

production and maintained their body temperature.

When the dogs breathed gas mixtures with lowered oxygen content through their masks the shivering soon stopped and their metabolism returned to the basal level and the body temperature fell about two degrees Centigrade per hour. Greatest total drop in temperature was six degrees Centigrade.

The temperature fell gradually, reported the Harvard scientists, until the dogs were switched over to breathing the air in the cold room. Then the body's metabolism suddenly increased four times and within a half hour the body temperature was back to normal.

"The ability of the dog to withstand low oxygen depends more on the toughness of his central nervous system than on an unusual ability to take oxygen in the lungs," conclude the scientists.

Science News Letter, November 11, 1939

Novel Oil Prospecting

A METHOD of oil prospecting by measuring temperatures in the earth at depths of 100 to 200 feet was described by Melvin C. Terry.

It is not necessary to take the temperature measurements at extreme depths because the intrusion of high conductivity materials will disturb the pattern of normal temperature gradients.

Working over the ground of producing Texas oil fields at Hastings and Friendswood, it was found that the line of constant temperature at 23 degrees Centigrade ran about 100 feet higher over the oil salt domes than it did in the region between them.

Science News Letter, November 11, 1939

New Theory on "Hot Spots"

THE TRADITIONAL explanation of the skin's sensitivity to heat and cold was discounted by new findings reported by Lehigh University's Dr. William Leroy Jenkins, instructor in psychology.

The thought that temperature sensitivity of the skin was concentrated in small warm and cold spot receptors arose from the discovery that the locations of these spots could be mapped with a small stimulator.

Dr. Jenkins has carried forward the mapping technique and by the process of seriatim, or repeated mapping, has found that the single warm and cold spots do not exist.

"Seriatim mapping," Dr. Jenkins declared, "reveals hills and valleys of sensitivity. Warm and cold spots are found

only in clusters and mapping with smaller and smaller sizes does not resolve these clusters into discrete units; they simply disintegrate without being resolved."

As a new and better way to explain the skin's temperature sensitivity, Dr. Jenkins proposes a "concentration hypothesis" which suggests that the sensitivity depends primarily upon the concentration of the receptors. Where the receptors are highly concentrated, the skin's sensitivity is high. Where they are sparse, the sensitivity is low. According to this view, the traditional warm and cold spots are merely peaks of sensitivity and do not mark the locus of individual receptors.

Science News Letter, November 11, 1939

PUBLIC HEALTH—ECONOMICS

Drought in Far East Creates Serious Food Problems

DROUGHT in Japan and Korea, severely curtailing production of vegetables and rice, has created serious food problems, reports Kurt Bloch, writing in the *Far Eastern Survey* (Oct. 25). The drought has also resulted in severe damage to the fresh-water fisheries, while the production of sea fisheries has been cut

down by restriction on gasoline sales to the fishermen, forcing them to give up use of motor power for slower means.

In the meantime, the occupied portions of China have begun to present serious competition for existing food supplies. North China has always been a heavy wheat-consuming country, but before the outbreak of hostilities had got on a self-sustaining basis so far as this grain was concerned. Now North China imports 800,000 tons of wheat in a year—which means a staggering load on "yen bloc" finances.

Science News Letter, November 11, 1939

GENERAL SCIENCE

Scientists Shop and Pack For Year in Antarctic

See Front Cover

HOUSEWIVES will appreciate the problem of the U. S. Antarctic Expedition setting sail for the other end of the earth: Shopping for supplies for more than a year for two little communities, two base camps, plus exploring parties on the trail—1200 tons of everything well-ordered pioneering households will need, including the houses.

All are boxed securely against Antarctic cold and packaged so strong men can unload under adverse conditions.



COAL, TANKS AND MEN FOR EXPLORATION

The two leaders of the base camps to be laid down in Antarctica by Uncle Sam, Richard B. Black, East Base commander (left) and Dr. Paul A. Siple, West Base commander, inspect the converted Army tanks that will be used as "iron dogs" for snow travel. In the background, the "North Star," being loaded at Boston Army Base. Piles of bagged coal at left.



