

in the blood, as yet unidentified but believed responsible for physical changes resulting from emotional upsets, was announced.

Encouraging results in cases of advanced syphilis followed treatment by a new series of bismuth compounds, such as dihydroxypropyl bismuthate, which were taken by mouth instead of intramuscular injections.

Dicumarol was declared to be apparently effective in preventing post-operative thrombophlebitis and pulmonary embolism.

During the Tunisian campaign, certain evacuation hospitals returned 60% of the neuropsychiatric casualties to full combat duty within four days of admission; of these returned men, 89% performed effectively.

The incidence of pilonidal disease was believed to be increased in the armed forces because of the trauma occasioned by riding in jeeps and tanks.

Intravenous administration of fluorescein was used as a means of measuring arterial obstruction and efficiency of arterial blood flow in occlusive peripheral arterial disease.

Danger of injuring the brain by the fast treatment of syphilis with large doses of arsenicals may be decreased through use of chalcone, a chemical from lemon peel, experiments suggested.

Arsenical treatment for syphilis, amebic illness such as dysentery and trypanosome diseases like sleeping sickness, may be made safer by the use of a vitamin, para-aminobenzoic acid, it was reported.

Seven vitamins, sister vitamins, were discovered for biotin, believed by some to play an important role in cancer.

Diet was linked to malaria by the discovery that chickens and ducks deficient in the vitamin, biotin, developed a more severe type of malaria than did fowl on a normal diet.

Carrots were found to prevent ill effects of high altitudes in experiments on animals.

Incidence of two vitamin hunger diseases, beriberi and pellagra, was reported to have decreased through enrichment of white bread and flour with niacin and thiamin.

The practical utility of pine-needle tea as a source of vitamin C, the scurvy-preventer, was announced by Russian botanists.

A new, unidentified disease, bullis fever, thought to be transmitted to man through tick bites, was discovered and reported to be increasing in frequency and severity in the San Antonio area.

A new, speedy, low-cost pregnancy test, using rats instead of rabbits as test animals, was developed.

Recovery from severe burns is decisively influenced by the surrounding temperature during the first 24 hours, the most favorable temperature being about 75 degrees Fahrenheit, laboratory tests with animals showed.

The danger of jaundice in persons who get human blood serum for transfusions or protective inoculations might be averted by ultraviolet irradiation of the blood or serum, experiments showed.

Treatment for shock in extensive burns, which in man is the cause of 60% to 80% of the deaths within the first few days, was reported successful in laboratory tests by use of a salt water drink.

A new, finely equipped cancer clinic was

opened in Guadalajara, Mexico, during the first Mexican Cancer Congress.

Dr. Florence Seibert of the Henry Phipps Institute, for her research on the chemistry of tuberculosis, won the first \$2,500 Achievement Award, established by the American Association of University Women.

Dr. Charles B. Huggins, University of Chicago professor of surgery, was awarded the first Charles L. Mayer Award of \$2,000 in recognition of his work on endocrine control of prostatic cancer.

The \$1,000 annual award by Mead Johnson and Company for researches on the B complex vitamins went to Prof. Vincent du Vigneaud of Cornell University Medical School and associates for their work on the structure of biotin.

PSYCHOLOGY AND PSYCHIATRY

Sustained Strain Found To Cause War Neuroses

► SUSTAINED physical and mental strain caused a group psychiatric war malady, "Guadalcanal neurosis," treated with quiet, food and absolute rest, while terrific but brief strain as in the sinking of the aircraft carrier *Wasp* caused no neurosis, not even panic.

A chip-on-the-shoulder defensiveness of men from crowded districts of some large cities as well as some rural regions, "Brooklyn syndrome," was identified and differentiated from psychopathic personality.

Because most people cannot recognize their own handwriting, silhouette, or voice, an individual's criticism of these expressions provided a new method of exploring the unconscious.

War neurosis, caused by strong emotional conflict between self-preservation and duty, was found to be the most common mental casualty.

