

GEOGRAPHY

# China's Vast Flood Threatens To Unite Hwang Ho and Yangtze

## Devastating Famine and Pestilence Expected to Follow As Muddy Waters Disrupt Programs of Both Peace and War



ANCESTRAL SNAKE

As freed from its stony matrix by the delicate-fingered skill of N. H. Boss, U. S. National Museum preparator, this is the most nearly complete fossil snake skeleton ever seen in this country.

geologic period immediately after that, the pliocene, which lasted from 13 million years ago until the Ice Age began, about a million years back.

Prize specimen in the collection studied by Mr. Gilmore is the practically entire skeleton of a snake embedded in a slab of shale from the Green River formation, in the northern Rockies. Because of the slenderness and fragility of snake bones, it is rare to find well-preserved fossils at all; no skeleton so nearly complete as this has ever been discovered.

Technique combining the skills of sculptor and dentist was necessary to free the fine bones from their stone matrix, but it was finally accomplished without mishap. This early invader of the American Eden was a serpent a couple of inches over a yard long. It has been given the scientific name *Boavus Idelmani*.

*Science News Letter, July 2, 1938*

A blue whale's coat of blubber is three to six inches thick all over its body.

**T**ERMING the history-making flood of China's Sorrow the worst flood disaster within the memory of man, Dr. Walter C. Lowdermilk, one of the world's foremost authorities on soil erosion, declared that there is small probability of bringing the Yellow River under control or of returning the river to its old course.

A disaster of even greater magnitude than the one which has already struck China will occur, he predicted, if the Hwang Ho, the world's worst acting river, joins the Yangtze Kiang, China's mightiest stream.

### Floods for Kiangsu

Such a junction, which some reports declare to be taking place already, will mean floods for Kiangsu province, the most populous district in China, as well as the provinces already afflicted. Kiangsu province contains Shanghai. While the city itself would probably escape, wide destruction of farmlands in the district would be made inevitable in the combined rivers' search for an outlet to the sea.

The breaches in the dykes are so wide and the river bed is so far above the surrounding delta plain that return of the stream appears impossible, Dr. Lowdermilk predicted. This appears especially true, he indicated, because of the fact that the peak of the floods does not reach the stricken lowlands until mid-July. The worst is yet to come.

Dr. Lowdermilk, who is chief of the division of research of the Soil Conservation Service, U. S. Department of Agriculture, spent five years in China, between 1922 and 1927, surveying soil erosion and flood conditions of the Yellow River for the Permanent Famine Prevention Project of the University of Nanking.

No estimate of the extent of the damage or number of lives lost directly as a result of this greatest of all catastrophes is possible at this time, but the toll is certain to run into millions, he believes. The flood is certainly far worse than any previous disaster of its kind; it already outranks the flood of 1852

when the stream last changed its course. While vouchsafing no statement as to blame for the flood or any comment on the Japanese claim that Chinese themselves breached the dykes, Dr. Lowdermilk pointed out that the war made impossible this spring the annual repairs to the dykes that wall in the river. So thin is the safety margin of this ever-mounting stream that missing repairs even for a single year can result in a great disaster. The artillery fire in the neighborhood was no help.

The Yellow River's bad acting, he indicated, might be said to go back to the Ice Age when high winds deposited over an area thousands of square miles in extent a loose, fine-grained soil known as loess. Contrary to general impressions, excessive rainfall is not the cause of the recurrent floods of the Yellow River. It is this loess, which is readily eroded away by running water and through which the Yellow River flows, that is deposited in the great delta plain hundreds of miles away, where the river slows down.

### One-Quarter Mud

Dr. Lowdermilk has found a mud content as high as 24 per cent., while another observer, Oliver L. Todd, a civil engineer with whom Dr. Lowdermilk worked on his study, found an even higher mud burden.

This enormous burden, when deposited, builds up the river bottom and, in the case of the Yellow River, not so gradually at that. Chinese have been forced to build their dykes ever higher as the river bed itself has risen, until today the river bed in many places is as high as 30 feet above the surrounding plain. Any breach in the retaining walls means a rushing wave of water engulfing the countryside.

Now that the breach has been made—there is more than one gaping hole, to be sure—putting the river back where it belongs appears to be like damming a hundred small Niagaras with only hand labor to do the job.

