me very highly advanced?" was my rejoinder to this strange speech.

"Yes, of course," my new friend replied. "It is evident that you are superior in many respects."

Looking carefully at myself, I perceived that his words were true, for my limbs were fin-like, and my body that of a fish of very high type.

Thinking that it would be better to make my escape from this strange underground tunnel and from such extraordinary surroundings, I bade my newly-formed acquaintance adieu, and began to swim as rapidly as possible in the direction of the current; for it seemed certain that the sea would thus ultimately be reached. Passing by a fish of large size and strange appearance, I inquired of him how far it was to the ocean. He said,—

"My dear sir, you will not be able to travel much farther. Let me warn you to beware, for you are evidently not acquainted with this

stream. It is very dangerous, and you will certainly be destroyed if you attempt to reach the end. You must know that this river has its origin on the one hand in a large inland lake, and on the other is supposed to enter the sea at the bottom thereof. But no one from this river has ever entered the obscure regions beyond, and we know nothing of it except that it is very dark and cold, and almost deafens with the noise those who approach it."

Meanwhile the current had carried us swiftly onward, and as it became more dark and drear, we could hear ominous sounds in the distance, which warned my friend to return, since, as he informed me, if one should approach too near the dread abyss, opportunity of escape would soon be lost for ever. Nevertheless, curiosity involuntarily impelled me to journey onwards, in spite of parting admonitions to return before it should be too late. Forwards I rapidly swam, soon, however, to find the fish's fears only too well grounded.

The horrible sounds and the terrible appearance of some of the monsters which abounded on all sides and seemed inclined to



crush me with their powerful teeth, induced me to try and swim backwards as quickly as possible. My utmost efforts were fruitless. It was too late! I strained every nerve, but all in vain. My doom it was to enter the infernal region. The end was near. I resigned myself calmly to my fate. For one short moment all was obscured in oblivion, and then I found myself floundering helplessly to and fro at the bottom of the sea, having experienced no harm whatever from my perilous adventure. I now swam up to the surface of the ocean, and was soon being tossed about by the noisy waves. Fishes of many kinds and sizes, some like sharks and some like eels, and others of most extraordinary shapes, crossed my path; and to my surprise peculiar thrills like electric shocks ran through me. This was evidently due to the fact that many of the fish were capable of generating electricity. One of them, who presented some similarity to a Ray, approached and thus addressed me:—

“We hope, sir, that you will be able to give us some information concerning a matter of the greatest difficulty to us. We cannot

imagine how it happens that electric powers are possessed by so many of us, differing, as we do, in numerous most important points ; and we find it still more wonderful that the organs to which we owe this power of generating electricity, though formed on similar principles, are quite different from one another, and are situated in a different part of the body in different races. Now, we might imagine that Chance and Evolution so arranged that one of the remote ancestors of the fish tribe suddenly acquired some power of converting certain other forces into electricity, as the function of one particular portion of the body ; and that, continuing their work, they gradually caused the existence of many *genera* of fishes, each one being possessed of electric organs of a similar type. But what do we find to be the case ? We see many of the class of fishes to which we belong endowed with this peculiar power as a function of dissimilar organs. The difference in the position and in structure of the organs surely implies a different origin in each case."

After pondering on what he had said, I thus

replied : “ Your remarks lead me to the conclusion at which I have often before arrived, viz., that some Great *Intelligent* Power has been, and is continually, at work.”

The interest taken in what I said was becoming very general, and the fishes crowded round me on all sides, as I continued : “ The wings of birds and those of insects are very differently formed ; yet they serve a similar function. Their eyes also are very different ; yet they, too, have similar purposes. There are also many other equally striking examples. We must look upon new structures as built designedly, because their special functions were necessary. We must *not* regard them as first being accidentally made and afterwards put to some good purpose by their fortunate possessor.

“ It is therefore necessary that we should admit the agency of an All-ruling Power, for we cannot believe that a structure would be made on the mere chance of its being useful, or that any useful function would or could cause by chance the appearance of a new structure in order to perform it.”

“I quite agree with you,” remarked my friend. “It seems impossible that the two fairies could have alone worked such wonders.”

Several obstinate members of this band of electric fishes were, however, so angry with my views that they conspired together to electrify me on the spot. Perceiving their intention, I swam off rapidly, and was soon at a respectable distance, closely pursued, however, by those who would not look at the question from an impartial aspect. They could not understand that every great problem can be looked at from more than one point of view, and were ready to devour all who disagreed with them. The distance between me and this horrible shoal was gradually being increased, and at length the water became more and more shallow, and ere long, to my delight, I was standing on *terra firma* once more, and immediately assumed the form of a frog.

I did not relish being thus ignominiously driven away, but I full well knew that—

“ Authority intoxicates ;  
The fumes of it invade the brain

And make fish giddy, proud, and vain.  
By this the fool commands the wise,  
The noble with the base complies ;  
The sot assumes the rule of wit,  
And cowards make the brave submit."

Feeling secure and much more comfortable, on I hopped ; but finding no inhabitants on the land and nothing to interest me, in search of adventure, I dived head-foremost into a deep pond. Newts and salamanders and amphibians of many kinds greeted my unexpected arrival with a hearty welcome. There were many creatures also which presented so great a resemblance to frogs, and were at the same time so like fishes, that it was impossible to name such oddities. Having made the acquaintance of a frog like myself, and being somewhat ill at ease among the motley herd, I suggested to him that we should leave the water and take a stroll together in the woods. Flowers of most gorgeous beauty filled the air with the sweetest of perfumes, and, attracted by the sweet-smelling scents on all sides, bees were busily collecting honey and enjoying the bright sunshine. As we tripped joyfully along my

companion inquired of me if I had ever heard of a fish called Anabas Scandens ?

“ Yes,” replied I ; “ does he live in these regions ? ”

“ He does,” rejoined my friend. “ His marvellous characteristics are, as you know, full of interest. We may, perhaps, fall in with one of the family.”