The tendency of white rats to have convulsive seizures in response to loud tones did not seem to be inherited in any simple way.

Several methods of group psychotherapy were developed, especially for use with war patients.

A feeling of inferiority was found to be associated with high intelligence and social pressures, and is not necessarily due to actual inferiority.

Fatigue was objectively measured by the period of time an individual could continue to feel the vibration of a special tuning fork.

Red goggles were developed with which eyes can be adapted for night vision more quickly in a lighted room than in complete darkness.

Undernourished children, under 4 years, score as much as 18 points higher on IQ tests after they have been given an adequate diet.

Chemicals widely used in birth control were found in animal experiments to affect adversely the intelligence of young later born.

More than 40 Rumor Clinics for the tracking down and analysis of wartime rumors were established throughout the United States and Canada.

That morale is not a single trait but is composed of several relatively independent

factors was indicated by a survey of the effects of war on 2,000 high school pupils; 12 such valid components were identified in another study of 2,539 persons.

The activity in single fibers of the auditory nerve of cats was recorded, the results thus obtained supporting a "place" theory of hearing.

The discovery that the pitch of a tone in one ear can be changed by introducing a tone of the same frequency in the other ear has important implications for a theory of hearing.

Persons whose hearing fatigues most rapidly were found most likely to have it permanently impaired by loud noises; a discovery which makes it possible to decrease the danger of "Boiler-Makers' Deafness."

The fact that rats apparently hear octaves, as we do, was shown when animals trained to run to food when a tone of 10 kc. sounded, were more likely to run on 5 kc. than on 4 or 6 kc.

Adaptation to a bitter taste was discovered to increase the sensitivity to sour and salt, and sometimes to sweet.

Headlines emphasizing the bad news were found to stimulate action in the war effort more effectively than rosy headlines.

Analysis by psychologists of Japanese propaganda appeals led to recommendations to our government for counter-propaganda.

That anti-semitism is an important problem for the United States was indicated by a national survey showing that over 50% believe that "the Jews have too much influence in this country."

Zoot-suit riots brought to attention a complex youth movement composed of three different groups, only one of which is of the delinquent gang type.

The war brought about conditions such that half a million children under 16 were working part or full time.

A "plague of questionnaires" which developed as an attempt of Government to consult the public directly, was relieved by scientific study of all government questionnaires and the application of psychological techniques to make them more useful.

Persons remember the substance of learned material better than its exact form, it was found, but the curve of forgetting for substance and verbatim learning are similar in form; rapid forgetting at first, and less as time goes by.

Courses in "How to Study" were discovered to be of value for average students, rather than for the superior or inferior.

Changes in the pupil of the eye were found to betray when a person is lying, but it is not a reliable test.

Newts were found to be unable to adjust to an upside-down world, thus differing from humans, who become adapted time goes by.

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AGRICULTURE

200,000 Cinchona Plants Sent to Neighbor Republics

See Front Cover

► ABOUT 200,000 quinine-bearing cinchona seedlings, grown from seeds rescued from the Philippines during in-

vasion, have been sent to neighbor republics for planting, Benjamin Y. Morrison, principal horticulturist in charge of plant exploration and introduction at the U. S. Bureau of Plant Industry, announced recently.

The picture on the cover of this SCIENCE NEWS LETTER, taken by Fremont Davis, Science Service staff photographer, shows some of the cinchona seedlings growing on a greenhouse bench at the Department of Agriculture research station at Glendale, Md.

Dr. Arthur Fischer, now a colonel in the U. S. Army, is the man responsible for this quinine pioneering, having worked for years with cinchona in the Philippines. After invasion, Col. Fischer flew back to the islands to bring out the high-quality seeds that had been accumulated there. These were delivered with great care and secrecy to the U. S. Department of Agriculture.

Together with a second shipment that arrived later, these seeds will assure up to 2,500,000 cinchona plants.

Seeds sown in the great greenhouses

of the Bureau of Plant Industry were ready within six months to be flown to various countries in Latin America where they should grow well.