Joining the Yangtze Kiang, ranked already as one of the three or four greatest rivers in the world in volume of



#### IN THE ROYAL CITADEL

*A greatly enlarged model of a small section of a tropical termite "city" has been placed on display at the Buffalo Museum of Science. Interest centers in the royal chamber, where the enormous-bodied queen and her mate are attended by workers. An immature winged form is seen near upper left, and at lower right is a fully mature winged insect ready for its nuptial flight.*

water, appears to be more than possible, for the Yellow River is connected with the Yangtze through the Hwei River and the famous Grand Canal. The streams which connect the Yellow and the Hwei already flow downward from the Yellow to the Hwei.

Some idea of the vast amount of mud carried by the flood may be gained from the fact that Shantung province, now a peninsula, was once an island. The silt delta connecting the mainland and Shantung is the world's largest delta, measuring 400 miles on a side. It has been laid down by the Yellow River through the ages.

Bruised by war and battered by flood, stricken China now appears to have two new tragic trials in store for her.

The worst famine in the Far Eastern land's many centuries of periodic mass hunger and one of the worst epidemics of disease in the annals of mankind seem now to be inescapable as a result of the flood of China's Sorrow, the mighty Yellow River.

The flood of the great Hwang Ho, whether man-made or brought on by natural causes or both, is not going to recede at any time soon. It is going to get worse. Pouring into the great plain of the provinces of Honan and Shantung on the heels of the torrential rains

will be the "spring melt" from the mountains of far-off Tibet, the Yellow River's source. This peak may be expected about mid-July.

Two factors, flood and war, make the situation more serious than ever before. Cutting wide swaths through fertile farmlands as much as 30 feet below the bed of the river, the Hwang Ho is adding indescribable destruction of crops in China's granary to the extreme dislocation caused by the war waged in that region.

To the millions already made homeless by the war are being added the millions now homeless as a result of the flood. When the defeated, but not conquered, Chinese armies retreated westward, with them went uncounted millions of civilians fleeing the Japanese. Their care and, particularly, their feeding became a burden thrust upon Honan and Shantung, already burdened by having to support upwards of a million men under arms.

To this already acute food problem is added the problem of feeding those who can look forward now to nothing but a harvest of muddy water from their rice paddies and grain fields. And, it must be remembered, even in the best times, food is scanty enough in China.

It is on these facts that the expecta-

tion of a devastating famine is based. That famine will strike a population, a large portion of which are already weakened in their resistance to disease through China's semi-permanent state of mass malnutrition and as a result of the protracted war. The epidemic of disease, which may be cholera or typhus or both with dietary diseases as complication, is predicted upon the basis of the regularity with which disease follows flood and famine, particularly in a land where sanitary conditions are poor.

Reports from China during the past few months have persistently reported that Chinese refugees and soldiers alike are badly infested with typhus-carrying lice. An epidemic of typhus of major proportions is already regarded as long overdue. That such an epidemic will not take hold and spread with terrible rapidity in the severe conditions attending the flood—hunger and overcrowding among refugees of both the war and the waters—appears to be something not even the world's most enthusiastic optimist could hope.

*Science News Letter, July 2, 1938*

#### PHYSIOLOGY

### Nerve Unbalance Declared Essential Cause of Old Age

**O**LD AGE was explained in terms of lack of balance between two sets of nerves in a report by Dr. David R. Higbee of San Diego, Calif.

The balance is between the sympathetic and the parasympathetic divisions of the autonomic nervous system. This system regulates the action of the ductless glands, the blood vessels and the internal organs.

The systematic division of this nervous system, Dr. Higbee explained, is not essential to life and is functionally active under emotional, physical and biochemical crises. The parasympathetic division is "the very essence of life," he declared. It functions constantly, building up reserves in the body and carrying out the coordinated adjustments of internal organs.

These two divisions of the autonomic nervous systems are antagonistic. The healthy state of every tissue depends on a balance between them which is normally maintained.

"Old age," Dr. Higbee said, "is the expression of the permanent disintegration of this balance."

*Science News Letter, July 2, 1938*

There is some reason to think the Assyrians played the bagpipe.