

THE VARIETY OF STRUCTURE IN PLANTS AND ANIMALS, CORRESPONDING TO THE VARIETY OF CLIMATE.*

"The organization of plants and animals is in different tribes formed upon schemes more or less different, but in all cases adjusted in a general way to the course and action of the elements. The differences are connected with the different habits and manners of living which belong to different species; and at any one place the various species, both of animals and plants, have a number of relations and mutual dependencies arising out of these differences. But, besides the differences of this kind, we find in the forms of organic life another set of differences, by which the animal and vegetable kingdom are fitted for the variety which exists in the climates of the earth.

"The existence of such differences is too obvious to require to be dwelt upon. The plants and animals which flourish and thrive in countries remote from each other, offer, to the eye of the traveller, a series of pictures, which even to an ignorant and unreflecting spectator, is full of a peculiar and fascinating interest, in consequence of the novelty and strangeness of the successive scenes.

"Those who describe the countries between the tropics, speak with admiration of the luxuriant profusion and rich variety of the vegetable productions of those regions. Vegetable life seems there far more vigorous and active, the circumstances under which it goes on far more favourable, than in our latitudes. Now, if we conceive an inhabitant of those regions, knowing, from the circumstances of the earth's form and motion, the differences of climate which must prevail upon it, to guess, from what he saw about him, the condition of other parts of the globe as to vegetable wealth, is it not likely that he would suppose, that the extratropical climates must be almost devoid of plants? We know that the ancients, living in the temperate zone, came to the conclusion that both the torrid and the frigid zones must be uninhabitable. In like manner, the equatorial reasoner would probably conceive, that vegetation must cease, or gradually die away, as he should proceed to places further and further removed from the genial influence of the sun. The mean temperature of his year being about 80 degrees, he would hardly suppose that any plants could subsist through a year, where the mean temperature was only 50, where the temperature of the summer quarter was only 64, and where the mean temperature of a whole quarter of the year was a very few degrees removed from that at which water becomes solid. He would suppose, that scarcely any tree, shrub, or flower, could exist in such a state of things, and, so far as the plants of his own country are concerned, he would judge rightly.

"But the countries further removed from the equator are not left thus unprovided. Instead of being scantily occupied by such of the tropical plants as could support a stunted and precarious life in ungenial climes, they are abundantly stocked with a multitude of vegetables which appear to be constructed expressly for them, inasmuch as these species can no more flourish at the equator than the equatorial species can in these temperate regions. And such new supplies, thus adapted to new conditions, recur perpetually as we advance towards the apparently frozen and untenable regions in the neighbourhood of the pole. Every zone has its peculiar vegetables; and while we miss some, we find others make their appearance, as if to replace those which are absent.

"If we look at the indigenous plants of Asia and Europe, we find such a succession as we have here spoken of. At the equator we find the natives of the Spice Islands, the clove and nutmeg trees, pepper, and mace. Cinnamon bushes clothe the surface of Ceylon; the odoriferous sandal wood, the ebony tree, the teak tree, the banyan, grow in the East Indies. In the same latitudes in Arabia the Happy we find balm, frankincense, myrrh, the coffee tree, and the tamarind. But in these countries, at least in the plains, the trees and shrubs which decorate our more northerly climates are wanting. And as we go northwards, at every step we change the vegetable group, both by addition and by subtraction. In the thickets to the west of the Caspian Sea, we have the apricot, citron, peach, walnut. In the same latitude in Spain, Sicily, and Italy, we find the dwarf palm, the cyprus, the chestnut, the cork tree: the orange and lemon tree perfume the air with their blossoms; the myrtle and pomegranate grow wild among the rocks. We cross the Alps, and we find the vegetation which belongs to northern Europe, of which England affords an instance. The oak, the beech, and the elm, are natives of Great Britain: the elm tree seen in Scotland, and in the north of England, is the wych elm. As we travel still farther to the north, the forests again change their character. In the northern provinces of the Russian empire are found forests of the various species of firs: the Scotch and spruce fir, and the larch. In the Orkney Islands no tree is found but the birch, which occurs again on the northern shores of the Baltic. As we proceed into colder regions, we still find species which appear to have been made for these