"These shipments represented something special," Mr. Morrison said, "in that the plants had been raised for airplane travel. The seeds had been sown on screened sphagnum moss and then transplanted into moss for growing on to shipment size, which is about an eight-inch height."

The moss not only has a very light weight for shipping, but does not allow growth of any of the common organisms that cause "damping off," the worst enemy of seedbeds.

Plants are now growing in Puerto Rico, El Salvador, Nicaragua, Ecuador and Peru. More hundreds of thousands are being readied.

"At the present time," Mr. Morrison reported, "while we promote the former routines, we are pushing ahead on various adjustments that need to be made because certain supplies are no longer available."

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Do You Know?

The tail of a *comet* always points away from the sun, due to radiation pressure.

Bituminous *coal* is the source of about one-half the mechanical energy produced in the United States.

First knowledge of cosmic rays came through the discovery that atmospheric air can conduct electricity.

Fresh *fish* may be recognized by its firm and elastic flesh, scales that cling to the skin in most species, reddish gills free from disagreeable odor, and eyes bright and full.

More than four times as much 100-octane aviation *gasoline* is produced now as 18 months ago; with new equipment soon ready for use nearly twice today's production will be possible.

Ancient Romans obtained *copper* from Cyprus Island, now a British stronghold in the eastern Mediterranean, called it "aes cyprium," from which the names of both Cyprus and copper are derived.

Japan is reported to be making *cloth* for military uniforms from Manila hemp; the hemp is cut into very short pieces, treated with caustic soda, mixed with paper pulp, and twisted into a thread.

A new type of aircraft *propeller* has a core of metal with a covering of hard rubber into which bubbles of gas have been blown; over this hard rubber sponge is a shell of rubber and neoprene, polished and lacquered.

The *leech*, used in enormous numbers a century ago as bloodsuckers in medical practice, withdrew about a half ounce of blood which it stored in its many crops or stomachs, and on which it could live for a year.

The deeper note of the *buzz* of the male mosquito (*Culex pipiens*) is due to the rapidity of the wing-strokes, while the shriller buzz of the female is due to the vibration of the tense membranes at the openings of some of the breathing tubes.

SAFETY

Safety in the Army

➤ SAFETY for soldiers and safety for shop workers on Army equipment were discussed by Maj. Ralph W. Applegate stationed at the War Department, Washington, D. C., at a recent meeting.

"Safety is the fundamental component of all training activities," he said, speaking of the training of soldiers. "The number of safety devices employed by the Army runs into millions.

"It is, of course, evident that the primary function in combat safety is to acquaint our troops with the handling of guns, planes, tanks and other equipment in order that they may insure their own safety from attack and from accidents. Safety in the construction of these weapons is also vital.

"One of the largest jobs during the training period," Major Applegate continued, "is to condition the soldier mentally for his own safety during combat."

The soldier is taught how to handle himself in actual battle conditions by training in simulated battles accompanied by full battle sounds. He is taught how to protect himself from enemy attack in every practical way. He is taught the sounds of approaching planes, bombs and shells, and how to take cover

for his own safety. He is taught how to handle rifles and other equipment safely. He is acquainted with all types of booby traps and mines the enemy might use.

The number of safety measures incorporated into the construction of all types of projectors and ammunition is amazing, Major Applegate declared.

Shells are equipped with special safety devices so that the fuse will not be energized while the projectile is still in the barrel. Aerial bombs are provided both with an arming wire and an arming vane. The combination prevents a bomb from exploding until it has fallen a prescribed distance. Tank drivers find their way by the use of 180-degree revolving periscopes. Tank heavy guns are equipped with recoil guards to prevent injury to the crew by recoil action.

The Army, appreciating that industrial accidents slow up war production, has organized a safety program to apply to plants with Army contracts. Several hundred inspectors are already visiting war factories. Among them are trained safety engineers and others who have received accelerated training under these engineers.

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