

ZOOLOGY

**One Billion Animals
In U.S. Within 20 Years**

► THE POPULATION explosion in the United States applies to animals as well as people, with the number of pets and farm animals combined expected to reach one billion within the next 20 years.

This estimate was made by Dr. Don H. Spangler, president-elect of the American Veterinary Medical Association, before the association convention in Portland, Ore. He spoke of the rapid rise in the animal population to back up a plea for more veterinary schools to provide at least 47,250 vets by 1980, more than twice the present number.

• Science News Letter, 88:79 July 31, 1965

ZOOLOGY

**Flying Start Made
On Kangaroo Count**

► AIR SURVEYS have just been started to estimate the number of kangaroos in western New South Wales. They are an attempt to replace prejudice by knowledge.

Members of the N.S.W. Fauna Protection Panel will carry out the surveys. Officers of the panel hope eventually to plan control measures on accurate information, not guesswork. Farmers have claimed that great numbers of kangaroos threaten their livelihood. Conservationists have agreed that the kangaroo is in danger of becoming extinct.

The Chief Guardian of Fauna in N.S.W., A. A. Strom, has pointed out that there has been an almost continuous open season for kangaroos in the western division of N.S.W. for more than 10 years. A complicating factor is that the term "kangaroo" is applied to a number of species from the red or plains kangaroo to the wallabies.

"Anything that hops like a kangaroo is being regarded as being a menace to the man on the land," said Mr. Strom. Country people had been saying for years that a kangaroo eats as much as from 3 to 10 sheep, travels great distances to get the best food and reproduces at a phenomenal rate. But work by the Commonwealth Scientific and Industrial Research Organization had shown that the kangaroo eats about as much as a sheep, does not migrate far and reproduces at the same rate as sheep.

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ENTOMOLOGY

**Dancing, Buzzing Show
Bee Language Evolution**

► BUZZING is a communication mechanism which is present in more genera of the bee family than is the so-called "dancing" behavior of the honeybee. This fact seems to provide a means for tracing the evolution of "bee language."

Only the four species of the genus *Apis* exhibit the kind of dance first discovered and analyzed by Karl von Frisch, a German entomologist who specialized in bee communications. He found that certain movements performed by a foraging bee indicate

the direction, distance and quality of the feeding place from which it has returned.

But sound production or buzzing appear to play a role in the communication of both the dancing honeybees and the more primitive stinging bees. Observations indicate that in both *Apis* and the stingless bee *Melipona*, certain sounds produced by a foraging bee in the hive indicate the distance of a feeding place and "this signal is understood by the hive mates," a report in *Science*, 149: 320, 1965, stated. A similar method for announcing the direction of the feeding place has also been detected.

But the still more primitive stingless bee *Trigona* produces sounds which do not communicate information to hive mates. Smell may be the important factor in the communication of these bees.

The experiments that led to these conclusions were carried out in Rio Claro, Brazil, by Harald Esch and Ilse Esch of Strahlenbiologisches Institut, Munich, Germany, and Warwick E. Kerr of the Faculdade de Filosofia, Cienciase Letras, Rio Claro, Sao Paulo, Brazil.

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Nature Note**Lightning**

► HOT WEATHER MEANS lightning weather. As the sun rises high in the Northern Hemisphere, heated air currents rise and contribute energy to those huge natural generators, the thunderclouds, in which water and air build up lethal stores of electricity.

Scientists are still learning exactly how lightning is generated in clouds. They know that the rising air currents carry moisture evaporated from the earth high into the sky. At high altitudes, the atmosphere is cooler and the moisture condenses into raindrops which are then pulled downward by gravity and fall toward earth, inside the cloud. There can be billions of these droplets in a cloud three miles high and two to five miles in diameter.

As the raindrops plunge toward earth, they are hit and shattered into a fine spray by upsurging hot winds. Once again they are carried, in the form of fine mist, to the top of the cloud, where they condense and begin to repeat the cycle.

As each drop of water is broken into a spray, electric charges accumulate. Positive electricity seems to concentrate near the top of the cloud, and negative charges build up near the bottom. Eventually the electric potential becomes so great that the negative and positive charges suddenly leap toward each other to neutralize each other, blasting a lightning path from the front of the storm cloud to the back, from the upper clouds to the lower, or from the cloud to earth.

Lightning is the most deadly of natural forces and also the most persistent fire starter. More than two billion flashes of lightning strike the earth a year, mostly during the summer months.

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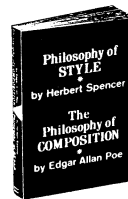
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