situations. The hoary or cold alder makes its appearance north of Stockholm: the sycamore and mountain ash accompany us to the head of the gulf of Bothnia: and as we leave this and traverse the Dophrian range, we pass in succession the boundary lines of the spruce fir, the Scotch fir, and those minute shrubs which botanists distinguish as the dwarf birch and the dwarf willow. Here, near to or within the arctic circle, we yet find wild flowers of great beauty; the mezerium, the yellow and white water lily, and the European globe flower. And when these fail us, the reindeer moss still makes the country habitable for animals and man.

"We have thus a variety in the laws of vegetable organization remarkably adapted to the variety of climates; and by this adaptation the globe is clothed with vegetation, and peopled with animals, from pole to pole, without such an adaptation, vegetable and animal life must have been confined almost, or entirely, to some narrow zone on the earth's surface. We conceive that we see here the evidence of a wise and benevolent intention, overcoming the varying difficulties, or employing the varying resources of the elements, with an inexhaustible fertility of contrivance, a constant tendency to diffuse life and well being."

SOLID AIR.—The philosophers of Paris, by the aid of tremendously powerful apparatus, have succeeded in the consolidation of carbonic acid gas, one of the constituents of atmospherick air, so as to be both visible and tangible. The substance, at a late sitting of the French Academy, was distributed to the company, tasted and handled—and the sensation produced by its touch is described as "the impression of extraordinary cold which a solid gas produces, when returning from a state of air." It is added that the company were much surprised at the slight effect resulting to the organs of sensation from contact with a substance, the touch of which congeals mercury and spirits of wine, and causes the thermometer to descend to ninety degrees below zero. To what is the world coming? If these French savans are suffered to go on with their experiments, and thus convert the very element we breathe into hailstones and icicles, they may next catch the most hidden thoughts of the brain, turn them into lumps of matter, and pass them about like cracked filberts at a royal levee!

NEW MEANS OF PRODUCING EXPLOSION.—A memoir has been presented to the French Academy of Sciences, the title of which we give, as translated in the *London Athenaeum*, for the amusement of our readers: "Memoir communicated to the Academy of Sciences, on an explosive mixture, which may be adapted by the government instead of gunpowder; the easy use and economical nature of which must lead to the happiest changes in the present system of fire-arms, produce economy on a vast scale, double our wealth, and create new titles to national glory." The secret of this wonderful discovery consists in the making of a hollow cylinder of some cotton material, and fine paper pasted on it, fixing a leaden bullet at one end, and filling the rest with an explosive gas, which shall contain one part of oxygen, and two of hydrogen, which is to be inflamed by bringing a stylus of platina in contact with it, and which retires when the pressure of the finger is removed. The mere statement of the above spares further comment.

CURIOUS.—A late Paris paper mentions that two poor fishermen found, while drawing the nets in the Seine near the Isle of Swans, a little wooden box, very neatly made and surrounded by plates of iron which were nearly destroyed by the rust. The box was in an excellent state of preservation, and hermetically sealed. On the outside were still to be seen some feeble traces of Fleurs de Lis, and the letters "M. de V." surmounted by a double royal coronet. The fishermen were delighted with their prize, and lost no time in breaking it open, expecting to find within a treasure of no ordinary value. But their surprise and horror may be conceived, when their eyes rested on a *human head*, embalmed and perfectly preserved! In the bottom of the box was a silken scarf, some withered flowers, and a poinard, the point of which was stained with blood. The box with its contents was purchased by one of the *Savans* of Paris—who is confident that it belonged to Marguerite de Valois, the Queen of Henry the IV. and the head is that of Coconas, which it is well known, she caused to be embalmed after the tragical death of that individual.

THE TONGUE OF THE DUCK.—When we consider the particular use which the duck makes of its tongue, we shall immediately perceive that it is endowed with great and unusual sensibility. The duck, unlike all other birds, discriminates its food, not by sight or by smell, but by the touch of its tongue. It thrusts its bill into the mud, just as a fisherman throws his net into the sea, and brings up whatever it contains; from this mouthful of stuff it selects, by the tongue alone, what is good for food, and everything else is rejected.

