

Degrees in Dependence

Biology

WILLIAM MORTON WHEELER, in *Foibles of Insects and Men* (Knopf):

Parasitism is, of course, a form of "behavior", and may be described as one of several complex types of the reactions of organisms to the most important source of their energy, their food supply. Other reactions to this element of the environment are predatism, commensalism, scavengerism and mutualism. There is in the main sufficient consensus of opinion concerning the distinctions between these different phenomena. Predatory animals kill other animals and devour them wholly or in part. Parasites put other organisms in the position of "hosts" by living *directly* on their tissues in such a manner as not to cause their immediate death. The parasite thus draws *indirectly* on the food supply of another organism by permitting or compelling it to do the hard work of procuring the food and of converting it into much more accessible and more easily assimilable compounds. The parasite may be said, therefore, to use its host as an instrument not only for procuring, but for predigesting, its food. The commensal also uses another animal as an instrument, but merely in gaining access to a food supply which the latter has procured but has not yet assimilated. The scavenger, like the saprophyte among plants, may be described as a parasite of the dead, deriving its sustenance from decompositing animals or plants or from the excretions of the former. The mutualist, finally, as the name implies, lives

The airplane carrier Saratoga can carry 83 planes.

The porcupine's quills help to keep him afloat in the water.

American population in China has fallen off more than 3,000 in the past three years.

The art of weaving carpets is handed down from mother to daughter through many generations in Turkey.

It is believed likely that the top of Mt. McKinley, almost four miles above the sea, and frozen by the long northern winters, may be the scene of the world's lowest temperature records.

in a condition of balanced energetic or nutritional cooperation with another organism.

Of all these types of reactions to the food supply, parasitism is far and away the most prevalent; so prevalent, in fact, that it may be doubted whether there is any animal that does not resort to it, at least during a brief portion of its life, even if this be only during the period when, as an egg, it is drawing its supply of food-yolk from its parent. That parasitism has been most frequently developed from predatism is certain, that it may occasionally have its origin in commensalism, mutualism or scavengerism is highly probable, that it can, especially when it affects a considerable portion of the life-cycle, develop into anything but a more extreme form of parasitism, is very doubtful.

It would be easy to show by the citation of many examples that parasitism is an extremely protean phenomenon, one which escapes through the meshes of any net of scholastic definitions in which we may endeavor to confine it. Nor is this surprising when we stop to consider its great prevalence and the fact that during the course of time the organic world, *pari passu* with its increasing differentiation, has become ever more and more heavily weighted with parasitism and mutualism.

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Nile Swimmers—Cont'd

free hand and so propelled himself across.

That the Greeks used the overhand stroke is shown by a vase depicting a scene in a women's bathing establishment. One of the women is swimming with her right arm extended forward to begin the downward and backward stroke, and her left arm is near her side at the end of a stroke. Two of the other Greek women in the picture wear bathing caps, but bathing suits were thought unnecessary.

Swimming instructors were known upon the banks of the River Nile at a very early date, Professor Dunlap points out. A nobleman of Egypt, who lived before 1800 B. C., recorded proudly that his children and the children of the king took their swimming lessons together.

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Woods Hole Rimes

(From the Woods Hole Song Book)

The Gull

The graceful gull is not content
On furnishing an ornament,
As thru the air he floats and sweeps,
He dreams of fishy food and sleeps
When his large appetite is dulled
So don't you let yourself be gulled.

The Nereis

The Nereis, the Nereis
By moonlight grows delirious,
It fills the sea with progeny
Now isn't that mysterious?

The Sea Urchin

To my peaceable existence
The biologist a menace is,
He takes my eggs to study
Artificial parthenogenesis.

The Sea-Cucumber

Beneath the waves the sea-cucumber
Spends all his hours rapt in slumber,
And he does not appear to see
The fine aquatic scenery.
It seems to me he spends his day
In a most slow, cucumbrous way.

The Squid

The squid, he swims from head to tail,
He blushes when he is pale,
If you attack he will sink
And screen himself with sepia ink.

The Sand-Dollar

The sand dollar is such a good
financier
He deposits himself in a sand bank,
it's clear,
That this is a simple, methodical way
Of saving himself for a rainy day.

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