

## ZOOLOGY

## Camels Do Not Store Water In Either Hump or Stomach

**S**PREAD of the war into the "camel lands" of East and North Africa and Iraq has brought many thousands of camels into use, to supplement the faster but fuel-demanding motor trains. This in turn has brought to the fore certain physiological facts about camels, produced by recent research, which do not jibe with long-held notions about these ungainly, unruly but useful beasts of burden.

For one thing, a camel's hump is not composed of water, nor is it constructed of cellular spaces arranged for storing water. It is composed of solid fat. The only recorded analysis of a hump gave 80 pounds of fat; this is about one-fifteenth of the weight of a fully-grown animal. As the metabolism, or burning in the body, of one pound of fat gives rise to about a pound of water, the fat in the hump is the equivalent of 10 gallons of water when the camel draws upon its hump for food.

It is widely believed that the camel stores water in two pouches which rise out of the animal's main stomach. One authority—the author of the only book ever written about the management of camels—regards this as a fable, and, on the basis of post-mortem examinations, believes that the pouches serve to moisten the food which is to be masticated during rumination. The water they contain is thus derived from the general circulation, as saliva is, and does not represent a special store.

The camel's normal reserve of liquid water seems in fact to be stored all over its body, just as is the case with other animals, but the camel can store water in the tissues underlying its skin. The extent of the water reserve in the camel depends largely upon the plentifulness of the supply of salt. A camel which has endured a long march without



### FOOTPRINTS IN ROCK

*Footprints of undoubted human beings, and not very ancient ones at that, were found imprinted in solid stone on the outskirts of the city of Managua, Nicaragua, recently by F. B. Richardson of the Carnegie Institution of Washington. The secret of the apparent mystery is a simple one: natives of the region, fleeing from a volcanic eruption somewhere between 5,000 and 2,000 years ago, crossed a fresh mud flow, which subsequently was buried in cinders from the same or an immediately subsequent eruption, and hardened to stony consistency. The imprints show that the persons who made them were walking, not running, and suggest also that they were carrying heavy burdens—probably household gear or provisions which these fugitives were saving from this long-forgotten American Pompeii.*

much food or water will plump up remarkably if given water and salt.

When deprived of salt camels given fresh water to drink may develop "mad staggers", which seems to be simply water intoxication. Camels can thus get drunk on pure water. They can also suffer from getting too much salt, but normally if they cannot graze on salt-bearing vegetation they must be given salt with their fodder.

Many curious facts about camels are given in a new publication, "The Feeding of Camels", compiled by I. Leitch,

recently issued by the Imperial Bureau of Animal Nutrition, Aberdeen, Scotland. The subject of this treatise is the African or Arabian camel, of which there are nearly half a million in the Anglo-Egyptian Sudan, nearly a million in India, a million and a half in British Somaliland, and some in Australia and Egypt. Most of the remaining million and a half of the world's camels are of the two-humped or Bactrian type peculiar to Asia, about which nobody has yet written a book.

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