Progressing joyfully onwards, and conversing merrily on sundry topics, we shortly espied seated on the branch of a tree one of these remarkable creatures. “ My dear Anabas ! ” my friend exclaimed ; “ I hope I see you well. I was just speaking of you to my companion, who is most anxious to make your acquaintance.” Mr. Anabas, though a fish, now descended the tree, and after a hearty greeting, said that he should be happy to tell me anything in his power which I might wish to know. “ You must be aware,” said he, “ that my power of living both in water and on the land enables me to look upon the most difficult questions from a twofold and a broader aspect.”

Thinking that this opportunity for acquiring information was not to be despised, I

said: "How is it then, that you, being a fish, are able to climb trees and breathe air not dissolved in water? and how have you acquired so great an advantage? I had always previously thought that the breathing organs of fishes were only adapted to the respiration of air dissolved in water."

"Oh! that is easily explained," replied he. "One of my ancestors, many a long year ago, finding himself left on land, by reason of the partial drying up of the lake in which he lived, lay gasping for breath. Being at the point of death, he bethought himself of opening his mouth very widely, so that air might possibly enter, and by thus aerating the blood in his gills, in some degree revive his failing powers. It would then be possible for him, he thought, to propel himself slowly back into the water. He was not long in carrying out this bright idea, and thus his life was saved.

"Some time afterwards, a similar accident befalling him, he was left still higher on the dry land. He had again recourse to the same expedient, and once more with success. Having returned to the water, he felt none

the worse for his adventure, of which he duly informed his wife. When the joyful couple spoke of these exploits to their relatives, the latter refused to believe the narrative, but afterwards reaped the fruits of their incredulity. His children inherited the power and acquisitions of their parent, and often went on land to try their fortune in the neighbouring woods, and after the lapse of many ages his posterity could move about on land with ease and comfort. Consequently, thus favoured by Chance, they escaped the attacks of enemies by instantly betaking themselves to the shore. All the progeny of relatives not so lucky gradually died out; while my ancestors, fortunate in their possession of these newly-acquired powers, still further increased them, and ultimately even became able to climb trees. At the present day there is not a descendant of the incredulous relatives left to tell the sad history of their extinction."

My friend, the frog, who had not previously heard this absurd tale, laughed immoderately, while Mr. Anabas boiled with suppressed rage at his unseemly mirth and ill-timed levity.



“Do you really mean to assert, Mr. Anabas,” I asked, in order to prevent the quarrel which seemed imminent, “that when your illustrious ancestor found himself stranded on the land, he suddenly acquired so marked a power of breathing air not dissolved in water as to enable him to live and return to his former more suitable quarters? and, indeed, waiving this point for a moment, whence came this power of climbing trees?”

“Oh! quite similarly,” said he, “quite in a similar manner. An ancestor of mine, a great-great-grandson of the noted founder of our family above mentioned, being on one occasion chased by a fierce creature, would have been slain had he not suddenly made a great effort to climb a tree and thus get out of his reach. His efforts were crowned with success. This power was perpetuated and increased in future ages, and now you see with what comfort and joy I sit above and look down upon the fishes doomed to live and die in the water.”

More than ever convinced of his amusing charlatanry, we bade Mr. Anabas farewell, and

laughing heartily, we hopped away arm-in-arm, well knowing that "the truest characteristics of ignorance are vanity, pride, and arrogance."

"Let me now take you to see a particular friend of mine," observed my companion. "He is a lizard of great beauty. We will have a chat with him, for he has a very interesting story to relate. You really must hear it. I used to know him most intimately.

"He was in logic a great critic,  
Profoundly skilled in lacertilic ;  
He could distinguish and divide  
A hair 'twixt south and south-west side.  
On either which he would dispute,  
Confute, change hands, and still confute.  
He'd undertake to prove by force  
Of argument, a man's no horse ;  
He'd prove a buzzard is no fowl,  
And that a lord may be an owl ;  
A calf an alderman ; a goose a justice ;  
And rooks committee men and trustees.  
He'd run in debt by disputation,  
And pay with ratiocination ;  
And when he happened to break off  
I' th' middle of his speech or cough,  
He'd hard rules ready to show why,  
And tell the rules he did it by.'"

I gladly agreed to my friend's proposal, and

so we wended our way along merrily. At length my companion, taking up a small stick, tapped at the door of his friend the lizard. "Come in!" cried a jovial voice, "and make yourselves at home." At this moment there appeared at the threshold of his tidy home a graceful lizard of beauty rare. We were well-nigh dazzled as the morning sun shone on the soft-tinted gold, purple, and green which adorned in rich profusion our welcoming host.

"Would you think, would you believe," began my joyous companion, "that this beautiful creature's great-great-great-grandfather was so detestably ugly that nobody would have anything to do with him? He was shunned as though he were a leper."

We now stepped in, and Mr. Lizard, bidding us both take seats, said in a serious voice:

"It *is* perfectly true that my respected ancestor, alluded to by my dear friend, was so nauseous in appearance, that animals who had inadvertently taken poison, or for other reasons wished to be cured of bodily infirmities of 'omnigenous omniscency,' came to him in shoals, since the very sight of him enabled

them to dispense with the less certain mustard and water, and tartar emetic."

"This is really very strange!" exclaimed I. "How then is it you are so beautiful?"

The lizard wiped a tear-drop from the corner of each eye with his horny nail as he replied, in a serious manner:

"I will tell you as much as I ought; for reproach or mute disgust is the reward of candid friendship that disdains to hide unpalatable truth. 'Tis true, indeed, what your friend has said, my ancestors were all very ugly; but I will now explain to you the reason of that personal beauty which is the chief feature of my race. The ladies of our race in olden times were so very fastidious, that they took the utmost care to select for husbands those of our forefathers who were even a little—a very very little—less hideous than the rest. The number of beaux was about that time equal to that of the belles; but those of the latter who had not the good fortune to procure handsome husbands, with remarkable philanthropy, preferred to remain single, in order that the race might thus in time become less ugly."

