

stooping down lifted the basket to a position between our knees. He gazed meditatively at his treasures a moment, then fetching a sigh of satisfaction he remarked, "yes a fine collection, a fine collection." And taking up a phial he handed it and the microscope to me saying as he did so, "look." Putting a drop from the phial in the microscope and adjusting it, I beheld the water swarming with the most varied forms of life imaginable, swimming singly or in schools, and carefully avoiding each other when they met. Removing the microscope after a lengthened survey of this aggregation of life, I turned to my companion and encountered the interrogation, well what! I recounted the several most remarkable species of animalcula, the most numerous being the colpoda cuculis. Did you notice no other than these? Yes a great number of monad-like organisms, having two cilia, one of which it used for propulsion, while the other seemed to serve the purpose of a tail to a kite, What do you think they are? The young of the colpoda probably. "No," said he, smiting his hands together exultingly, "that's Huxley's protegee Heteromita Lens," and he looked at me with beaming eyes. You see, he continued, this monad was discovered associated with the colpoda in an infusion of hay, by Tyndall, who sent it to Huxley to examine, and I am the only one who has ever discovered it in pools of water.

The difference as you know between the heteromita and colpoda, is in their manner of alimentation, for colpoda may be fed like chickens since they devour organic substances, but the heteromita takes no solid food. I tell you that phial's a treasure, a treasure sir. I was not disposed to attempt to convince him of the impossibility of his conclusion, for I feared to anger him or at least disturb his self satisfied frame of mind; but since no one else had ever discovered a heteromita in such circumstances, I mentally resolved not to accept it. So I merely inquired, "what do you believe to be the basis of separation between plants and animals?" Alimentation, said he, emphatically, there is no other (though some try to disprove that); plants not only have brain power and sensation, but they actually see. See!! I ejaculated. Yes see, he answered. Let me give you an example. One day last week my friend Wheatstone was sitting on his verandah reading;

happening to glance down he saw one of the tendrils of the vined covering the lattice, slowly bend over and grasp his foot; surprised at so strange a procedure on the part of the plant he gently removed the tendril, placing his foot at some distance; after the tendril had returned to its former position, Wheatstone replaced his foot, when the same performance was immediately repeated. Finally he removed his foot entirely, and the tendril then stretched out towards the lattice, but failing to reach that, it after a few uncertain or deprecatory movements subsided to a state of rest. Now how do you explain that. I could only reply by shaking my head, and he continued, "you are aware that Aristotle's distinction, Animals feel—plants do not, was the ultimatum of biology until the time of Cuvier. Today the edifices they both erected are in the dust, only vacant sites remaining, upon which no one has builded.

The Dionaea Muscipula makes Aristotle's distinction rubbish: for if a fly alights upon its leaf, or the slender filaments growing out of its lobes be touched by the finest hair, the leaf closes instantly: is not that like a snail's shrinking into its shell when its antennæ are touched? Or does it differ much from the closing of a sleeping child's hand upon some object placed within it? How do you, said I, account for this action on the part of the Dionaea and other so-called sensitive plants? Only by the presence of nerves, and the microscope has shown that all plants possess a network of finely divided protoplasmic fibres, the same material as animal nerve permeating their whole structure, and besides the substance of the Dionaea exhibits the same electrical changes after contraction as animal tissue.

Here a long pause ensued, my companion burying himself in deep meditation. Indeed a train of thought had been started in my own mind, and well known facts appeared in new light. Finally I began: surely of all Cuvier's distinction some remain. Not one he answered, his first that animals alone have an alimentary cavity is contradicted by the pitcher plant's structure and habits. His second that only animals possess a circulatory system is no longer tenable, for every one knows that though the plants' circulatory system is simple, yet it is most perfect. His third and fourth that all plants inhale carbon dioxide and exhale oxygen, and that only animal