

## PHYSICS

# Stratosphere Flights May Pierce the Ozone Layer

**Latest Studies Indicate Ozone Ocean of Upper Air Is Much Lower Than Had Been Thought in Past**

**T**HE earth's protective layer of ozone, that cuts down the burning ultraviolet rays from the sun, may be tapped by the next stratosphere flight.

Without the presence of ozone in the stratosphere, life on earth probably would not exist in its present form because the ultraviolet radiation from the sun affects man and other organisms. Tanning and sunburn are but mild forms of what could occur if ozone were not present in the air.

The possibility that forthcoming stratosphere flights may reach the ozone layer arose in discussion on the report of Prof. Rudolf Ladenburg of Princeton University before the joint meeting of the American Physical Society and the Optical Society of America at Columbia University.

Reviewing recent studies of the earth's ozone layer, Prof. Ladenburg indicated that instead of being some thirty-one miles above the region of man the layer appeared to be but fifteen miles up.

Stratosphere balloons with a "ceiling" of 75,000 feet like the proposed ascension of the National Geographic Society-U. S. Army Air Corps will thus be able to get into, and study, the ozone layer.

Important problems await solution by studies of the ozone layer, Prof. Ladenburg indicated. Studies already made show that the amount of ozone in the atmosphere reaches high values in the spring and drops to low values in the fall. Sunlight apparently tends to destroy ozone, rather than to produce it.

## Should Search For Other Causes

Future studies of the air's ozone should be directed, Prof. Ladenburg said, to a search for other causes of the protective gas than mere sunlight. It may turn out that electric particles shot off from the sun may create ozone just as they cause the aurora borealis or northern lights. Not only has recent research showed the ozone layer is only about half as high up as science formerly thought, Prof. Ladenburg said,

but there is good evidence that it is not a narrow layer as previously pictured. It probably extends from 60,000 to 100,000 feet, with its maximum concentration coming near 78,000 feet.

How absorbing is ozone for sunlight is shown, the Princeton physicist indicated, by the fact that all the ozone in the earth's atmosphere, if compressed to normal temperatures and pressures, need be but one-tenth of an inch thick to account for sunlight's intensity in the ultraviolet as now measured.

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## PUBLIC HEALTH

## Fewer Deaths Among Wage Earners Than Ever Before

**T**HE general mortality of the United States was probably slightly higher in 1934 than in 1933, figures thus far available indicate, but the year marked a new low record of mortality among wage earners, Metropolitan Life Insurance Company statisticians find.

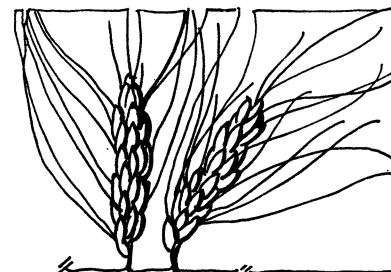
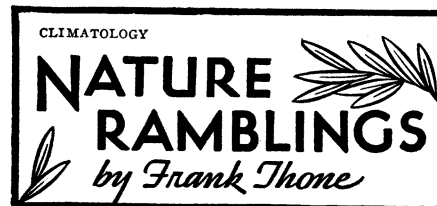
The new low death rates apparent in their records show that health conditions have been maintained on a very high level among insured wage earners and their families in the United States and Canada, it is pointed out.

"It is particularly noteworthy that among this insured group the downward trend of mortality over more than two decades has not been interrupted during five years of economic disturbance."

About 68,000 lives were saved in the year 1934 alone over those that would have been lost if 1911 conditions had prevailed, the statisticians figure from comparing their mortality figures for the two years. Over the entire period since 1911 the accumulated saving of lives is now close to 1,000,000.

*Science News Letter, March 9, 1935*

Disappearance of a tiny glass needle of radium from a Michigan doctor's office was recently solved by an electro-scope which detected the missing radium under the flooring of a janitor's closet.



**What Price Wheat?**

**D**UST, riding devastatingly on the wings of Western storms, has once more written its warning large, against the national folly of raising too much wheat and destroying the old cover of soil-binding grass. More than a month ago, U. S. Weather Bureau scientists warned that when the late-February and early-March storms began to blow, dust storms might be expected. And the recent storm may be only the first of the season; others as bad or worse may follow. It is impossible to predict whether any of them will blanket the country as did the tremendous dust storm of mid-April, 1934; but the recurrence of such a portent over the East is not at all impossible.

The cause for such a dust storm is the same as the cause for any wind-storm: large, sluggish masses of air over the mid-continent, warmed by the returning sun, tending to rise as its specific gravity becomes less. Approach of a colder, heavier air mass from the northwest, sliding under the warm air, boosts it up the faster, and the high-velocity winds along the earth's surface suck up the dust and carry it along.

The moral for us of the present generation, scientists point out, is that unless the dust were there, dry and loose, the storm would be little more than an ordinary late-winter windstorm, blustery and uncomfortable, to be sure, but not a menace to crops and a supreme irritation to all business and housekeeping. And the dust is loose because man made it loose. We plowed parts of the West for wheat that nobody ever had any business plowing; the scientists warned us beforehand, and they rub it in now. The dust is good pastureland soil, once held anchored by the roots of