

treme case for so-called denicotined cigarettes was from 90 to 78 degrees in 25 minutes with an average of 88 to 83 degrees.

*Science News Letter, January 5, 1935*

## BACTERIOLOGY

## Fruit Juice Treated With Silver and Electricity

**A** STUDY of a combination of silver and electricity to preserve fruit juices such as cider and grape juice is being made by Lawrence H. James and E. A. Beavens of the U. S. Bureau of Chemistry and Soils and was reported to the Society of American Bacteriologists.

The method is similar to the sterilization of water in swimming pools by the use of colloidal silver. A small electric current is passed through the solution which forces the silver into the juice so that when enough silver is present, it delays fermentation of the fruit juices.

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## ASTRONOMY

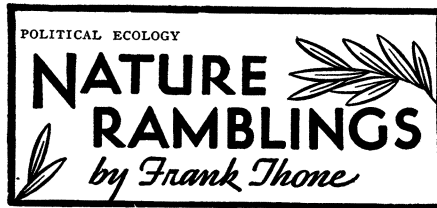
## Moon Distances— A Correction

**I**N THE article "1935 Brings Seven Eclipses" (*SNL*, Dec. 29, p. 407) the author, James Stokley, makes the following correction:

Column 2, paragraph 3 should read as follows, "On January 6, the earth is nearest the moon (at 'perigee') with 223,450 miles separating us. 'Apogee,' the time that we are farthest, comes on January 20, when the two bodies are 252,400 miles apart."

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The Great Smokies, the highest mountains in the East, are about 300,000,000 years old in their present form.



### We Fight For Grass

**G**RASS, the basic cause of some of the toughest fighting American troops ever had to do, may in a remote part of the world give the soldiers of another growing empire their share of trouble.

Recently an observer in the Far East, commenting on Japan's apparent intention to extend her Manchurian conquests by annexing the adjacent province of Outer Mongolia, stated that one cause of friction between the newcomers and the natives is reported to be "the tilling of the land, which to a nomadic Mongol amounts almost to blasphemy."

Should such a conflict develop, veterans of the Indian fighting days of our own West may see history repeating itself, at least in part. To be sure, there are differences. The Plains Indians were hunters, not herdsmen as the Mongols are. Their concern was meat, not milk. But back of that, there is a common uniting background. The Plains Indians depended principally on the buffalo or bison, which was a grazing animal, so that when settlers began to break the sod with their plows, the belief quickly rose among the Indians, that "that iron-on-a-stick will bury the buffalo."

So they rose up and fought, and the United States Regulars had on their hands a veritable Thirty Years' War—from the Sixties to the Nineties, when the buffalo were almost completely wiped out and the Indians' commissary was gone.

The Indians fought for grass. They lost. The plow broke sod farther and farther westward, until in the mad, wheat-hungry years of the World War grasslands that never should have been turned over at all were broken and put

into grain. Then came drought, grasshoppers, dust storms; the Indians were in part avenged. Now we seek to replace the vanished grass.

If the Japanese and the Mongol tribesmen do come to blows, we do not expect too close a parallel in the course of the fighting. The Mongols are better organized than our Indians were, and probably man for man at least as tough and able fighters. It was possible to cut the Indians' supplies on by slaughtering the buffalo herds; but the Mongols keep their domestic animals closely tended, so that an attack on their commissary would undoubtedly involve the raiding party in a death-fight with every man, woman and child in a tribe. Mongols are well mounted and ride like Centaurs; Japanese cavalry is rated by military men as not exactly the world's best.

To be sure, there is the airplane. But Japan has not found planes an all-answering argument against insurgents in Manchuria; and some years ago Spain had even worse luck with planes in the Riff. An airplane wants a concentrated, not a scattering target.

But if the Mongols finally lose and are pushed out, what then? Our defeated Indians, with nothing but mountains and desert at their backs, had no choice but surrender or annihilation. Behind the Mongols lies the friendly boundary of Soviet Russia, which probably would not mind at all the accretion of a large group of colonists with a permanent anti-Japanese grudge.

It is not impossible that the tinder of the expected flare-up between Russia and Japan may be the curled gray grass of Mongolia.

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Commercially canned orange juice contains practically the same amount of Vitamin C as fresh orange juice, according to tests at the University of California.

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**● RADIO**

Tuesday, January 8, 4:30 p. m.  
**STELLAR GUESTS**, by Dr. Fritz Zwicky,  
of the California Institute of Technology.

Tuesday, January 15, 4:30 p. m.  
**WHAT COSMIC RAYS TELL US**, by  
Dr. H. Victor Neher, California Institute of Technology.

In the Science Service series of radio addresses given by eminent scientists over the Columbia Broadcasting System.