

The Weekly Newsmagazine of Science

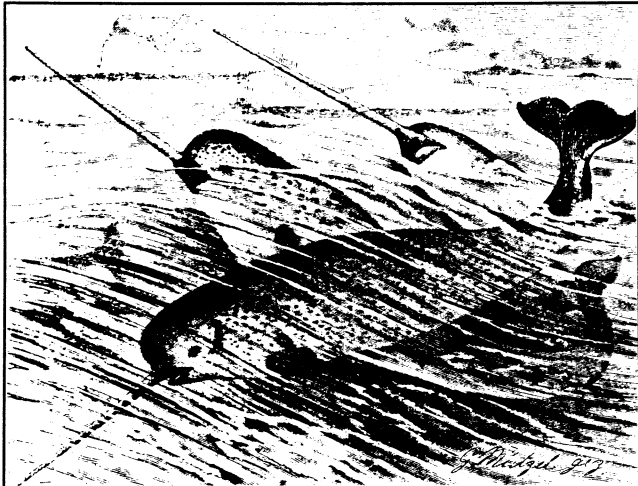
# SCIENCE NEWS

May 25, 1985  
Vol. 127, No. 21  
Pages 321-336

Letting the Sun Shine In

# ON SIZE AND LIFE

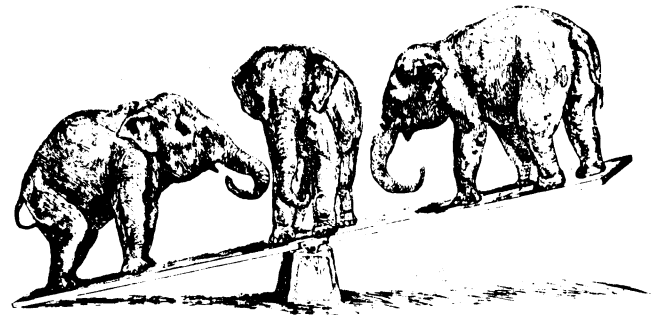
BY THOMAS A. McMAHON AND JOHN TYLER BONNER



The extraordinary tusk of the male narwhals apparently arose as the result of sexual selection. Individuals with large tusks are more likely to mate successfully. At the same time, the tusk would appear to be awkward and disadvantageous for locomotion and feeding. If this is so, the fact that the tusk has been retained means that the advantage of having a tusk at mating time outweighs the disadvantages of pushing a tusk around at other times.

These discussions lead to a clearer understanding of why there are flying squirrels but no flying horses, why ants can lift 10 times their body weight while humans struggle to lift things that weigh no more than we do, and why the smallest mammals and the smallest birds weigh about the same.

Evolution produces organisms of varying sizes and it is through evolution that the problem of adapting to that range of sizes is solved. The authors of this extensively illustrated book consider the implications of size and shape for organisms and analyze why size appears to impose specific restrictions on shape (and shape on size), why there are certain shapes that are physically impossible for large organisms and how natural selection and physical constraints ally to eliminate nature's less efficient shapes.



If elephants had legs proportioned like those of mice, they would be unable to stand without breaking them.

## Science News Book Order Service

1719 N St., NW, Washington, DC 20036

Please send \_\_\_\_\_ copy(ies) of **On Size and Life**. I include a check payable to Science News Book Order Service for \$27.95 plus \$1.00 handling (total \$28.95) for each copy. Domestic orders only.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

RB370

We do know that certain species of organisms that live today must have descended from larger ancestors. Good examples of modern animals that are smaller than their ancestors are hummingbirds, among the vertebrates, and rotifers, among the invertebrates.

W.H. Freeman, 1985, 255 pages, 9½" x 8¾", hardcover, \$27.95

