



### Goats Play the Devil

➤ **SATAN**, in modern comic and semi-serious art, is drawn as a man with several decidedly goatish features. He has cloven hooves, and goat's horns top a long capricious countenance that usually has a "goatee" at its lower extremity. Sometimes, too, his ears stick out like a billy-goat's.

Sometimes it is contended that these symbolisms are simply transfers from the ancient Greek goat-god, Pan. That may or may not be true historically. If it is, however, it would assign to Pan a role much deeper and more malicious than the mere untamable, irresponsible freedom which Pan was supposed to symbolize. For real, flesh-and-blood goats, pastured by people for their wool and milk and meat, quite literally play the devil with the land over which they trample and nibble. They represent the last, hungriest, most destructive stage of over-grazing.

Cattle and horses may crop the grass down to the last inch if too many of them are run on the range. Sheep will take that last inch, leaving only the

roots in the ground. Goats will take even the roots, and thereafter browse on the woody shrubs that invade the pastures when grasses and other good herbs have been all eaten up. In the meantime, their restlessly trampling, sharp-edged hooves keep the soil surface cut up, ready to blow with the wind or wash with the rain.

This is not an imaginary cycle. It has happened over and over again, especially in the Mediterranean lands. Pan, the goat-god, was not only a denizen of the rocky wilderness. He was to a considerable extent the creator of the wilderness.

The ultimate devil in the destruction of the land, however, is neither Pan nor his four-footed prototypes. Man, not Pan, must take the final responsibility. For goats, however wild they may run,

are brought into new places by human herdsmen. If their numbers become such as to loose the damnation of erosion on the land, it is due either to the need or the greed of the men who control the size of the herds.

Thus far, in our own West, we are in the cattle-and-sheep stage of over-grazing. Goats have not yet entered the picture as an important element. If we keep on at the present clip, another generation or two may see little horns and sharp hooves where bison and antelope were in balance with nature a couple of generations ago. Then we shall know that America has been added to the world's list of hungry lands.

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### DENTISTRY

## Use of Sodium Fluoride

**Chemical shows great promise in curbing tooth decay but must be used with caution. Four applications to teeth are necessary.**

➤ **ENTHUSIASTIC** reports on sodium fluoride as a means of curbing tooth decay, with caution against misuse of this chemical, were presented at the meeting in Boston of the American Dental Association.

Applying this chemical to the teeth of children under 12 years has reduced tooth decay as much as 40%, Dr. John W. Knutson, senior dental health surgeon, U. S. Public Health Service, reported.

He called sodium fluoride "one of the most promising chemicals in curbing dental decay among children."

Four applications of a 2% solution of the fluoride are necessary to achieve the desired results. Treatments, he said, should be completed in one to two months.

This use of sodium fluoride followed the discovery some years ago that small amounts in the drinking water materially reduced the amount of tooth decay in children who drank such water during the years their teeth are being formed. As a result, a number of communities have started adding small amounts of fluorine to their water supplies.

How the fluorine acts to prevent tooth decay is not known but it is agreed the chemical makes tooth enamel harder to dissolve in acid.

The American Dental Association has

recommended that all dentists apply dilute solutions of the chemical to the teeth of all child patients during the course of routine dental treatments.

Fluorinated tooth pastes and powders and mouth washes, however, have not proved effective in controlling decay, Dr. F. J. McClure, of the U. S. Public Health Service's National Institute of Health, declared.

He warned against the use of fluoride tablets, or pills, unless taken under a dentist's or doctor's prescription. Too much fluorine, he pointed out, can cause ugly mottling of the teeth and can damage the kidneys.

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### GENERAL SCIENCE

## Latin American Scientists Win Grants for Work Here

➤ **LATIN-AMERICAN** scientists will conduct studies in fields ranging from earthquakes to medicine in this country under John Simon Guggenheim Memorial Foundation fellowships.

A total of 29 Latin American fellowships have been granted with total stipends of \$80,000. The fellowships are granted to scientists, scholars and artists of 11 Latin American nations and Puerto Rico.

*Science News Letter, August 16, 1947*

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