

is prefigured in the disintegrating work of the worm; and human society in the earthworm rolling themselves together in a ball to keep alive through the winter. That, too, is providence. But when the human mind would go beyond recognition of its own tenderness distributed through nature to find these concentrated in an Ovipositor, it has the providence that seemed so beautiful in the earthworm seems to be so. We should respect the culture of the soil to be achieved by Ovipositors without such displays of agency. The sensitive agency of our worm justifies Emerson's assertion, "There's no god here wrong a worm,"—the peacably being that a power which achieves by pain what it might achieve without, it must cease to be worshipped when it ceases to be feared. Thompson treats

"That such a worm is divine in rate,
That such a worm with rain rains
is attributed to a Fortune fate,
In the low measure another's pain."

That is a divine voice, filled with a pity that nature largely lacks, and though it may stick into agriculture as it can never be killed in living practice of a power less compassionate than itself. Therefore it is that every religion is a pilgrimage from a covering worship of omnipotence to the apotheosis of the victims,—from Brahmin to Vishnu, from Zeus to Prometheus, from Jehovah to Jesus. And all these do but dramatize love. It may be that in the great future of human development, some virtue may be attained of a divine life in nature as little dreamed of now even by a Darwin as the worm writhing in his hard dream of his true heart. The present mind can afford to walk without dramatic reverence, but it cannot say it sees the divine it sees not, nor stay long by him who tells the humanly. Its religion is the love of Love, an uncomplaining calm resistance to all that is opposed to love, and a joy in all those adaptations in nature which illustrate the steady transmutation of inorganic nature (including the disorganizing function and passion in which it survives) into the image of that divine principle which links the rolling worm with the suffering soulless of the world.

Darwin shows how earthworms have possessed ancient history, old monuments, the records of man's earliest history and the materials of science. I was lately talking with some scientific men in a beautiful village of Wiltshire. Near its workmen was conversing an ancient barrow, belonging from it the same and across of prehistoric warlike. Near as a generalized, spread by earthworms over a British village, revealed its form in withdrawal for the inspection of science. Among the company was Sir John Lubbock who has so long vainly tried to persuade legislators in Parliament to give ancient monuments a protection now chiefly secured by the worms. These relics are in the region of the famous "Cromwell Chase." The hunting seat of King John is there, and many ancient hunting lodges. There were some twenty thousand feet in this Chase, and for centuries the first gentleman of England, always an inveterate man, did nothing but hunt there. Not a barrow was uncovered, not a monument exhibited, nor historic spots, Roman camps, British villages, they hunted and they hunted. All the "pre-historic" men of the worms was wanted on them from remote antiquity up to last year when all that land became the inheritance of the President of the Anthropological Society. Thus the work of the worms was realized. The monuments they have preserved are now coming forth, and the little creature is as linked with the advanced thought of the world.

Science must man to school to the end that he might leave enterprise. He might equally have

business learn from the worm that gnawed his staff the greatness of the least when its work is organic. In its end it works, an earthworm, unambitious to be a hero-worm. Perfect satisfaction to what it is organized to do enables this creature of its existence to change the face of the earth. It must soil women only spins and did what is equally expeditious of their very structure! What then would become of all this that people call their "religion"? What are those dogmas, rites, ceremonies, in Europe and America? Do they come out of the heart and brain of the living man? Are they expressions of the sentiment, commensurate, and reason of our age? Assuredly they are the relics of dead brains, Egyptian, Syrian, and other. Earthworms have long ago converted the cerebral organ that so thought, the life and hands that so spoke or wrote, into mould, and so passed them on to new organization for new work. But they cannot claim to be even better-movers of those faithful organisms who, finding their dead dogmas and rites transmute them not at all, but place those spiritual signs as ornaments and charms, even amid the electric lights of their physical civilization.

There is, indeed, one aspect in which the earthworm is but a low faithful type of the superstitious which attend the organic work of the human brain and heart. And here again we may remember pregnant words of the thinker who, least of all in his generation, suffered such scorn:—

"A man's chain of thought lies
The next time the carbon brings
and, serving to be man, the worm
Rings through at the apex of form."

These lines of Emerson, anticipating Darwin's great generalization, suggest the end of evolution. The worm mounting through the sphere of form may continue through those last limits which, however useful in a worm, are deplorable in a man. (Alas, that fact was known to Ptolemy and Aristotle, who detected the abysses of an animal and variety of another beneath the mask of man!) The worm is a fair type of that adherence to old conditions by such force of custom, which is the chief obstruction to human development. Though the conditions of nature have changed again and again, the worm goes on burrowing and eating the dust all its days. So did its ancestor. And what other reason have half mankind for what they say and do? Why are antiquated papers and books repented? Why are foolish oracles feared, and old customs and the logic of the world? For because they are really believed, were they really believed, selection of their kind would be impossible; every freethinker would be executed as a destroyer of more than life and property. It is the wormation, burrowing in graves, though a new heaven and earth offer it their banquet.