STEVEDORE-SCIENTISTS

Members of the U. S. Antarctic Expedition led by Admiral Byrd, pause for a moment during the loading of the U. S. Coast Guard vessel "North Star" at Boston Army Base. Left to right: Murray A. Wiener, physicist; Dr. R. G. Frazer, physician of the West Base camp to be established in Antarctica; Malcolm Davis, ornithologist of the National Zoological Park, Washington, D. C., who will capture penguins and seals; and Ennis C. Helm, official photographer for Admiral Byrd.

They are stowed in the little U. S. Coast Guard ship, *North Star*, an Arctic veteran. Each item is so packaged that it can be found and unshipped in orderly and methodical manner when and where needed.

Each box, each package is labeled with a large letter in red or green paint—F for food, B for bedding, etc. with red

meaning that west base is the destination, green, east base. Not all rude discomforts for these pioneers, a stack of deluxe mattresses with inner springs claiming service to beauty are among the cargo in Army Base's warehouses at Boston, stevedored upon the staunch *North Star* by scientists and crew alike.

Science News Letter, November 11, 1939

MILITARY SCIENCE

\$100,000,000 Spent for ARP By England Since 1938 Crisis

Aimed at Relative Protection to Greatest Number Rather Than Complete Protection for Only a Few

SINCE September, 1938, when the first real war scares came, Great Britain has spent \$100,000,000 for its Air Raid Precautions (ARP). Out of this hundred million has come gas masks for the whole civilian population and tested plans for the construction of new air-raid shelters and the reconstruction of existing buildings for the same purpose.

What a city like London will be like

if German bombers are turned from truly military objectives to unrestricted bombardment of the city can be pictured from the authoritative report just completed by Maj. W. J. Quentin, Military Intelligence Reserve, U. S. Army. A civil engineer, Major Quentin has abstracted his report for Civil Engineering.

ARP, says Major Quentin, has been much criticized for its failure to develop quickly more bomb-proof shelters. Rath-

er, and rightly, it has aimed at giving relative protection to the greatest number of people rather than complete protection to only a few. It is estimated, Major Quentin says, that despite the evacuation of 1,500,000 people from London some 6,000,000 persons will still remain to carry on the city's jobs.

For strong buildings the ARP urges 4½-inch-thick slabs of concrete on the roof to check small incendiary bombs of the kind that turned Warsaw into a shambles. All other buildings with flat roofs will have them covered with three inches of sand to ward off fire risk. The top floors, it is urged too, will be cleared of all combustible materials and similarly sanded.

New buildings going up have new "demolition slabs" placed near the third floor to make heavier bombs burst there and before they reach basement air-raid shelters.

Guiding principle of new construction is that used in earthquake-proof buildings where exterior walls serve in no way in the load-bearing.

Against very heavy bombs the ARP realizes there can be little protection on direct hits. What they are aiming for is protection against the blasts and splinters from a 500-pound bomb bursting 50 feet away. It has been shown that it takes sand bags two feet thick to accomplish this.

Science News Letter, November 11, 1939

GENERAL SCIENCE

Scientists Arranging For Interchange of Journals

DETERMINED to keep the streams of knowledge flowing between America and the nations at war, American scientists and scholars are checking carefully to be sure that the interchange of journals of research interest continues.

Whenever an important journal is not received, the American Documentation Institute in Washington is to be notified. This agency, created by scientific and scholarly organizations to aid in handling joint problems concerning the literature of intellectual activities, will follow the matter with the State Department's aid, surmounting so far as possible such obstacles as interrupted transportation, embargoes and censorship.

Declaration: "The principle should be established, if possible, that the materials of research having no relation to war shall continue to pass freely, regardless of the countries of origin or destination."

Science News Letter, November 11, 1939