

concluded, were due to prolonged droughts that killed the protecting cover of vegetation and permitted erosion for a time.

Water from the Black and Mediterranean seas, pouring out through the Strait of Gibraltar, spreads itself out through a large part of the Atlantic Ocean, Dr. H. U. Sverdrup, director of the Scripps Institution of Oceanography, stated.

The water from the Mediterranean, easily detected because it is saltier than ocean water, is found at levels between

4,000 and 6,000 feet below the surface, said Dr. Sverdrup. It spreads out through the entire North Atlantic, crosses the Equator, and can be traced past South Africa. At still greater depths water from the North Atlantic flows south, and along the bottom water from the Antarctic flows north as far as the middle of the North Atlantic.

In general, the California scientist reported, the oceanic circulations of the Atlantic and the Antarctic are better known than the water movements in the Pacific and Indian oceans.

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#### PUBLIC HEALTH

## Parran Endorses \$200,000,000 Anti-Tuberculosis Campaign

**S**URGEON GENERAL Thomas Parran, Jr., of the United States Public Health Service endorsed a \$200,000,000 drive by the National Tuberculosis Association for the complete eradication of the "white plague" in the United States.

The plan for tuberculosis control, worked out by a committee headed by Homer Folks, executive secretary of the State Charities Aid Association of New York, was adopted by the association at its thirty-fourth annual meeting in Los Angeles.

The suggested program, to start in 1939, would require \$140,000,000 for the construction of 40,000 hospital beds for tuberculosis patients. Funds for this job, it was indicated, would come from a variety of sources, including state governments and Federal funds from such sources as the Works Progress Administration, which has already provided hospitals and equipment totaling nearly 10,000 beds.

### Industry Blamed

The unwillingness of industry to re-employ ex-tuberculous persons may force the adoption of an expensive Federal and state pension system, Edward Hochhauser of New York's Altro Workshops, an institution for providing work for arrested cases of tuberculosis, warned.

Speaking before the National Tuberculosis Association, Mr. Hochhauser termed such a refusal to rehire former sufferers from the "white plague" unsound economically and sociologically.

Tuberculosis no longer should be

looked upon as a permanently disabling disease and more attention must be paid to rehabilitation work, it was said generally before the association, holding a symposium on handling of arrested or cured cases.

Scoring industry's unwillingness to employ these people, Mr. Hochhauser declared:

"The testimony of industry can now be added to that of sheltered workshops. Responses from several hundred employers indicate that a very substantial number of employable tuberculous go back to their old jobs or some readjusted job with their old employer, many on part time.

"Sheltered workshops and colonies for patients have demonstrated that men and women may gradually return to normal work with partial or complete self-support."

### Asks Social Security

A plea for Social Security relief for the families of tuberculosis victims was made by Homer Folks.

Speaking at a luncheon meeting of the National Conference of Tuberculosis Secretaries, Mr. Folks called suitable relief for the families of sufferers an essential factor in work remaining to be done in eradicating the disease.

### Wants Control for Homeless

Some form of Federal control for homeless, transient tuberculosis sufferers who spread the disease in the communities they visit was urged.

Thousands of homeless men and

women, ill with the "white plague," are a constant menace to healthy communities throughout the country, Dr. Halbert L. Dunn of the U. S. Bureau of the Census, declared.

Arizona, Colorado and New Mexico, meccas for sufferers from tuberculosis, face particularly acute problems in dealing with the disease, Dr. Dunn stated, because of the large number of out-of-state sufferers who flock there.

The Federal control suggestion was made by Dr. H. E. Kleinschmidt, director of health education of the association, and James G. Stone and Zdenka Buben of Los Angeles. The transient problem is complicated. Dr. Kleinschmidt added, because of the difficulty communities have in caring for their own residents.

"The non-resident is scorned and shoved from place to place," he continued. "What communities do not seem to realize is that the tuberculosis wanderer sows the seeds of his disease in countless stable communities.

"The only hope of solution lies in some form of Federal control or co-operation for the footloose patient, who, although he has forfeited his rights of residency, is yet an American citizen."

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#### PALEONTOLOGY

## Earth's Earliest Edens Untroubled by Serpents

**S**NAKES are a comparatively new thing under the sun. In the Age of Reptiles, that ended only 50 or 60 million years ago, they were almost unknown. Only the last of the dinosaurs, that lived in Cretaceous times, ever had a chance to see snakes, and those were of the earliest models and probably not numerous at that. At least, their fossils are exceedingly rare today.

Data on the relative recency of snakes are included in a new monograph on Fossil Snakes of North America, written by Charles W. Gilmore of the U. S. National Museum and published by the Geological Society of America.

Snakes really began to get down to business on this planet at about the same time that mammals started their long climb to domination. Newcomers together, the snakes and we.

The first snakes were non-poisonous, resembling modern blacksnakes and boas in that respect. Venomous species did not appear, so far as the present record shows, until upper miocene time, roughly from 13 to 18 million years ago. First rattlesnakes began buzzing in the

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*.

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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