

METEOROLOGY

# Irregular Rainfall on Barren Plains Cause of China Floods

**A**S ONE of the great rivers, on rampage again, brings watery death and destruction to the heart of the world's most thickly populated country, drowning thousands and sending thousands more to the tops of the city walls for safety, people wonder why China has so many and such disastrous floods.

Irregular and abnormal rainfall descending on arid plains barren of vegetation that would stay the rush of the water to the sea is, in brief, the answer of authorities in geography of the U. S. Department of Commerce. Data there show the extreme variability of these rains. The Hupei area at the beginning of the fabled Yangtze river gorges is an example. In 1897 rainfall of 10.6 inches was recorded for May. For the same month in 1900 the rainfall was reduced to a meager 1.9 inches. In June of 1897 it totaled 2.5 inches, then in July mounted to 16.6 inches, and by August and September fell back to 8 inches or less. July, 1924, holds the heavy precipitation record for that month, with 19.8 inches of rain.

## Greater in Summer

The rains in China are always greater in summer than winter, and during a normal year at the city of Hankow, the focus of this year's disaster, there is a 40-foot difference in the river's level for these seasons.

Centuries of intense cultivation in China have stripped the land of vegetation. Everything raised must be edible. When the rains fall there is no spongy green carpet to absorb them, and they rush on to swell the Yangtze and its tributaries. From out of the gorges, walled high on each side, comes this chief artery of vast China, and as soon as the broad alluvial plains are reached the tremendous force of the caged torrent takes effect and the Yangtze spreads out over the country in one muddy blanket.

Attempts have been made by the weary Chinese peasant to build strong dykes to reenforce the river's natural levees. He pays a tax for that purpose. But something usually happens to the tax, and so for seven years the Yangtze dykes have gone unrepaired.

The river deposits material along its edges each time it overflows. In consequence, the Yangtze has built itself up until in some sections its bed is actually higher than the surrounding plain. Masses of Chinese live in this flood plain below the river to take advantage of the rich, black soil. And when the monsoon speaks they answer—usually with their lives.

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ASTRONOMY

## Astronomer Disputes Theory That Universe is Exploding

**E**XPLANATIONS based on Einstein's relativity theory for the apparent vast speed of recession of distant nebulae were challenged by Dr. Heber D. Curtis, Director of the University of Michigan Observatory at Detroit, speaking before the American Astronomical Society at the Perkins Observatory of Ohio Wesleyan University. Dr. Curtis declared that one group of distant nebulae, in the constellation of Leo, which seems to be departing at the rate of

6,900 miles a second, is really going at the more modest figure of 1,500 miles. Further, he stated, by applying this correction, the nebulae are found to be not all receding from the earth, but some are approaching.

The measure of apparent motions of these nebulae is based on studies of their spectra, where the dark lines are shifted to the red end. Dr. Curtis called attention to a formula proposed thirty years ago by a French physicist named Moessard, and which has since been neglected. This takes into account the motion of the observer, so by applying it to the motion of our own stellar system, the galaxy, these nebulae, which are distant galaxies, are found to be moving at slower speeds.

If Dr. Curtis' contention is correct, previous explanations of these apparently high speeds on the basis of a limited universe are wrong, and our universe is really infinite. He objected not only to Einstein's view, and the application of it to the problem by Dr. Willem de Sitter, of Leiden, Holland, but he also questioned other explanations by Dr. C. F. Tolman, of the California Institute of Technology, and by the Belgian priest, the Abbé G. Lemaitre, that the universe really is expanding at tremendous rate.

Dr. Curtis admitted that his theory required certain assumptions but claimed that they were no more unreasonable than assumptions made by others.

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PSYCHIATRY

## Patients Disclose Private Affairs Under Drug Influence

**A** PSYCHOLOGIST has discovered a means of "breaking the ice" which will make even the most reserved person anxious to discuss his private affairs. It is a small dose of sodium amytal, a derivative of barbituric acid related to the common drugs veronal and luminal, which has been used for years as an anesthetic. Dr. Erich Lindemann, of the Psychopathic Hospital of the State University of Iowa, has reported its new use.

In the psychological laboratory of the Psychopathic Hospital, Dr. Lindemann performed the experiment of giving a very small dose of this same drug to psychotic patients in the hospital and also to normal individuals. This dose,

though too small to produce anesthesia or even sleepiness, had a decided effect on the emotions and on the subject's personal relations with those coming in contact with him.

The most striking effect on the normal subjects was the desire to tell about personal matters which the individual would ordinarily want to keep hidden. Under the influence of this drug, a person is unable to refuse to give the answers to questions about the most intimate matters. He shows a warm emotional attitude toward others, and has a feeling of strength, self-confidence, and serene contentment.

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