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## TEMPLE UNIVERSITY

Broad Street at Montgomery Ave., Phila., Pa.

ECONOMIC GEOGRAPHY

# Mongolia no Promised Land For Emigrants From Crowded China

## Gobi Desert Leaves Room for Only Limited Areas in Arable Grasslands and Land Suitable for Irrigation

*Following is the third of a series of four articles on the tangled and vexed situation in the Far East as seen by leading geographers.*

**I**F CHINA loses Manchuria as breathing space for some of her tightly packed millions of people, she cannot hope to turn to Mongolia, farther inland, find an outlet "just as good."

Mongolia has its possibilities. It is valuable and usable territory, as China, Japan, and Russia all recognize. But a thumbs-down verdict on Mongolia as a Promised Land for Chinese pioneers is rendered by two geographers who have made a special study of that particular situation. Their observations are reported in a new publication of the American Geographical Society, dealing with "Pioneer Settlement" throughout the world.

One of these specialists in Far Eastern geography, George B. Cressy, declares: "The roseate hopes often held out that Mongolia may be able to absorb great numbers of settlers from south of the Great Wall are without foundation. So long as the physical environment remains as now, the bulk of Mongolia is not land for the farmer."

Where Manchuria has absorbed millions of Chinese pioneers, perhaps as many as 20,000,000, Mongolia has taken in only tens of thousands.

It is true that Mongolia lays out a welcoming doormat to Chinese of the crowded northern plain. This welcome is an alluring stretch of fertile grassland north of the Great Wall of China.

A good many Chinese have spread over into this part of Mongolia. Where they have settled there are well cultivated fields of barley, oats, flax, millet. But Mongolia's welcoming grasslands extend no more than a hundred miles north of the Great Wall. Beyond that begins the Gobi Desert, which is so large and so discouraging a part of Mongolia.

There are other patches of arable land in other sections of Mongolia. Irrigation has made some additional farm land, and forced the wilderness to yield apricots, nectarines, and other fruits.

A large irrigation project to utilize water from the Hwang Ho River is now nearing completion, Mr. Cressy reports. This will reclaim 335,000 acres of heretofore arid land. The main canal, dug by hand, is 40 miles long. With a dependable supply of water, that particular district should prosper and no longer fear famine in drought years. But the future may not work out so favorably. In such situations in Mongolia, Mr. Cressy explains, the problem is to keep the people from pouring in to tax the productivity of the land to its utmost.

Chinese pioneers in Mongolia are young people, in the western area at least, writes Owen Lattimore in the same book on "Pioneer Settlement." Hard times in China force younger sons to trek north in bands. They take over land from nomad Mongols. On this land the young pioneers build mud huts and break ground for planting. After the first harvest they go back to fetch their women and children. The typical village "elder" in such a community is a man not past his thirties.

Social conditions among these pioneers are looked upon (*Turn to page 11*)



The Science Service radio address next week will be on the subject,

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## FEEDING THE GROWING POPULATION

# A

by

Dr. William Crocker

# D

Director of the Boyce Thompson Institute for Plant Research, Inc., at Yonkers, N. Y.

# I

FRIDAY, JULY 8

# O

at 2:45 P. M., Eastern Standard Time



Over Stations of

The Columbia Broadcasting System

ZOOLOGY

# NATURE RAMBLINGS

by Frank Thome



Our Friend the Bat

See Front Cover

WITH THE COMING of warm summer weather, and the arrival in number of insects to eat, bats are becoming more noticeable as they make their noiseless nightly patrols. Because of their nocturnal, and therefore mysterious habits, and because of their preference for homes in caves and dark holes, our ancestors came to regard them as evil and sinister creatures, and equipped their demons with bats' wings, and told wild tales about bat-vampires that sucked human blood.

