

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in  
the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

THE  
HISTORY, HABITS, AND INSTINCTS  
OF ANIMALS.

---

## CHAPTER XIII.

*Functions and Instincts. Cirripedes and  
Crinoideans.*

## CIRRIPEDES.

THERE is a class of animals defended by multi-valve shells, separated from the Molluscans not only by the more complex structure of their shells, but also by very material differences in the organization of the creatures that inhabit them. These Linné considered as forming a single genus, which he named *Lepas*, a word derived from the Greek lexicographers, and explained by Hesychius as meaning a kind of shell-fish that adheres to the rocks. In this country these animals are known by the general name of *Barnacles*. Lamarck, I believe, was the first who regarded them as entitled to the

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

## 2

## FUNCTIONS AND INSTINCTS.

rank of a class, which he denominated *Cirrh-hipeda*, not conscious, that by the insertion of the aspirate, he made his term, like *Monoculus*, half Greek and half Latin: later writers who have adopted the class, to avoid this barbarism, have changed the term to *Cirrhopoda*, but as this gives a different meaning to the word, changing *fringed* or *tendril-legs*,<sup>1</sup> very happily expressing the most striking character of the animals intended, into *yellow-legs*,<sup>2</sup> which does not indicate any prominent feature, I shall, after Dr. Leach and Mr. W. S. Mac Leay, omitting the aspirate, call them *Cirripeda*, or Cirripedes.

These animals have a soft body, protected by a multivalve shell. They are without eyes, or any distinct head; have no powers of locomotion, but are fixed to various substances. Their body, which has no articulations, is enveloped in a kind of mantle, and has numerous tentacular arms, consisting of many joints, fringed on each side, and issuing by pairs from jointed pedicles: their mouth is armed with transverse toothed jaws in pairs, which, like the mandibles of the Crustaceans, are furnished with a feeler; they have a knotty longitudinal spinal chord; gills for respiration; and for circulation, a heart and vascular system.

<sup>1</sup> Lat. *Cirri*.<sup>2</sup> Gr. κίρρος.

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

## CIRRIPEDES.

3

This class is divided into two Orders.

1. The *first* consists of the *Lepadites*, or Goose-barnacles,<sup>1</sup> the species of which are distinguished by a tendinous, contractile, and often long tube, fixed by its base to some solid marine substance, supporting a compressed shell, consisting of valves united to each other by membrane, and by having six pairs of tentacular arms. They are usually found in places exposed to the fluctuations of the waves. One genus<sup>2</sup> appears to perforate rocks to form a habitation. These animals roll up and unroll their arms with great velocity, thus creating a little whirlpool, that brings to their mouth an abundant supply of animalcules, an action which Poli compares to fishermen casting a net. Some species, instead of shell, are covered by a membranous sac, having occasionally very minute shelly valves.<sup>3</sup>

2. The *second* Order of Cirripedes consists of the *Balanites*, or Acorn-barnacles, which are distinguished from the *Lepadites* by a shelly, instead of a tendinous tube, the mouth of which is closed by an operculum, usually consisting of four valves. The animals of this Order are commonly regarded as sessile; but, if Lamarck is right in considering the valves of the shell of the *Lepadites* as analogous to the operculum of

<sup>1</sup> *Anatifa. Pentelasmis, &c.*

<sup>2</sup> *Lithotrya.*

<sup>3</sup> *Anatifa coriacea et leporina.*

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

the Balanites, as it seems to be, and their tendinous tube as really a part of the body of the animal—as its being organized, living, and muscular, seems to prove—then it must be analogous to the shelly tube of the latter, and both must be considered as elevated by a footstalk. This tube, in the Balanites, consists usually of six pieces, soldered, as it were, together; and in several species, as in the common sea-acorn,<sup>1</sup> of a triangular shape, and having their acute angle alternately at the base and at the mouth of the tube. The base of the tube generally takes the form of the bodies upon which it is fixed, and is sometimes composed of shell, sometimes of membrane, and sometimes it is incomplete. The animal, in this Order, has twenty-four tentacular arms, shorter than those of the Lepadites, consisting of two sorts, namely, six pairs of large similar ones, but unequal in size, placed above; and as many smaller pairs, dissimilar and unequal, and placed below. One pair of these is much larger than the others. In the water they keep these tentacles<sup>2</sup> in perpetual motion, and thus arrest, or, by producing a current to their mouth, absorb the animalcules, which constitute their food. They not only fix

<sup>1</sup> *Balanus Tintinnabulum*.