“Very strange!” said I. “Ladies as a rule will marry the best if they can, but if not they will accept another; and again, had not the gentlemen any choice in the matter? Did the ladies never sing?—

‘If he loves as is his fashion,  
Should I churlishly forsake him,  
Or in pity to his passion,  
Fondly to my bosom take him?’

(And did not the echo answer), ‘Take him, take him?’”

“Oh, no!” replied the lizard; “and I may mention another point. It often happened that gentlemen who were physically stronger than their more beautiful comrades overpowered them and captured their wives. Then, indeed, we gradually became more and more beautiful, and daily more graceful, until at length all our family became as lovely as your humble servant. Our ladies,” continued the lizard, “did not pay any attention to the echo of their own wishes; their motto was—

‘Take heed, you dainty damsels all,  
Of flattering words beware;  
And to the honour of your name  
Have you a special care.’”

“But one would have thought,” said I, “that beauty and strength would not always have gone hand in hand, but that the tendency would have been to develop either strength *or* beauty, more probably the former, and not both simultaneously. Again, it is very strange that the ladies of those early ages had such discriminating power, and such accurate judgment. How very intelligent they must have been!”

“Oh,” replied the lizard, “that is easily explained; for the more beautiful the gentlemen became, the more cultivated also became the taste of the ladies. And the beau used to sing of his belle,—

‘*Lizzy* is my only joy,  
 Faithless as the winds or seas;  
 Sometimes cunning, sometimes coy,  
 Yet she never fails to please.  
 If with a frown  
 I am cast down,  
*Lizzy*, smiling  
 And beguiling,  
 Makes me happier than before.

‘Though, alas! too late I find  
 Nothing can her fancy fix;  
 Yet the moment she is kind,  
 I forgive her all her tricks.

Which though I see,  
I can't get free,  
She deceiving,  
I believing,  
What need *Lizards* wish for more.'

"You see," said the lizard, "the gentlemen were very easy to please and very forgiving."

"Then you maintain," replied I, "that the gentlemen became beautiful because the ladies were fastidious, and the reason the ladies were fastidious was because the gentlemen became beautiful."

"I don't care," replied the lizard, evidently losing his temper; "didn't I tell you that many ladies would not marry at all because they couldn't suit themselves, and many a poor Lizzy

'Sat mourning for beauteous love upon a wintry bough'?

for modest Cupid is a good judge of personal charms, and as our ladies were always wont to select those of rare beauty, and of inexpressibly sublime and wondrous accomplishments, we are now, you see, a most graceful and very lovely race. Our accomplishments you do not know. They are great also."

“But we read,” replied I, “that—

‘Love looks not with the eyes, but with the mind,  
And therefore is winged Cupid painted blind.’”

“Supposing now,” answered the lizard, “I were to take my brushes and water colours and paint you blind—without eyes, would that prove you had no eyes? and supposing I were to paint you without legs, would that be proof positive that you had not any?”

“And supposing,” here interposed my friend the frog, who until now had been silent, “he didn’t paint you at all, would that prove that you didn’t exist?”

“And even if he is blind,” continued the lizard, “you had better beware of angering the blind hunter boy, armed with shining quiver and tinsel shaft; for the little cherub will hurl his arrow into your heart as soon as look at you, and his bolts are not so feathery light!”

“So he may,” replied I, “for aught I care—

‘Love sought is good, but love unsought is better.’

And I want to ask you what advantage it was to your race to become so beautiful? How was it that your race especially progressed so



in a comparatively useless direction? Surely you don't maintain that mere beauty would help a creature to earn his daily bread?"

Mr. Frog, who had hitherto with difficulty restrained his mirth, was so tickled by these arguments of his friend the lizard, that he burst into a fit of uncontrollable laughter and exclaimed, "Oh, most lame and impotent conclusion!"

Having nearly choked himself with laughter, he at length recovered his self-possession, took up his hat and stick, and bade Mr. Lizard a very good day. "Let me tell you," said he as he left the grassy home of the beautiful creature—

"Their copious stories, oftentimes begun,  
End without audience, and are never done.'

But we must hurry on, as in this vernal season these woods are full of interest and beauty, affording plentiful instruction to both of us. For—

'In the spring a fuller crimson comes upon the robin's  
breast,  
In the spring the wanton lapwing gets himself another crest,  
In the spring a livelier iris glows upon the burnished dove,  
In the spring a young man's fancy lightly turns to thoughts  
of love.'

“I quite admit,” said I to my friend, as we hastened along, “that there is an element of truth in what Mr. Lizard has told us, yet there is much exaggeration in his mirthful stories; and if we do not allow that *all* is true, the question still remains, who gave such discriminating power to these brilliantly-coloured creatures? It certainly was not Chance.”

“No,” replied he; “for all chance is direction which thou canst not see.”





CHAPTER VI.

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*A SERPENT'S COMPLAINTS.*

“Naught so vile that on earth doth live,  
But to earth some special good doth give ;  
Nor aught so good, but strain'd from that fair use  
Revolts from true birth, stumbling at abuse.  
Virtue itself turns vice, being misapplied ;  
And vice sometimes by action's dignified.”



## CHAPTER VI.

### *A SERPENT'S COMPLAINTS.*

**D**EEPER and deeper into the wide woods we moved on the soft carpety mosses, amid thickly set masses of bushy underwood, which grew luxuriantly everywhere. On all sides snakes were gliding gracefully along; birds of beautiful plumage flew from tree to tree, enlivening the lovely scene; the larks of early morning, soaring high in the heavens above, were singing, and linnets, perched among the hazel trees, peeped at us in joyful ecstasy. Creatures, half snake-like half bird-like, were flitting to and fro in the air, among firs and pines thickly studded with cones, and every now and again they seemed ready to swoop down upon and devour us, so ravenous did they look. Fear fell upon us; but still more terrified were we to observe crossing our path, and thus

preventing our onward progress, a huge serpent, with large glaring eyes, fearful to behold.

