

on foot, the record is doubtful. Their biological interest is in one bird's being able to overtake another, or the amount of energy expended. Their more general interest is that of any record—what is the biggest, the most costly, the strongest of its kind? When we think how carefully checked are human world records for the mile, for instance, we realize how poorly documented are fastest-bird records. But such as they are, the following often rejected records have been seriously put forward:

Indian spine-tail swift	200 m.p.h. (level flight)
Frigate bird	261 m.p.h. (level flight)
Duck hawk	360 m.p.h. (dive)
Golden eagle	570 m.p.h. (dive)

The fastest records of level flight in calm air that were accepted by Meinertzhagen in 1955 are: homing pigeon, 94.3 miles per hour; golden plover, 62; hummingbird, 60; mallard, 60; swift, 57.

FRUSTRATION IN FISH

In a valley in Mexico, in the state of San Luis Potosi, there are several caves with pools containing blind and half-blind fish well known to aquarists as *cave tetras*. These are closely related to and, indeed, may be crossed with normal-eyed river fish but this presents some difficulties as has been reported by Dr. C. M. Breder, Jr., Curator of Fishes and Aquatic Biology at the American Museum of Natural History, New York.

The normal-eyed fish are gregarious and usually rest in compact schools kept together by visual perception. The blind fish do not form schools but wander continually at random. When a blind and an eyed fish are placed together in a tank for experimental purposes the eyed fish attempts to follow the blind one in its aimless wandering. This is very often disastrous for one or the other. The eyed fish may become emaciated and die, Dr. Breder says, since blind fish normally eat much more than eyed fish and apparently are adjusted to the continual exercise. The eyed fish may become erratic in behavior. One actually took to spinning on its snout at one end of the tank but recovered after removal to another tank. Most likely the eyed fish will attack the blind one and destroy it.

Dual-purpose Skirts

Batak women of the Philippine Islands wear bark skirts wide enough to wrap twice around their bodies so that their skirts can serve as blankets at night if necessary.

How mosquitoes carry malaria is illustrated by an exhibit in Albert W. Harris Hall (Hall 18).

SCIENCE BAFFLER: HOW MANY ANIMALS ARE THERE?

By G. ALAN SOLEM

ASSISTANT CURATOR, LOWER INVERTEBRATES

MANY TIMES I have been asked the seemingly simple question, "How many animals are there?" This has always embarrassed me since no quick answer is possible. What are "animals"? Does "how many" mean individuals or kinds? If kinds, does this mean kinds known to scientists, kinds actually living today, or should the many extinct animals be included? Viewed in this light, the question becomes very complex.

WHAT IS AN ANIMAL?

If one considers only the higher plants and animals, it is relatively easy to propose definitions which will separate the two categories.

at this time. The term "animal" does include far more than mammals and other vertebrates. Biologists use it to cover the vast and heterogeneous assemblage called invertebrates as well as the more familiar vertebrates. A sponge is as much an animal to a biologist as is a mammal, although in the popular literature this definition might not be utilized.

A coral and a clam are two kinds of animals, but by "kind" one usually means "species." Biologists know what a species is, more or less certainly, just as they know what an "animal" or a "plant" is, but definitions are very difficult to make. A good working definition might read: "A species is a kind of animal, composed of all populations of individuals, which, under natural condi-



ARTHROPODA—IN NUMBERS, THE DOMINANT GROUP OF ANIMALS

About 864,000 species of insects and their relatives are known, making this phylum by far the largest of any animal group. Photograph shows section of "Animal Kingdom" exhibit devoted to these creatures.

When the single-celled and subcellular organisms are examined, it becomes obvious that there is no dividing line between "animal" and "plant," but that there is *one world* of living things. The question of how to define animals and where to place the things which are neither animal nor plant is a separate subject and will not be discussed

tions, is actually or potentially capable of interbreeding and producing fully fertile offspring." Species are then grouped into higher categories on the basis of supposed relationship. No general agreement on the number and composition of the many higher categories exists and even on the question of the phyla, the largest divisions formally rec-



1958. "Frustration in Fish." *Bulletin* 29(2), 5–5.

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