NATURE RAMBLINGS

By Frank Thone

Talented Hind Legs

Among the ground-dwelling quadrupeds the universal tendency is for the hind legs to become longer and stronger than the front ones. Even among those that remain permanently four-footed this evolutionary drift can be noted: horses and cows, dogs and cats, rats and rabbits are all witnesses.

In some cases, of which man is the most familiar and conspicuous, this tendency ends in complete bipedalism. The hind limbs assume all the work of supporting and moving the body, leaving the front ones to become arms, with hands at the end to do all sorts of things both good and ill.

But man is not the most highly specialized biped in this existence. His legs are after all fairly conservative affairs, that stick to running, walking and such-like sober gaits. A man who can jump twice his own length is doing pretty well; if he can jump three times his own length he is quite definitely athletic. But there are plenty of mammals whose hind limbs have become so specialized for jumping that three or four times their own length even including a longish tail) is a commonplace amble. The numerous species of kangaroos in Australia and the neighboring islands are classic examples, and even more striking are the so-called kangaroo rats and kangaroo mice, and the similar-appearing but more distantly related jerboas. Some of these little jumpers can make leaps of three or four feet quite easily, and more than that if they are frightened badly enough, although their body length may be only three or four inches.

There are some birds, too, that can do surprising feats in jumping.

Zoology

Science News-Letter, September 13, 1930

Squatty Steel Tank

IF you fill a rubber balloon with water, put the inside under about 15 pounds pressure and set it down on a table, it will assume a shape very much like that of the huge metal tank shown on the front cover. In fact, that is the very reason this tank was built as a bulging spheroid.

For the same amount of steel, a tank made in this odd shape will hold more liquid than one of the usual cylindrical design. As much material as possible is used for a direct purpose and as little as possible merely to maintain shape. The bottom, shell and roof form a more or less continuous curve and much of the bursting force is transferred from the sides to the roof and bottom so that practically all the metal is used for effective stress purposes.

Natural gasoline, high test and even some ordinary motor fuel gasolines boil at ordinary temperatures and the loss from this boiling is excessive unless the liquid can be subject to a slight pressure.

The spheroid is built to withstand effectively the combination of gas and liquid pressures. As the gas pressure is increased the structure tends to become more spherical and as it is filled with liquid, it tends to flatten out. The only place where the tendency to change shape is sufficient to require reinforcing is near the bottom and here supports take care of the overhanging liquid load.

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