After gazing upon us for a short time in an indescribable manner, we were surprised to hear him squeak slowly, in a mournful tone, "Be not afraid, my friends; the expression on my countenance is not one of savage cruelty, as you seem disposed to imagine, but one of deep, undying melancholy. I am sad, and would fain make you my confidants, ask your kindest counsel, and give you my friendship and aid in return."

We were greatly relieved by this short but welcome address, and began once more to breathe freely.

"I am puzzled," continued the serpent, "by many problems which to me seem insoluble; and no one will listen to my views, each goes his thoughtless way. Thus my life is rendered miserable; for I am a philosopher, and think deeply. No legs propel me joyfully along this earth, while my fellow-creatures trip about gaily and hop on their toes. This saddens me, and fills me with despair."

"It is hard," said I in reply, "to understand

why you complain, seeing that your ancestors were, and all your relations now are, in a precisely similar condition."

"Indeed you are mistaken!" cried our newly-made acquaintance. "My progenitors had well-formed legs, and even I have rudiments of them remaining; though, indeed, they are hidden from the sight."

"Very strange!" said I. "Doubtless you ought to know; but if this be true, it is difficult to understand why you have not inherited the advantages of your forefathers. Perhaps your ancestors, being convinced, for some reason or another, that locomotory appendages were unnecessary, desisted from making further use of their legs."

"I am not certain," replied the serpent, "if it is possible to give any satisfactory explanation; but let me endeavour, since you seem interested, to set forth the matter as we serpents are wont generally to understand it. Once upon a time an ancestor of mine was born with unusually small legs. His brothers pitied him, his relatives despised him, and his parents even went so far as to condole with him concerning this defect,



which they looked upon as a great misfortune. He seemed, however, as he grew older, to be rather benefited than otherwise by the smaller size of his organs of progression. In fact, being disinclined on that account to take much exercise, my ancestor stored up energy for other work. In the course of time he waxed strong and became unduly corpulent. All his children inherited this, together with his other peculiarities, and indeed had legs even smaller than their father's were. Now his descendants, thus shapen, had such advantages over their relatives in being better able to cope with their antagonists in obtaining their daily food and in overcoming the difficulties of life, that they alone survived."

"Nonsense!" I exclaimed. "This is simply absurd! It would be preferable to suppose that that ancient father of yours was so excessively idle that he made but little use of his legs, which, in consequence, gradually dwindled away. His children would inherit both his small legs and his idle disposition, and thus gradually their legs would become less and less, until at length mere rudiments would remain. But it is much

more probable that the idleness of your worthy ancestor would have caused, not this defect, but the extinction of the race, owing to the wasting away of their legs and the consequent incapacity for travelling far in search of food, if not, indeed, as a direct result of the sluggishness implied. Indeed, had your race become extinct, we should have concluded that it was owing to this loss of their organs of progression. Your views are erroneous; for you hold that creatures without legs would be better able to survive than animals provided with these useful appendages. In short, it is impossible for me to suppose that a perfect method of progression could have been superseded by another method, which in its infancy, and for a long time, would have been quite inadequate, and would have required during its development a large expenditure of force."

With these words I concluded, and bidding Mr. Serpent adieu, moved off rapidly with my companion. Indeed, the trees around were making us very uncomfortable, as large quantities of pollen dropped upon our heads, and we both sneezed violently in consequence.

After this little episode we continued our onward course through the wood in silence, until at length my companion, who evidently had been thinking deeply, began in a serious tone :

“ One of our most learned philosophers has recently been engaged in discussing the wondrous things of nature, and his words have ever since kept me in a state of intense amazement. For instance, this sapient individual declares that many fish possess an apparatus—a kind of bladder—by means of which they can so regulate their weight as to be able to sink and rise in the water at will. This, indeed, serves in many of them no other purpose, and in some fish, where it is small, does not even perform this useful function.”

“ Well,” said I, “ there is nothing incredible in this.”

“ Oh, don't be so sharp !” my friend retorted with some asperity, “ I have not yet finished. The learned sage asserts, further, that this apparatus is the original source, the fountain-head, as it were, from which our breathing organs have been developed ; in short, that in the course of time the air-bladder, or swim-

bladder, as some call it, became useful, not for hydrostatic purposes, but as a means of purifying the blood. He maintains that this structure arose, in the first instance, as a simple outgrowth from the fore part of the gullet. As to the cause of such origin he says little, but evidently leaves us to imply that Chance was responsible for its appearance. Nor does he explain of what advantage such an outgrowth as he describes could possibly have been when it *first* arose, nor why fish provided with this early rudiment would thus be more likely to survive in the struggle of life, and have similarly favoured offspring, than others who were not so fortunate as to possess it. We are, of course, to imagine that Chance did not desist from special interference."

By this time we had reached the confines of the wood, where after a hearty greeting my friend took his leave of me.

Now, as I looked into the clear limpid waters of a shady pool o'erhung by boughs of lofty trees, I saw in the mirror the reflection of my small stumpy form gradually assuming the shape of a beautiful zebra. I was about to gallop over

the grassy plain, when my purpose was thwarted by the sudden appearance of the fairy Chance once more before me.

“I have,” she began, “now come, perhaps for the last time, to visit you and give my friendly assistance. Hitherto my efforts to set at rest your wondering mind have been in vain. Often have I told you that all the marvels you have seen are to be attributed to my power. You have not believed me; nay, more, you have contradicted and set at naught those who spoke on my behalf,—you have too often derided her who has so long befriended you. In return for your incredulity and base ingratitude, I shall not desert you, but you shall have still further opportunities of altering your absurd opinions. Let me warn you, moreover, to beware how you trifle with me longer, lest you meet with an untimely death, for your scepticism is already wearying me.”

