

MEDICINE

Medical Science Goes on In War-Torn Remote China

SCIENTIFIC workers are carrying on in war-torn China under difficult and trying circumstances it is evidenced by a letter from Dr. Pei-sung Tang which his former teacher, Prof. William S. Cooper of the University of Minnesota sent to the journal *Science*. Highlights from Tsing Hua University, Kunming, Yunnan Province, remote corner of China: After the fall of Nanking, an arduous trip for 16 days on the crowded deck of an overloaded steamer on the treacherous Yangtze during the coldest part of the year plus motoring over difficult robber-infested highways to Kweiyang to help start a medical school from nothing, absolutely nothing, except a "hospital" of four beds and a group of determined men. Six months later a hospital of over 100 beds, laboratories which compare well with any school in China in equipment, most of the apparatus improvised, such as the hand-made pneumothorax machine rigged up from junk shop parts. Next a call to Tsing Hua, his alma mater, to direct exploitation of native materials for industries. Castor oil was substituted for imported mineral oil so successfully that he became known in southwest China as the "Castor Oil Man." Present problem: substitution of sumac wax for paraffin.

Science News Letter, March 23, 1940

POPULATION

Record-Breaking Migration Now Joined by Finns

AS re-shuffling of the world's people continues, with 400,000 Finns as the latest victims, it grows evident that this age will be remembered in history for an amazing happening: The greatest mass migrations the world has ever known are occurring in our time.

A few years ago, one geographer stated that the time when huge mass migrations of population might be expected to occur was over. The world seemed to be settling down.

Now, in China alone, the Japanese invasion is credited with driving millions of refugees westward into China's interior. Forty million Chinese have moved west since the invasion started, according to one estimate. This twentieth century Oriental migration dwarfs all giant armies and hordes of history, from Xerxes to Jenghiz Khan.

But to that unimaginable wave of

Chinese, must be added millions of Europeans left homeless or stranded by wars, called "home to the Reich," or otherwise shifted to suit Europe's leaders. Estimates of these uprooted millions vary considerably, because of difficulty of counting heads in such troubled times. Political refugees may mount to 20,000,000 before the war ends, some observers fearfully predict.

Our own country, far from war zones, is adding its bit to the shifting of masses of people, with such conditions as the evacuation of Dust Bowl areas and the much-discussed armies of wandering farm workers in the West.

Not until the world settles down again, temporarily, at least, can the full force of the migrations of the twentieth century be appraised. It will make a stirring and terrible chapter of our history.

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PSYCHOLOGY

Movements Like Swimming Made By Young Infants

THE old tradition that a human baby dropped into deep water will swim is justified by scientific experiment, provided the infant is young enough.

Babies a few days or weeks old were submerged in water in the test conducted by Dr. Myrtle B. McGraw, of the Normal Child Development Clinic at Babies Hospital, New York. They made rhythmic coordinated movements of both arms and legs "resembling swimming." The very young infant has a reflex which stops his breathing when he is under water.

But after a few months the story is different. The older infant placed in water struggles in disorganized fashion. He tries to turn over on his back. He cannot control his breathing.

Towards the end of the second year, the baby has still another way of responding to the new experience of deep water. Now he makes deliberate swimming movements especially with his legs.

The babies taking part in Dr. McGraw's experiment ranged in age from only eleven days to two and a half years. For comparison she also tested animals including opossum, kitten, rat, rabbit, guinea pig, and monkey. All these lower animals made the same rhythmic movements of arms and legs that are characteristic of the newborn human baby.

In this Dr. McGraw sees new evidence of the evolution of man. A complete report of her experiments was made to the *Journal of Pediatrics*.

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IN SCIEN

MEDICINE

More Anti-Typhus Vaccine Being Shipped to Hungary

ENOUGH vaccine to protect 5,000 persons from typhus fever will leave for Hungary, to battle the expected spring typhus epidemic, on the next boat sailing from these shores, it was learned at the National Institute of Health of the U. S. Public Health Service.

This vaccine, like 3,000 doses sent previously, was made by Dr. Herald R. Cox and E. John Bell, of the Institute's Rocky Mountain Laboratory at Hamilton, Mont., headquarters for the federal health service's fight against another deadly disease, Rocky Mountain spotted fever.

The anti-typhus vaccine was made from typhus fever virus raised on hen's eggs. It is being sent to Hungary at the request of Dr. Bela Johan, Hungary's assistant secretary of the interior.

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PLANT PHYSIOLOGY

Sulfur Dioxide Gas Damages Foliage

A LEAKY coil in your refrigerator may kill leaves on your yard trees and shrubbery and make a dead patch in your lawn, if the gas used in the compression system is sulfur dioxide, favored by manufacturers of certain makes of electric refrigerators.

A case of this kind that occurred is reported by Drs. Malcolm A. McKenzie and Linus H. Jones of Massachusetts State College (*Science*, March 8).

A repair man, called to take care of the leaky coil, ran a tube from it out into the open air to carry the acrid fumes of the gas out of the house. Subsequently the damage to the foliage was noticed, over an area of about 500 square feet. No permanent harm, however, was done to either grass or shrubbery by the relatively short exposure to the gas.

Sulfur dioxide gas probably causes its harmful effects by changing into sulfuric acid in the presence of water and oxygen.