<sup>2</sup> These organs, though called tentacles, from their use, seem rather analogous to the *antenna* and other *jointed* organs of *Condylopes*.

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

## CIRRIPEDES.

5

themselves upon inanimate substances, such as rocks, stones, the hulls of ships, &c. but also upon various marine animals and plants. Thus some are found on Zoophytes, as sponges and madrepores; others attached closely to each other on shell-fish, especially bivalves, so closely that the point of a pin cannot be thrust between them. One species takes its station on the shell of the turtle;<sup>1</sup> others plant themselves in the flesh of the seal; and others bury their tube in the unctuous blubber of the whale.

If we compare the animals of the above Orders with each other, we shall find that they are fitted by their Creator to collect their food in different ways. The *Lepadites*, by means of their long contractile flexible tube, can rise or sink, and bend themselves in different directions, so as, in some sort, to pursue their prey; their tentacles, also, from their greater length, seem to further this end: these, according to Poli's metaphor above alluded to, they can throw out and draw in laden with fry, as a fisherman does his net. When their prey is in their mouth, it is subjected to the action of their toothed jaws, which seem more numerous and powerful than those of the *Balanites*; and as the valves forming the shell are more numerous and connected by membrane, and the whole shell more compressed than the operculum of the last named animals, we may

<sup>1</sup> *Coronula testudinaria*.

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

## 6

## FUNCTIONS AND INSTINCTS.

suppose that they are capable of a more varied action, and one that may perhaps add to the momentum of the masticating organs. Hence we may conjecture that the animals destined to form their nutriment, may be larger, so as to require more exertion and force, both to take and to masticate.

In the other Order, the structure of the *Balanites* seems to indicate merely the protrusion and employment of their tentacles; and being usually attached to floating bodies, such as the hulls of ships, or parasitic upon locomotive animals, riding as they do upon the back of the turtle, the dolphin, and the whale, they may visit various seas in security, and feast all the while, with little trouble and exertion, upon animalcules of every description, the produce of arctic, temperate, and tropical seas.

With respect to their place in nature, it seems not quite clear whether they should be regarded as leading from the Molluscans, with which Cuvier arranges them, towards the Crustaceans, and they certainly seem to have organs borrowed from both; their shells and mantle in some degree from one, and their palpigerous mandibles and jointed organs, proceeding in pairs from a common footstalk—like the interior antennæ of the lobster—and knotty spinal chord from the other: but with respect to their jointed organs, I must observe that they still more

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

## CIRRIPEDES.

7

closely resemble those of some of the Encrinetes,<sup>1</sup> like them being fringed on each side, though not with organs of that description. A learned naturalist, Mr. W. S. Mac Leay, is of opinion that the Echinidans, or sea urchins, exhibit some approximation to the Balanites.<sup>2</sup> If, indeed, we compare the genus *Coronula* with an *Echinus*, we shall discover several points in which their structure agrees. We learn from Lamarck, that the pieces of the so called operculum, which close the mouth of the former shell, are affixed rather to the animal than to the shell. Thus the operculum, in some sort, represents the jaws of an Echinus, though consisting of fewer pieces, and the tube appears divided into alleys, like the crust of that animal. These circumstances seem to prove some affinity between the Cirripedes and Radiaries; they appear also to have some points in common with Savigny's Nerëideans, especially *Amphitrite*.<sup>3</sup> Weighing all these circumstances, I have thought it best to place the Cirripedes immediately before the Entomostracan Crustaceans.