“In my opinion you have effected nothing,” replied I; “for what could Evolution accomplish when ruled only by you? Some Designing Power it is clear has been at work, not merely in the creation of the primitive matter, but also

in the initiation and maturation of every subsequent change. And the manifestation of his designs prove clearly that you have had no share in the creation of the universe, or in its progress. Evolution, in short, is not your handmaid; for by your guidance she could effect nothing; she is but the means by which the designer has accomplished his ends. Truth!" I cried, "though the heavens crush me for following her; no falsehood, though a whole celestial Lubberland were the price of apostasy! In you I can no longer repose my trust. Your claims are false and shallow."

The enchantress gazed angrily at me a while, with sorrow depicted in her false, lustrous eyes, and then replied,—

“‘Your folly, as it grows in years,  
The more extravagant appears.’

Yet you shall have other opportunities; for I am resolute, and my will is strong."

While thus speaking, Chance quickly vanished, and I beheld afar off a giraffe with lengthy neck browsing on the highest branches of some trees. Attracted by the sight of this beautiful creature, and anxious to ascertain the

cause of the extreme length of his neck, I was soon by his side. Apologising for so sudden an intrusion, I politely said,—

“My friend, it is to me a matter of great surprise when I observe the extreme length of your neck, and the service it renders you. Will you kindly tell me how it became so long?”

“Oh! nothing would give me greater pleasure,” answered the giraffe. “You must know that once upon a time there was a dearth in this land, so widely spread and so disastrous, that for miles around the grass ceased to grow, the plants and trees withered, the ground became barren and dry. As you may imagine, many of the smaller trees, inasmuch as they were more easily reached, were soon devoured by the animals who inhabited that region; the others were quickly denuded of their remaining green leaves and succulent twigs, and it was not long before the highest branches of the strongest of them alone retained traces of verdure.

“Our race was naturally tall, but the family from which we giraffes of the present day are derived was far more distinguished in this respect than others.

“Animals died all around, and finally a few members of our family alone remained to tell the sad tale. At length there were but two or three left, who were of course the very tallest of the tribe. These few surviving members had well-nigh succumbed, when suddenly the dread dearth ceased, rain fell, vegetation once more flourished. And all their descendants were noted for the possession of still longer necks.”

“But surely,” said I, interrupting the narrative, “it must have been a very gradual process, so much so that no great advantage can be supposed to have accrued at first. Surely many famines must have occurred, and in each case it must have happened that when your few remaining progenitors were about to expire from starvation, rain immediately fell just in time to save these remnants of the race.

“Further, if the famine had been so extensive and dread as you have described it to be, surely all the trees and shrubs, and all animals, would have quickly lost their moisture and died. Indeed, to make your explanation intelligible, we must draw upon our imaginations



very extensively, and we must assume all sorts of improbable conditions and circumstances to have concurred together, as it were, in one great scheme. In short, your views seem to me absurd. But tell me, can you explain on a similar theory how it is that my skin has such beautiful stripes and yours those lovely chequered spots."

"Were it possible," answered my lofty friend, "you would probably raise all sorts of objections; but having a most important engagement to dine, with a friend upon a luscious tree, I cannot stay, for I am no garrulous babbler with time to waste in useless colloquy with one so obstinate as you."

"Is it thus," I said to myself, as the lofty giraffe, giving me a withering glance of parting contempt, mingled with compassion, set off at a brisk trot, "that—

"Because I cannot flatter and speak fair,  
Smile in men's faces smooth, deceive, decoy,  
Back with French nods and apish courtesy,  
I must be held a rancorous enemy!  
Cannot a Zebra live and think no harm,  
But thus his simple truth must be abused  
By camelopards tall and spry?"

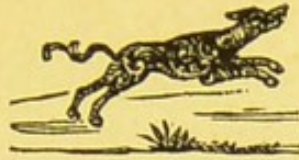
CHAPTER VII.

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*NEW ADVENTURES AND NEW FRIENDS.*

“Doubtless all souls have a surviving thought ;  
Therefore of death we think with quiet mind,  
But if we think of being turned to naught,  
A trembling horror in our souls we find.”

—*Davies.*



## CHAPTER VII.

### *NEW ADVENTURES AND NEW FRIENDS.*

ONWARD I sped over the arid, desolate country. No vegetation varied the dreary scene. No animals afforded interesting topics of reflection to my weary, aching brain. All around, extending for immense distances far and wide, was one long expanse of burning sand, one vast desert waste. The heat was intense, the sun's rays being extremely powerful, and my poor face and feet were almost scorched by the burning sand. Overpowered with thirst and fatigue, I felt that the fairy's cruel prophecy was about to be fulfilled, that my end was near.

Stay! not yet! Too soon to deplore my fate. Surely it was not a delusion, a mirage, but a real oasis which I dimly perceived in the far distance!

My energy was renewed, I redoubled my

pace, and at length was overjoyed to reach this fertile spot in the desert, which trees and shrubs and flowers and herbs adorned with the splendour of their beauty. A small spring was near, from which bubbled up clear and pure water. Rejoiced beyond measure, I took long draughts of this refreshing fluid. Having quenched my thirst, I felt myself again; and looking round I proceeded to examine the nature of my new and more agreeable surroundings. The trees were of different kinds: many were laden with nuts, others with luscious fruits of tempting appearance. Monkeys were the only animals to be seen. They were perched upon the loftiest branches of the trees, chattering loudly, cracking nuts, and joyfully springing from bough to bough. Seeing me, they were at first frightened; but soon becoming bolder and recovering their self-possession, they began to amuse themselves by pelting me with nuts. As I was about to expostulate, one of them, evidently much more intelligent than the rest, and far wiser in appearance, beckoned me towards the tree on which he sat. What was my surprise to find, on attempting the ascent,

that I could climb the trees with perfect ease.

My zebra-like form had changed into that of a long-tailed ape. Soon I had reached the bough occupied by the monkey-chief, who now advancing said,—

“You will doubtless be able to impart amusement and instruction, and will therefore be of great service to me, since it is my duty to report on all important topics of the day. My next address will be on “Use and Disuse.” Of course you are aware that if any muscle or organ of the body is not used, it dwindles in size, and finally almost entirely disappears; whereas regular, systematic exercise enhances its quality and adds to its amount. Just as our philosophers, the wisest apes among us, have always been those who have been most eager in the pursuit of knowledge: for their intellectual powers have been developed by use.”