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CE FIELDS

BIOLOGY

One-Celled Animals Mate After Nuclei Are Removed

THE LITTLE one-celled animals known as *Paramecia* or slipper-animalcules are able to go through their characteristic mating reactions even when their nuclei have been removed, it has been discovered by Prof. Vance Tartar and Dr. Tze-Tuan Chen, in researches conducted at both Yale University and the University of California at Los Angeles (*Science*, March 8).

Since a cell's nucleus is commonly regarded as the controlling center of its physiological activities, ability of enucleated cells to mate is almost as remarkable as a like ability on the part of higher animals with their heads cut off. These cells, it is stated in the report, can live as long as four days after the nuclei have been removed.

It is possible to remove nuclei from such small creatures by the use of a device known as a micromanipulator, which can cut away fractions of cells with exceedingly fine-tipped glass needles controlled by delicately adjusted screw-threaded mechanism. Such micro-surgery is performed while the operator watches through the powerful lenses of his microscope.

Science News Letter, March 23, 1940

AERONAUTICS

Giant Plane Heating Plant Would Warm Large House

THE HEATING plant installed on the larger airline transports for passenger comfort is big enough to heat a ten-room house, W. W. Davies of the United Air Lines Transport Corporation, told the National Aeronautic Meeting, sponsored by the Society of Automotive Engineers.

Mr. Davies' report, entitled "Passenger Comfort in Commercial Aviation", described the growth of commercial passenger-carrying by air.

The lowering of the noise level within a plane's cabin has progressed from the early days when cotton in the ears was the only protective measure to the state where passengers on sleeper planes are

now cautioned to talk quietly in order not to disturb those asleep, Mr. Davies said.

One big problem of passenger comfort, yet only partially solved, is the elimination of glare of sunlight off the wings of a transport plane. Screens that block off the glare usually cut off unobjectionable light too and there is little enough light entering through the small cabin windows as it is.

Mr. Davies said that large transports of the future may have a small grill for preparing quick dishes but that the bulk of the food served aloft would still be prepared beforehand and carried in hot or refrigerated food boxes as it is now.

As the altitude of airplane travel climbs oxygen equipment will be incorporated into aircraft construction. Several types of oxygen masks have been devised which are receiving a thorough trial. Some people nevertheless appear to have an aversion to the use of an oxygen mask, however compact and inconspicuous it may be. The real solution will come when the cruising height of planes mounts to 20,000 feet where it becomes economical and practical to seal the cabin and create a synthetic atmosphere equivalent to low flight altitudes.

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MEDICINE

New Chemical Checks Streptococcus Viridans

A NEW chemical agent successful in protecting mice against streptococcus viridans, a germ unconquered by the sulfanilamide remedies, was announced by Dr. O. M. Gruhzit, of Parke, Davis and Company, Detroit, at the meeting of the Federation of American Societies for Experimental Biology and Medicine in New Orleans.

The new chemical remedy is sodium paranitrobenzoate. Although not yet tried on human patients, it may find a place in the treatment of certain diseases caused by streptococcus viridans, such as ulcerative or malignant endocarditis, a form of heart disease.

Sodium paranitrobenzoate is relatively non-toxic to animals. Its therapeutic (curative) effect in mice infected with streptococcus viridans is of the same magnitude as produced by sulfanilamide in the beta hemolytic streptococcus infections. The sodium paranitrobenzoate has little or no effect in the latter type of streptococcus nor in pneumococcus infections.

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AERONAUTICS

Press in Airplane Plant Stretches Metal in Sheets

LATEST in aircraft manufacturing machinery is a metal stretching press in use at the Martin plant near Baltimore. For speedy forming of large, thin metal sheets used as engine cowlings and elsewhere in airplane construction, the stretching press does work formerly the job of a power hammer or a man with a hand hammer. The sheet of metal to be stretched is pressed hydraulically against the sheet from below, firmly and permanently transferring its shape to the metallic sheet.

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GENERAL SCIENCE

Women to Use Awards For Science Progress

SCIENTIFIC research, from handling giant cyclotrons to saving lives of newborn babies, will engage five out of eleven women scholars receiving fellowships from the American Association of University Women. The award of \$1,500 to each woman will make possible varied research projects.

Dr. Eleanor P. Cheydeur, pediatric interne at Bellevue Hospital in New York, will investigate some problem relating to death of newborn infants.

"There has been a definite reduction in the United States during the past 20 years in mortality for infants under one year of age," she stated, commenting on her proposed research. "But there has been little reduction in the mortality of infants under two weeks of age."

Using a cyclotron, huge laboratory machine which artificially produces radioactive elements, Dr. Herta Leng, physicist, who has come to this country from the University of Vienna, will study permeability of cells in plant and animal life. Dr. Leng will work at Purdue University, in Indiana.

Studying opossum ova, Dr. Elizabeth Lloyd White of the University of Pennsylvania will seek to learn under what conditions and for how long different stages of the mammal egg can be kept growing in the laboratory.

Endocrine glands will engage the attention of Dr. Margaret K. Deringer at the embryology laboratory of the Carnegie Institution, in Baltimore.

A teacher of chemistry at Rockford, Illinois, Dr. Donna Price will work on "the normal modes of vibration of the paraffin hydrocarbons."

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