PRACTICAL CHRISTIANITY.—Is it not clear that christianity has been long and widely misapprehended? Is it not clear that, while our religion is held separate from our politics, separate from our literature, separate from our science, it no more puts forth its full power than if it were held separate from our daily actions and thoughts? If our religious teachers are right in telling our artizans that their faith should go with them into their workshops—as well to animate the hand as to control the spirit,—must also be right for our naturalists to carry theirs into the fields and along the caverned shore, for our scientific men to infuse theirs into their researches, and to let us preside over their experimental philosophy. The one may perchance find illustrations that he dreamed not of among the roosting birds, or the recovered treasures of the deep; and the other may be struck by relations they could not anticipate between truths which had appeared unconnected. There may be something in the silent motions of the firmament, or in the unvarying and multitudinous relations of number and quantity, or in the illimitable extent and mighty power of transmutation and affinity, which may suggest new and high thoughts of the administration of Providence, of the share which man has in them, and of the modes in which the most marvellous of its wonders, and the most precious of its promises have been and shall be fulfilled.—*Monthly Repository.*

A REMARKABLE BOY.—This reminds me of another case, in which a boy hanged himself, but was cut down in time. I was called to see the boy; he was a half-stupid, half-cunning, and wholly wicked looking boy, stunted in growth, apparently about sixteen years of age. The account given of him was, that he was desperately wicked—that a little before, he had attempted to drive the plough over one of the farmer's children, and they were greatly afraid of him. I talked to the boy—'What did he do it?'—'The devil had told him to do it.'—'What did he see him?'—'Very often.'—'What sort of a person was he?'—'Like a gentleman, with a bit of white hanging over his boot.' I then left the boy and went into the house to talk with his mother, who had arrived, and directed the doctor to be sent for. When I went out to see the boy again, a man who had walked to the farm with me, was making him repeat the Lord's prayer. The boy had just come to the words, 'Give us this day our daily bread.'—'Bread!' said the boy with stupid astonishment looking up in the gentleman's face; 'we don't ha no bread—mostly tatoes.' He did not make another attempt, but he turned out very ill—was near committing murder, and through fear of it, induced a poor girl to marry him. I fear it was a sad affair, and perhaps will end in one of the deep tragedies of the lower walks of life, of which there are more than the higher wot of. I had recollect this youth being once a scholar in our Sunday School, but he staid a very short time, and then shewed either wickedness or his ignorance, for to a question in catechism, he returned thanks 'for this state of starvation.' I took no notice of it; and he was, in truth, ragged and starved enough.—*Blackwood's Magazine.*

THE PEARL.

HALIFAX, SATURDAY, JULY 15, 1837.

LITERARY NOVELTY.—In the walks of literature the ladies of the United States are making rapid strides. They seem determined to disprove the notion of some of the lords of creation, that the intellect of woman is inferior to that of man. We have lately received the *Baltimore Monument* for June 17—a paper entire original, and *piece the composition of a lady*. It abounds with elegant prose and sweet poetry, and concludes with a piece of enchanting music by a lady. Nor is this all—for we are threatened with a similar paper in a few weeks, in which also the ladies are to occupy the editorial chair, 'doubting' as the present occupant says, 'but they will honour to themselves in their new capacity.' We confess we were not prepared for such practical demonstrations of the spirit and talent that is fast waking up among the female corps—the gents had better bestir themselves or they will soon be ranked amongst the dull and stupid of human kind.

Mrs. JONES AGAIN.—The *Christian Guardian* of Upper Canada contradicts the rumour which has floated concerning this singular lady. The editor who is a member of the Canadian Wesleyan Conference says:

"We have the pleasure, and such we truly esteem a somewhat intimate acquaintance with Mr. and Mrs. Jones, who since their matrimonial connection have resided in

*From Professor Whewell's *Bridgewater Treatise.*