“Exactly!” was my rejoinder. “It gives me great pleasure to find that not only do the same matters interest us, but that we also hold similar views with respect to them.”

My new friend now proposed that we should take a walk in the cool of the evening, with the object of searching for new ideas. He said that he preferred to do so at that time, and not in the morning or afternoon, since the heat was not then so oppressive.

After a frugal meal on nuts and fruit, we started on our evening tour. We enjoyed the walk thoroughly, and as we journeyed along discoursed on many subjects. At last my friend spoke of primitive men, and informed me that he would lead me to a place where they could be seen.

Examining our surroundings carefully as we moved along, we soon perceived from the character of the changes evidently in action, and from the nature of the deposits which had been forming, that we had reached an age (the Pleistocene) in which the appearance of the most primitive of men, the River-drift Hunters, was to be expected. Progressing hastily onwards, we passed by immense forests of firs, closely packed yews, oaks, and birches; among them mammals of many kinds abounded.

Afar off were to be espied numerous

creatures, man-like in appearance ; and as we advanced we saw some of them busily engaged in making implements of quartzite and flint, while others were actively employed in using these roughly made unfinished tools. Some were hunting the reindeer, others were similarly in pursuit of horses, and mammoths of huge size. Their reasoning powers were of a very low order. The condition of the creatures was indeed one of savagery. My friend now told me that these men were spread far and wide over the surface of the earth, not being confined, as might have been supposed, to one continent ; and also that man was now in a condition of rapid progress, especially in the temperate regions, where he would first make a great and distinct advance in intellect and general development. Our walk had been long and we were both somewhat fatigued. As the sun began to set, we lay down on the grass and fell asleep.

Awaking next morning at early dawn, we continued our onward progress through the lovely and enchanting country, until at length we reached a habitation of savage men of a



low type of organisation. They might be compared with the savages of modern times. Their appearance was grotesque though fierce and cruel. They were gregarious creatures, living together in huts ; and my friend informed me that they were nomadic, and travelled from place to place as inclination led them. They cultivated the land in a rough way, the seed being scattered broadcast. They lived, however, for the most part on nuts, fruits, vegetables, and on small animals.

It was a great day : the accession of a new chief was being celebrated. A large fire was to be seen in the distance, and having approached sufficiently near, we perceived that they were heaping sticks on the flames for the purpose of sacrificing one hundred of their children to one of their former kings whom they honoured as a deity. In the meantime they were dancing around it with fearful cries and savage glee.

We were horrified at this dreadful sight, and expostulated with them ; but all to no purpose. They treated us with contempt, taunting us with our inferiority. Disgusted with their cruelty

and heartily sorry that our efforts had been so fruitless, we resolved, at any rate, not to be eye-witnesses of the impending massacre.

“Is there,” I asked my friend, “anything analogous to such wanton cruelty to be observed among *your* people?”

“Nothing half so bad!” was his reply; “such loathsome spectacles are peculiar to the conceited creatures who, forsooth! look down upon and despise us.”

It was now night, the sky was clear, and the moon and stars shed their brilliant light over the beautiful country. I thought how ignorant and cruel these savages were. Would it ever be my lot to see perfect creatures? Was perfection possible?

My friend interrupted my train of thoughts by remarking that there were very many different tribes of human beings, some more, some less advanced, while others had retrograded. “For instance,” continued he, “you see in the distance that spire which raises its lofty head over the tops of yonder trees. The noble tower of which it is a part is all that remains of a magnificent building, where formerly the

affairs of a once far-famed nation were transacted. Long since that time, however, have the inhabitants of that fallen city been undergoing a process of gradual decay, and now they are little better than the savages we have just seen. These people were at one time a very powerful and highly cultured race; but they have for centuries past been losing their hold on civilization. Here and there you will observe the ruins of ancient custom houses, and noble porphyry pillars are strewn in fragments which serve only to remind us of past grandeur."

Proceeding in the direction of the tower, as he spoke, we at length arrived at the outskirts of this once famous city. Crossing over its grass-grown streets, owls affrighted and disturbed flew screeching by us, and bats suspended from the crumbling roofs of ruined mansions, aroused from deep slumber, with shrill shriek flew terror-stricken by us on leathern wing.

Though desolate, majesty still lingered in this noble spot where the effacing fingers of decay were so visible. A tiny stream, which oft with lofty bounds ere this had overwhelmed

the crumbling bridges which no longer over-span it, ran sparkling in lowly channel through its midst. Along the banks of this rippling stream there lay some boats, no longer used, for the water was not deep enough to bear them. The remains of some larger craft were also to be seen. On all sides ruin was depicted. It was indeed a spot of chilling melancholy.

The forlorn inhabitants, men indeed, who still remained in this well-nigh forsaken spot, were busily engaged in pursuing the ordinary avocations of their daily life. Some were vainly attempting to patch up those leaning walls; while others sat mutely looking on, as though their work, not yet begun, were accomplished and their toils ended. These men were peevish, selfish, oft quarrelling; and they were so infirm withal, that it could only be wondered how it was they had not fallen a ready prey to the neighbouring tribes always ready to attack them. They had, however, the power of causing great explosions with a greasy yellow substance, and of producing differently coloured flames; so that terror seized the savage hordes

when on the point of attacking them, for superstition held undisputed sway over the minds of the neighbouring races. The ruins which on every side met the gaze brought forcibly these lines of Spenser into my mind:—

“Where her high steeples whilom used to stand,  
 On which the lordly falcon wont to tower,  
 There now is but a heap of lime and sand  
 For the screech owl to build her baneful bower.”