It must be admitted that this persistence of vague based on discarded beliefs serves a life utility with that of the worm, which preserves monuments. The advance of mythology and folklore values the myths and fables transmitted by the credulity of one generation to the parent tongue of the next. But it is too costly a price to pay for the fables that their transmission makes man a new burden pile. At any rate, we need such antiquated mythologies no more. Art and science now secure all the arrivals they require without their being deposited in the place of brain. It is time for that dogma to do which nature man a child of the worm, and his religion a prolonged meditation in the grave. It is time for man to enter on his progressive side, and march through all the sphere of thought, building his spirit's mansion not beneath the earth, but upon it.

The President of the Victorian Society, Mr. James W. Watson, with Contributions by Mrs. Mason, by Charles Darwin, L.L.D., F.R.S., London; John Murray, Albemarle Street, 1887.

That book contains much that is useful and interesting. Though it has only recently been published, the subject of which it seems to me new as the Darwinian theory, the book is still to be read before the Darwinian theory of London's short paper on the formation of fossils. Mr. Darwin's views on this, as on other matters, were not at first readily adopted. A French naturalist, I suppose, did not accept his conclusions. He is distinguished in these words:—"M. de Buffon's theory is based upon former conclusions, and not from observation." Mr. Piazzi, in the Darwinian's Chronicle, also ventured to remark the conclusions at which our author had arrived with respect to the part worms play in the formation of vegetable mould, as a result of their supposed propensity to do it. He says:—"On this Mr. Darwin's conclusions are not so well founded." He says:—"It is not so much an instance of God, inability to see up to the effects of a continually renewed cause, which has often retarded the progress of science, as formerly in the case of astrology, and more recently in that of the principle of evolution." Mr. Darwin is unable to see many interesting facts respecting the habits of his burrowing, the worms. They are not omniscient; they do not possess eyes, but can distinguish between light and darkness; they are completely deaf, are sensitive to heat and cold, and also to vibration and touch. They possess acute powers of smell, by means of which they detect cadaverous and other odors, and the ability with which they eat insects, earth, and various has been repeatedly tested. They are omnivorous. They are omniscient, for they eat their dearest brethren. They prefer food to prefer meat; they generally devour fat. By a peculiar sense olfactory, sensitive to those odors which are not visible, they perfectly digest their food before it is taken into the alimentary canal. Their digestive fluid resembles in its action the pancreatic secretion of the higher animals. They breathe by means of their skin, and do not possess any special respiratory organs. They are blind. The sensitive olfactory sense to those odors which are not visible, which is believed to be expressed by their omnivorous. Judging by their response to certain kinds of food, they must enjoy the pleasure of eating. They possess a kind of vocal feeling, for they are not disturbed by crawling over each other's bodies, and they continue to work for months if they are covered of from one month to a little more than one month of an inch, and these are frequently found in their galleries. It is probable they serve like will-worms to utilize their food. Worms exposed to the dry air of a room for a single night will not survive. On the other hand, they have been known to live for many months if submerged in water in summer. They frequently, during the heat of the day, lie near the surface of the earth for warmth. They are known completely to close their burrows during the winter, and they seal the mouths of their burrows with loam to prevent their bodies coming in close contact with the frozen earth. The vehicles used for plugging the burrows are of the most miscellaneous description, such as leaves, decayed strips of moss, bits of paper, lichen, bits of wood, and horse hair. When they cannot obtain such articles with which to plug up the mouths of their burrows, they often prefer them by means of their own mud, which they extrude through a pit-hole may frequently be seen on grass walls. A lady, who was interested in the habits of worms, covered the little layer of earth from the mouth of several burrows, and cleared the surface of the ground for some inches all round. She went out in the following night with a lantern, and saw the worms which they had found in their burrows, dragging the earth towards by the aid of their mouths, so dense by mouth. After two nights some of the holes had 3 or 4 small stones over them; after five nights, one had about 20, and another 34 stones. One stone, which had been dropped over the ground within the mouth of a burrow, which they had come to and they drove him in among worms etc. But they show greater strength in something displacing stones in a well defined direction, that they do so, may be inferred from the ground left by the displaced stone being exactly filled by those lying over the mouths of adjoining burrows," as Mr Darwin states he has himself observed. The substance the way in which leaves and other articles are seized and dragged to the burrows, shows a wonderful amount of intelligence on the part of worms. Mr. Rousseau, who has especially studied the habits of animals, believes that we can easily infer intelligence, only when we see an individual exhibiting signs of consciousness. "Man," Mr. Darwin says, "if worms try to drag things into their burrows that in one way and then in another, until they at last succeed, they profit, at least in each particular instance, by experience." That they do so has been proved by observation. Burrows are formed in two ways, namely, by pushing the earth away on sides, and by collecting it. In the latter case all particles matter is withdrawn, and the rest is