

likely are the animals to have cancer, so that they conclude that if a sufficient number of parasites is present and the animal lives long enough, every rat would develop cancer.

"Thus the idea hitherto prevalent that the liability to cancer is carried in the germ cells is not borne out by these experiments. The cancer change is in a body cell and due to some sort of irritant. The technical term is somatic mutation. No matter how inbred these animals were, no cancer of the liver occurred unless the animals were irritated by these parasites.

"This is an extremely hopeful discovery for it means that while long life is one factor in having cancer, as was shown long ago from the life insurance records, the only other is the amount of irritation, so that if irritation can be avoided a person is not likely to develop the disease."

*Science News Letter, April 15, 1933*

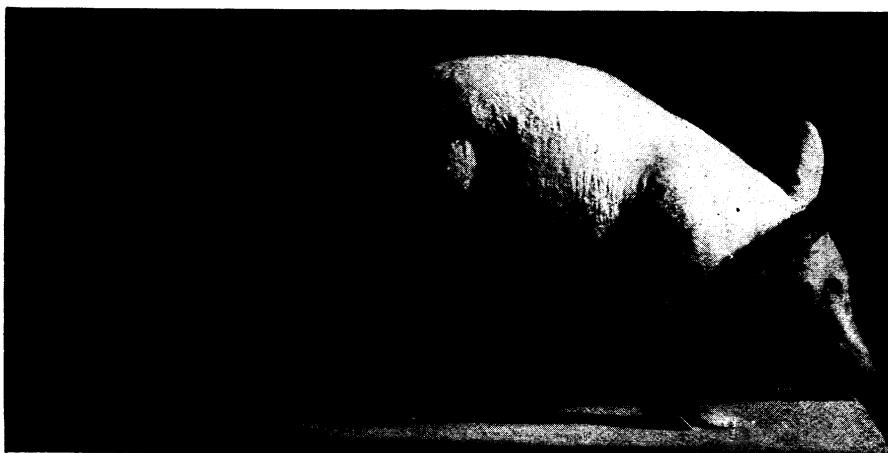
## ZOOLOGY

## Aardvark Comes To Buffalo Museum

LOOKING LIKE some strange imaginary monster out of a medieval bestiary, as weird to the eye as his Boer-Dutch name is to the ear, the aardvark is enough of a rarity in this country to justify special mention when a new specimen arrives.

The animal pictured here has been added to the collections of the Buffalo Museum of Science. Timid and seclusive by day, the aardvark prowls at night, ripping open ant-heaps with his powerful claws and licking up the enraged swarming insects with a long sticky tongue that flickers through his tubular snout.

*Science News Letter, April 15, 1933*



THE INCREDIBLE AARDVARK

## MEDICINE

# Research Indicates Vitamin C May Contain Cure For Goiter

## Iodine Ally Seen as Result of Tests With Rabbits Given Goiter by Cabbage Diet and Cured by Cabbage Extract

A FURTHER means of controlling the still baffling disease, goiter, may be found in vitamin C, it appears from the latest work of a pioneer in goiter research, Dr. David Marine of the Montefiore Hospital in New York.

Working with Drs. E. J. Baumann, B. Webster and A. Cipra, Dr. Marine produced goiters in rabbits by feeding them cabbage. Then he cured the rabbits by giving them an extract made from cabbage. The extract was made by the same method Szent-Györgyi used in preparing hexuronic acid from certain plant tissues and from adrenal gland cortex. It is thought to be vitamin C, just as hexuronic acid itself is now believed to be vitamin C.

### Iodine Not Responsible

The cabbage extract is practically free from iodine, which has long been known to reduce the size of simple goiters. So the potency of the cabbage extract in curing the rabbit goiters is believed not to be due to its iodine content.

The work began with the observation of Drs. Alan Chesney and Webster that rabbits fed on an exclusive cabbage diet developed goiter. Drs. Marine and Bauman subsequently noted that steaming the cabbage developed the goiter even more rapidly. The juice

pressed from the steamed cabbage plays no part in producing the goiters, but only the press cake remaining. Washing the cabbage increases its goiter-producing properties, although the amount of iodine removed in washing was believed too small to be active in preventing the goiters.

### Odd Cures

Strangely enough, these goiters are cured by lawn grass, fresh alfalfa and even skunk cabbage. The curative power of these materials is found to vary not with their iodine-containing property as hitherto believed, but with their iodine-absorbing power. It is greatest in young growing plants and least in those that have been stored, dried or exposed to air for a time.

These observations led to the belief that hexuronic acid or some substance closely paralleling it found in plant tissues might be the active agent in preventing the goiters. Then followed the demonstration that an extract from cabbage, prepared as for hexuronic acid, does actually reduce the size of the goiters.

In explaining why certain foods may produce goiters and certain plant and animal tissues cure them, Dr. Marine said that the foods that produce goiters contain certain chemicals which prevent the burning of food in the body. This increases the need for thyroid secretion and produces a relative deficiency of iodine. The plant and animal tissues which cure goiter contain substances which absorb iodine and thus spare the thyroid gland from overactivity, perhaps by lessening the need for its iodine-containing secretion. Hexuronic acid, found in both plant and animal tissues and believed to be vitamin C, is such a compound.

*Science News Letter, April 15, 1933*

Engineers report that tractors scarcely bigger than baby carriages and powered with tiny motors can be built for economical operation on small farms of less than twenty acres.