Turning away from these scenes of past glory, my friend informed me that he should be compelled to return to his home. Sorrowfully bidding me adieu, and expressing a hope that we should meet again, he went on his way singing,—

“Labour with what zeal we may,  
 Something still remains undone,  
 Something uncompleted still  
 Waits the rising of the sun.”

It was now late in the evening, and fearing lest I might lose my way in the darkness, I journeyed along as fast as possible, when, to my surprise, I found that I had assumed the

form of a man, and was standing at the gates of a city, not like the last in decay, but newly built and of rare magnificence.

I entered, and passing along the noble streets, conceived the notion of examining the interior of a lofty mansion, in the hope that I might find something to interest me. But as I walked rapidly along the corridor, I heard a gentle voice behind me say,—

“Pray, my friend, though you are unknown to me, come in here and partake of refreshment. You have, doubtless, travelled from afar. It gives me wonder great as my content to see you here, for we are always glad to welcome strangers from distant lands.”

Thanking my courteous host, I informed him that I was journeying far and wide in search of information, and had no friends in this city.

“I will gladly be your guardian and protector,” quoth my new friend, “and show you the wonders of this our noble city. We are, you must know, a very highly cultured race; in fact, we think that we have almost reached the highest stage of perfection.

You have, doubtless, heard of some of the ancient races, perhaps the English and Germans, possibly also of races still older, the very remote Greeks and Romans. These nations were in times past great. They had much intellectual capacity and a fair share of physical strength. We, however, have made considerable advances, and though you perceive that our skulls and muscles are not characterized by great size, yet our nervous energy, as well as our physical strength, has reached a much higher degree of perfection. Though some among us are better than the rest, and degrees of beauty and excellence may be noted, yet none of us are abjectly vile. Crime and idiocy are unknown among us: we have neither prisons nor asylums. Those of us who excel do not excite the envy or jealousy of the rest. And we are even accustomed to pay our tailors and return borrowed umbrellas."

He further informed me that this high degree of development of his race was in some measure due to their perfect sanitation. The diseases which raged so fiercely in past ages were now unknown among his race. Again,

they seldom made wars, for they indeed were so powerful, that no nation dared to attack them.

I asked him if they had telephones, steam-boats, railways ; and he laughed as he replied that they had little need of such appliances, inasmuch as they had the power of flying over land and sea with perfect ease and great celerity, and could thus commune with one another at great distances. I inquired also if he thought that any race of people who lived in the past could be compared with his nation.

“Certainly not,” he replied ; “for though there are evidences of past grandeur among the ancient races, as also of some accurate knowledge of natural phenomena, yet there are no traces of power to be compared with ours.”

He also told me there were no paupers in the land, for labour was so evenly distributed, that in three hours' daily work every one had earned sufficient for his needs, and spent the rest of the day in physical and intellectual enjoyment.

“Moreover we are a people of the highest morality, our motto is—



‘Though gay as mirth, as anxious thought sedate,  
As elegance polite, as power elate,  
As reason and as justice clear,  
Soft as compassion, yet as truth severe.’

“In all our dealings we are moderate and there can be no doubt that moderation in all things is the great cause of longevity, not only of individuals, but also of nations. How true are those lines of Sir Philip Sydney, a most noble man, who lived in times long gone by!—

“The ingredients of health and long life are :  
Great temperance, open air,  
Easy labour, little care.”

“You will note in reviewing the past history of nations, that there has always been a dangerous tendency to run to extremes. Take for instance the question of education. At one time there was such an unfortunate tendency to be extreme on this point, and competitive examinations became so severe, that their own ends were totally defeated by those of the advanced school of opinion on this subject.

“Again, the universal experience of men went to prove that alcohol was a poison, though of great value as a potent stimu-

lant medicine. In past times it was abused to a fearful extent. Instead of being dispensed at the chemists' shops, it was sold by ignorant men at every street corner throughout the land, and thus incalculable mischief was done. It is difficult to imagine how it was that the great men who guided the fortunes of vast empires, were unable to prevent for so long a time the sale of this detrimental poison to those who were unacquainted with its properties. Had men been unaware of its harmful effects, we could understand the reckless folly of those who so wilfully indulged in it.

“Intemperance led to poverty, poverty to increasing prevalence of crime, crime to the degradation and downfall of nations. Very few, in short, are the nations of the past whose disastrous ruin has not been directly traceable to intemperance of some kind or other. For extremes, though contrary, have like effects. Extreme heat mortifies like extreme cold. Extreme love breeds satiety, as well as extreme hatred; and an extreme rigour is as great a temptation to unchastity as too much license. But,” continued my friend, “let us after this

lengthy discourse, retire into the gardens and take a journey in my new balloon."

"Nothing will give me greater pleasure," answered I.

Accordingly, having seated ourselves in the balloon, my companion loosened the strings, and we were soon whizzing through the air at a great speed. As we rose higher and higher, I leant forward too eagerly, and, unfortunately losing my balance, was soon falling, falling through space. And as I fell, I saw in the far-off distance, the fairy Chance, no longer full of joy and hope, but alone, deserted, with confusion depicted on her now despairing face:—

"Like some bold in a trance,  
Beholding all her own mischance,  
Mute, with a glassy countenance."

And as I watched her, powerless and dejected, she gradually vanished, a shallow mimicry of almighty power. And now I beheld Faith, with her white sail furled, and then Charity, and then "young Hope, who still directs his eye to some blue spot just breaking in the sky;" and then I heard a deafening sound, as of rumbling

thunder from the rending clouds, and startled from deep sleep, arose to realize how the full "radiance of truth" had been manifested to me in my wonderful journey.





CONCLUSION.

“ 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.’

\* \* \* \* \*

No longer half-akin to brute,  
For all we thought and loved and did,  
And hoped, and suffered, 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.”

