



Tree shrews like this one from Asia do not breed well in captivity.

National Institutes of Health

Conventional Wisdom: How Wise?

As scientists find reason to explore the myth, they find exotic animals will (sometimes) breed in captivity.

Wild animals tend not to reproduce in captivity.

This is a bit of conventional wisdom; it is believed by researchers who need new kinds of experimental animals, as well as by animal keepers of all kinds.

It has elements of truth but is not to be swallowed whole.

Take the gorilla, for example. Everyone knew for years that gorillas do not breed in captivity. Then, in 1956 a baby gorilla was born in Ohio. Three years later another was born in captivity, this time in Basle. Two years after that, Basle reported its second infant gorilla, and the National Zoological Park in Washington, (see cover) had its first. Since then, at least three other live gorilla births have taken place, but no one is able to explain the population explosion. "We don't know if it is because of us or in spite of us," says Dr. C. W. Gray, vet at the National Zoo. "These animals come from completely different environments—different diets, different houses, different exercise routines."

So, conventional wisdom about wild animals not breeding seems not to be so wise. However, there are still many species that do not reproduce successfully and where science has not had the good luck it's had with gorillas, it is beginning to dig beneath the surface of things and come up with some right answers.

Scientists assume that if they provide a "proper biological and psycho-

logical environment," normal, healthy mating will follow. The trouble is they don't really know enough about lots of animals to do this and, until recently, it hasn't seemed worth the effort it will take to find out.

But the face of science is changing. Laboratory researchers who once conducted experiments on any animal that was handy and convenient are beginning to look for species that are both easy to handle and as biologically close to man as possible. Basically, this means primates.

Squirrel monkeys are popular with researchers doing behavioral studies because they are friendly animals that are easy to work with. Cardiologists are also interested in squirrel monkeys for studies of atherosclerosis. But, there haven't been more than 20 of the species born in captivity in the last 14 years.

Tree shrews are another species researchers think make ideal animal models, but they aren't any more prolific than the monkeys.

Not long ago, science would have discarded these non-breeders and gone looking for species that presented no problem. Now, they are trying to find out the whys and wherefores of animal reproduction so that they'll know enough to create adequate environments in which these species can live and bear young successfully.

The list of unknowns is a long one, but the answers will be useful to all studies of comparative pharmacology

and physiology, not just to animal breeding. Nutritional needs must be ferreted out and met. "In some instances, we are unable to provide an animal's full nutritional requirements because we don't know what they are," Dr. Gray reports.

Temperature, humidity and light are also thought to be important aspects of a proper biological environment, according to Dr. Raymond Zinn of the National Institutes of Health. For many species, a secure, stable environment may also be a basic need, as well as a society that meets emotional demands. In other words, animals that like to live in large colonies are not apt to mate prodigiously in cages of just a couple of animals, and of course, the reverse also holds true.

Still another factor that cannot be left out of a study of animal breeding habits is compatibility or natural selection, for the fact of the matter is some species like to choose their own mates just as man does.

Yet another unknown, Dr. Robert W. Cooper of the Institute for Comparative Biology at the San Diego Zoo points out, is the fertility cycle of some animal species, "something scientists don't always take into consideration."

In short, the conventional wisdom about wild animals not breeding in captivity is really a case of scientists not knowing enough about the physiology and psychology of animals, and the fault cannot fairly be laid at the animals' feet at all.