As a matter of fact, bats are harmless and humorous creatures, and their food habits make them great friends of man. Their dodging, erratic flight through the dusk is occasioned by the dodging, erratic flight of their prey, which consists mainly of insects. Though bats are not blind, but have sharp little eyes that probably see fairly well in the half-light, it is probable that they are guided more by hearing than by sight, for their ears are relatively enormous. It is probable also that some, if not all, bats have a sixth sense related to hearing, whereby they can perceive air vibrations of low frequency, for many of these animals have special organs with large supplies of nerves.

Bats are unique animals in that they are the only mammals that fly. Their wing-bones are really enormous elongated fingers, with webs of nearly naked skin stretched between. If the fingers of a man were stretched out in proportion, they would be nearly four feet long.

The bat photo on the front cover of this issue of the SCIENCE NEWS LETTER is by Cornelia Clarke.

*Science News Letter, July 2, 1932*

as barbarous by Chinese stay-at-homes who have not ventured north beyond their Great Wall, Mr. Lattimore finds.

"Social ties, especially in the first years of settlement, are loose," he writes. "Men fail or become discouraged and abscond, and their wives go to other men. Young men drift away for a season of caravan work, and their wives 'lean,' as the expression goes, on other men. Parentage of children is often doubtful, and filial piety is not comparable as a social force to filial piety in China proper."

Everything considered, Mr. Lattimore concludes that "the Chinaman, pushed out of his country by pressure of population and grinding poverty, does not win his way into a better world by emigrating to Mongolia as a pioneer."

For the first few years, the pioneer may have more food to eat. But he has brought traditions and customs of China out to the new edge of civilization. And

that means that in a few generations the community is just as poor and crowded and hungry as it would have been back home.

The reasons, traced by Mr. Lattimore, are two. First, the old story of excessive regard for family, leading to early marriage of sons in order to provide grandsons. A family will contract debts from which there is no hope of recovery merely in order to hasten a marriage. The second handicap is lack of a stable financing system.

"There is no such thing as a safe Chinese paper currency or a safe Chinese bank," writes Mr. Lattimore. "Banks may be ruined and their paper currency rendered valueless by a political upheaval or a civil war."

Until Chinese customs and standards change, pioneers in Mongolia have little chance to escape from these handicaps, it appears.

*Science News Letter, July 2, 1932*

ASTRONOMY

## Two New Comets Discovered By American and Australian

A NEW COMET has been discovered by Kenneth A. Newman, a young astronomer at the Lowell Observatory, Flagstaff, Arizona, it was announced by Harvard College Observatory, American clearing house for astronomical news.

Mr. Newman first saw the new visitor to our celestial neighborhood on June 1, but he did not report his discovery until he had made the three separate observations needed by astronomers to calculate the orbit of a newly discovered body in the heavens. These observations he made on the nights of June 1, 7 and 20.

Newman's Comet, as the new find will be known, is of the thirteenth magnitude, so faint that it can be seen only with a powerful telescope. Like many of the smaller comets, it lacks a tail.

During the time it has been under observation, the comet has been in the neighborhood of the constellation Serpens, the Serpent. It has been moving toward the northeast, and about June 7 crossed the celestial equator, an imaginary line in the heavens directly over the earth's equator. Its position when last observed by Mr. Newman was, in the astronomical equivalents for latitude

and longitude, right ascension fifteen hours thirty-seven minutes fifteen seconds, declination seven degrees fifty-six minutes north.

The second comet in two days is the unusual astronomical record established by the discovery of one of the celestial wanderers by a young Australian astronomer named Geddes, early on Wednesday morning, June 22. The find was reported to the international clearing house for astronomical news at Copenhagen by Dr. J. M. Baldwin, director of the Melbourne Observatory.

The new Geddes comet lies in the far southern skies, well to the southeast of the constellation of the Southern Cross, and hence cannot be observed by astronomers in the northern hemisphere. It is below naked-eye visibility, being of only tenth magnitude. Its position as reported by Dr. Baldwin was right ascension nine hours fifteen minutes, declination minus eighty-four degrees thirty-six minutes.

*Science News Letter, July 2, 1932*

Fahrenheit thermometers owe their name to the inventor, Daniel Gabriel Fahrenheit, who died in 1736.