*Tennyson : “ In Memoriam.”*



## CONCLUSION.

IT may be hoped that a perusal of the foregoing chapters will in some degree check a tendency, unfortunately becoming now somewhat widely spread, to regard the Evolution Theory as a final explanation of the origin of the universe. There will be found in them many arguments which show that even though the doctrine of evolution in a full or in a limited degree be proved to be in accordance with natural phenomena, still it can only be accepted as the method of procedure of an Almighty Designer, to whose power and wisdom no limits can be ascribed. From a consideration of such views resulted the idea set forth in these pages, and it has been attempted to illustrate the



subject in as interesting a manner as its intricacy will allow.

To maintain that evolution affords any real explanation of the difficult problems of life, and of the origin of all we see around us, is altogether untenable. And even if we admit that processes of evolution are going on and have occurred throughout the history of the world, other conditions, as we have repeatedly endeavoured to prove, must be recognised. The theory, indeed, implies little more than a growth which is gradual in character, and it is obvious that this leads to the question, "What causes this growth?"

Evolution itself is but an abstract idea. It is a process indeed, but only as indicating a personal Being who set it in motion. "And why," we ask, "do some men find it difficult to believe in the personality of the great Architect of the universe?" Simply because their idea of personality is confined to their own experience, *i.e.* to their human personality as enveloped in a fleshly body. But the personality of a mysterious and unfathomable Almighty Being is *a fortiori* a personality.

Even from the analogy of natural life, we find that the higher we ascend in the scale, the more distinctly does the idea of personality stand out in bold relief.

The agnostics and atheists maintain that it is impossible to suppose that an Almighty Power has been at work, because we are unable to conceive how such a Power arose.

Do they imagine that supposing we were capable of producing in our laboratories living protoplasm, the newly-made organism would be able to criticise this act of transformation? Do they hold that any of the lower animals can fully appreciate our motives or appraise the value of our deeds? This power of criticising would imply equality between them and us. Surely, then, perfection would be necessary in order to understand perfection.

Can we imagine for an instant that the wonderful perfection and accuracy even in the minutest details could have been secured by evolution alone, by a slowly progressive advance from primitive atoms, which we are directed to look upon as uncaused or unknown, or produced by chance in illimitable space?

At *every* step the same difficulty presents itself. How is the initiation of new structures, of functions previously not existing, to be explained, for it is clear that in the first stages of their development they could serve no obvious purpose? Could evolution alone have resulted in the creation of man, the depositary and guardian of truth, who holds a rank so far ahead of every other creature? And should we expect to find societies of insects so perfect that we all can but marvel at, though we may not be able to explain, the wondrous intricacy of their ways? Are all the remarkable processes we see around us to be regarded merely as one interminable system of gradual incessant though possibly slowly perfecting changes?

Is this all? Can it be true that we are little better than mere machines? Then pure utilitarianism is the only true system of philosophy, and mere selfishness will win the day. This cannot be.

Let the atheist, if he can, as a ship without rudder in the midst of the boundless expanse of the ocean, grope his weary way through this world's dark labyrinth of dogmatism and obscurity.

“Atheist, use thine eyes,  
And having viewed the order of the skies,  
Think, if thou cans't, that matter blindly hurled,  
Without a guide, should frame the wondrous world.”

—*Creech.*

Let the agnostic persuade others and himself, if he can, that he is content to consider himself justified by an assertion of ignorance. We will look for higher ideas. We will advance some steps further up the ladder of knowledge and faith; we will leap the chasm which separates our ignorance and littleness from a region of Infinite Glory beyond.

The disciples of Haeckel say that theism is absurd, and all religions dogmatic and misleading. What can be more so than atheism? we reply, what can be more misleading, or attended with such disastrous consequences?

“All are but parts of one stupendous whole,  
Whose body Nature is, and God the soul.”

—*Pope: “Essay on Man.”*

The atheists and agnostics are like men who having started forth on a journey, at the very outset delude themselves with the idea that

their mission is accomplished, their proposed task completed. "I don't know!" "There is no God!" Surely both are old as the hills, equally absurd,—in the highest degree unsatisfactory.

It so happens that many persons of strong religious feelings and tendencies take fright at what they regard as the probable results of scientific culture. Their cry is—"Educate your people to a high pitch, teach them science, fill them with a passionate desire to look thoroughly into the depths of nature's mysteries, and you will ruin them, by leading them to suppose they are independent of God." "Educate the people and teach them science, *but teach it thoroughly,*" we rejoin, "and you will thereby unfold to their longing minds the wonderful works of God, and thus lead them to adore Him who is the Author and Upholder of all things."

Bacon says in his "Meditationes Sacræ": "This I dare affirm in knowledge of nature, that a little natural philosophy, and the first entrance into it, doth dispose the opinion to atheism; but on the other side, much natural philosophy,

and wading deep into it, will bring about men's minds to religion." And Pope expresses the same idea thus :

"A little learning is a dangerous thing,  
Drink deep or taste not the Pierian spring ;  
For shallow draughts intoxicate the brain,  
But drinking largely sobers us again."

He who trusts himself unequipped and with untutored mind to the mysterious revelations of science, cannot but flounder vainly in the deep waters till he sinks overwhelmed. But the diligent student of nature need fear no rude shock to his simple faith in God.

"To know one God, and know ourselves, is all  
We can true happiness or wisdom call."

Although it is clear that in this world we cannot be perfect, we are nevertheless commanded to aim at perfection. Were this life perfect, what need would there be for a future state ?

Time goes on, and life is short. We are here to-day, and to-morrow in the grave. Is there nothing in some future state to correspond with those voiceless aspirations, with the infi-

nite and passionate yearnings in the soul of man? Are not these feelings but shadows of something real in another world prepared to receive us? Is there not scope for eternal bliss, for an ever-increasing life of progress in the soul of man? Did a perfect God create us and place us here to toil, to suffer, and then to die the death of annihilation? No! a thousand times No! This view may satisfy those persons who look upon creation as the capricious and fantastic outcome of a mere chance. But the inner convictions, which will force themselves at times upon the mind, bear only too true a witness to a world of perfect glory beyond, where sickness, sorrow, and death shall be known no more; and where the fact that man was made in the image of God shall be recognised and proclaimed by all.

FINIS.









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