But what if these Cirripedes should at last prove to be, not the guides to the great Crustacean host, but its legitimate progeny? This has been asserted, at least partially, by a modern zoologist, who has assigned his reasons for this

<sup>1</sup> See PLATE III. B. FIG. 1.

<sup>2</sup> *Hor. Ent.* i. 312.

<sup>3</sup> *Ibid.*

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

singular and startling opinion. I will not say the thing is impossible—for with God all things are possible—but it certainly appears in the highest degree improbable. That a *Zoea* should become a crab is sufficiently extraordinary, and an opinion, as Latreille remarks, which, if it be not erroneous, has great need of support from experiment:<sup>1</sup> but that a locomotive animal, gifted with eyes and legs, should, by an extraordinary metamorphosis, in its perfect state, become a barnacle, without head, eyes, or locomotive organs, can never be admitted till confirmed by repeated experiments of the most able and practised zoologists, so as to place the matter beyond dispute. I by no means, however, mean to assert that Mr. Thompson did not think he saw what he has stated, in both cases, to take place, but he was probably deceived by appearances in some such way as he states Slabber to have been.<sup>2</sup>

A single fact, observed by Poli, is sufficient to overturn this whole hypothesis. This illustrious conchologist relates that he had an opportunity of examining the immense fecundity of the sessile barnacles. “In the beginning of June he found innumerable aggregations of them, covering certain boats that had been long stationary, which, when closely examined, were so

<sup>1</sup> *Cours D'Entomologie*, i. 385.

<sup>2</sup> *Zool. Research*. No. i. 7.



Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

## CIRRIPEDES.

9

minute, that single shells were not bigger than the point of a needle ; and that from that time they grew very rapidly, and arrived at their full size in October." These very minute ones must have been hatched from the egg, and not produced from larvae.

With regard to the functions and instincts of these Cirripedes, very little has been observed. We see from the above account of them, that, like many other animals amongst the lowest grades of the animal kingdom, they are furnished with particular organs adapted to the capture of animalcules and other minor inhabitants of the deep, which they help to keep within due limits. Probably they act upon the substances to which they attach themselves, and promote the decomposition of shells, and other exuviae of defunct animals, and also of the rocks and ligneous substances on which they take their station. Of this we are sure, that they work His work who gave them being, and assigned them their several stations in the world of waters.

## CRINOÏDEANS.

In the deepest abysses of the ocean, it is probable, lurks a tribe of plant-like animals, to judge from its numerous fossil remains, abounding in genera and species that are very rarely

Cambridge University Press

978-1-108-00075-8 - On the Power Wisdom and Goodness of God as Manifested in the Creation of Animals and in their History Habits and Instincts, Volume 2

William Kirby

Excerpt

[More information](#)

seen in a recent state, and which, from a supposed resemblance between the prehensory organs or arms, surrounding the head or mouth of several species belonging to the tribe, when their extremities converge, to the blossom of a liliaceous plant, have been denominated *Encrinites* and *Crinoïdeans*.<sup>1</sup> It was not my original intention, as little or nothing was known with respect to the habits and station of the few recent ones that have been met with—except that one has been taken in the seas of Europe, and three in the West Indies, namely, near Martinique, Barbados, and Nevis—to have introduced them into the present work, but having subsequently seen fragments of a specimen, taken either in the Atlantic or Pacific, I am not certain which, and upon examining it under the microscope, finding evident traces of suckers on the underside of its fingers, and of the tentacles that form its fringes,<sup>2</sup> a circumstance I found afterwards mentioned by Ellis, and which throws some light upon their economy, I felt that I ought not to pass them wholly without notice, and finding in the Hunterian Museum a very fine specimen which does not appear to have been figured, for the figure given by Ellis seems to have been taken from Dr. Hunter's specimen, now at Glasgow, and Mr. Miller's from a specimen of Mr. Tobin's, now in the British Museum, by the kind

<sup>1</sup> From κρινον, a lily.<sup>2</sup> PLATE III. B. FIG. 2.