

Tens of thousands of workers will doubtless accomplish their war-production tasks and at the end go home to the works of peace, little suspecting

how they were protected from becoming home-front casualties by the unobtrusive work of a few quiet men.

Science News Letter, July 31, 1943

RADIO

Marconi Award Given

East St. Louis and Johnstown, Pa., boys tie for scholarship carrying two years free tuition at School of Radio and Communication Engineering.

► FINDING it impossible to decide between the two top-ranking contestants in a nation-wide competition for the annual Marconi Memorial Scholarships offered by the Veteran Wireless Operators Association, a tie was declared by the judges. As a result, two high school graduates, Frederic Corbin Leiner of 3011 Forest Place, East St. Louis, Ill., and Francis Herbert Horne of 1261 Almere, Johnstown, Pa., will receive two years of free tuition at the RCA Institutes' School of Radio and Communication Engineering.

The Marconi Scholarships were set up by the VWOA as a living memorial to the inventor of radio. The contest is open to all boys and girls who are high school graduates and are members of Science Clubs of America or the American Institute Science and Engineering Clubs.

Both of the award winners are amateur radio operators—a purely coincidental finding. Leiner, the East St. Louis lad, first became interested in radio through association with a local amateur radio operator. He has built both transmitters and receivers. Using old parts, he built a short wave receiver with which he has copied messages from every continent and more than 60 countries. He also helped form the radio club at East St. Louis High School under sponsorship of J. W. Galbreath, teacher. Leiner's ambition is to become a naval radio engineer.

Although only 17 years of age, Francis H. Horne, the other winner, already knows how to fly, has his own primary training glider, was awarded honorary membership in the Pennsylvania Academy of Science for his science activities in Johnstown High School and also received the Bausch and Lomb science award on graduation. He was president of the science club sponsored by his teacher, Miss Sophia M. Moiles, who last year placed two winners in the

national Science Talent Search. Horne is working as an inspector for the U. S. Signal Corps at the American Jewels Corporation, Attleboro, Mass.

Runner up in this contest is Lothar Shnitkin, a German refugee, in this country only five years. A graduate of Brooklyn Technical High School, he receives a special award, a one year complete course in television radio engineering at the Midland Radio Schools, Kansas City, Mo. This school has no civilian classes at present so the award will be held in abeyance for the duration. Meanwhile a home study course will be provided. Shnitkin's high school record is something of which anyone would be proud; nothing less than 100% in his regent's examinations in trigonometry, plane and solid geometry. His science club sponsor was Simon A. Weissman.

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PUBLIC HEALTH

Infantile Paralysis Cases Continue to Increase

► THE INCREASE in cases of infantile paralysis in the Southwest continues, latest reports from state health officers to the U. S. Public Health Service show. For the week ending July 17, the total for the nation was 297. For the previous week it was 244.

In Texas cases increased from 90 the week of July 10, to 102 the week of July 17. In California the increase was from 75 to 90. Arkansas reported an increase from three to seven cases and Oklahoma 39, the latter being a decrease from the previous week's figure of 44. Only other increases were: Kansas, from five to seven and New York State, from five to 11.

An outbreak of a mild type of influenza was reported by the health officer of Honolulu, where between June 16 and July 10 there have been 4,177 cases. Health authorities recall

that two years ago an influenza outbreak started on the Pacific Coast two or three weeks after one in Honolulu in October. Whether this current Honolulu outbreak will spread to the mainland, of course, cannot be predicted.

The total urban death rate as reported at the Census Bureau was, during the week of July 10, below the three-year average for the first time this year.

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PUBLIC HEALTH

Rules Given to Prevent Infantile Paralysis Spread

► THIS IS the season when infantile paralysis epidemics are most likely to occur. There is no sure way of preventing this disease as yet, but if there are cases in your community, certain things can be done which might limit its spread. These, Dr. Philip M. Stimson, of Cornell University Medical College, reports (*Journal, American Medical Association*, July 10) are:

Avoid using any water that is possibly contaminated with sewage for either drinking, swimming or washing utensils. Doctors know that sewage can carry the infantile paralysis germs considerable distances and for an appreciable time.

Avoid exhaustion from exertion or chilling. Overexertion and chilling during the incubation period tend to make the oncoming sickness worse.

Avoid injury to the lining membranes of nose and throat, such as that resulting from a tonsil operation. Exposure to infantile paralysis soon after tonsil removal is likely to result in a severe, even fatal attack.

Treat every minor illness as a possible case of infantile paralysis, particularly if there is fever, headache and some spasm of the neck, spine and hamstrings. Very mild cases without definite paralysis are much more numerous than the cases with paralysis. Patients suspected of having this disease should be kept in bed quietly for several days and not allowed up until a competent physician or health authority says that they are well.

Try to keep home and workplaces and their surroundings in good sanitary condition and particularly destroy flies and their breeding places. Flies can carry the infantile paralysis germ, though it has not yet been proved that they can carry enough to make people sick with the disease.

"Avoid unnecessary physical contacts with other people, wash hands carefully before eating, and don't put unclean objects in the mouth," warns Dr. Stimson. "We know that many healthy people carry the virus in their intestines and that for some cases, perhaps most,

the port of entry of the infection is the mouth.

"Don't prescribe or take drugs or chemicals that are intended to protect against the disease. As yet we know of none that will do this."

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HERPETOLOGY

Cobras Don't Spit

They squirt their venom through fang cavities modified so that the thin jet is thrown straight ahead. Hits can be scored at six to twelve feet.

► **SPITTING COBRAS** do not really spit their venom, in their peculiar brand of chemical warfare; they squirt it through fang cavities modified in such a way that the thin jet of deadly stuff is thrown straight forward. This has been demonstrated in studies by Charles M. Bogert at the American Museum of Natural History.

Only a few species of cobras are "spitters." The fang cavity of the non-spitting kind runs straight down through the fang, to an opening just outside the tip

and slightly above it. This is orthodox snake-fang structure; it functions like a hypodermic needle. A stream of liquid forced through is projected in the direction the fang itself is pointing.

In the fang of a spitting cobra, however, the channel takes a sudden turn as it reaches the discharge orifice, so that a forcibly ejected stream comes out at an angle of approximately 45 degrees to the front surface of the fang. The snake is thereby enabled to hold its fangs in normal position as it menaces

its enemy or prey, and yet throw the venom-jet straight forward.

The eyes seem to be the invariable target, in encounters with spitting cobras, and hits can be scored at ranges variously reported to be as much as six to 12 feet. In human beings, venom produces immediate blindness, followed by severe pain and inflammation lasting several hours. There seems to be no permanent injury.

Mr. Bogert suggests that in addition to its defensive function against such enemies as man and mongoose, the spitting habit may aid in the capture of prey. Dr. David Macht, Baltimore toxicologist, has informed him that the venom can be absorbed through the eyes of smaller animals, producing symptoms of general poisoning.

"Spitter" snakes are to be found in the tropics of both Asia and Africa. Despite their individually dangerous character, they do not constitute a really serious menace to the lives of our soldiers on overseas duty because they are not numerous, and most of them avoid trouble as much as possible. However, it is never wise to bend over a snake you think you have killed; some species have a wicked trick of "playing possum," and suddenly getting in one last lick at their attackers.

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PRODUCTION "V"—The "V" for victory formed by the highlights of the electric arc welder is symbolic of the work achieved by the home front worker. One production bottleneck is shown being broken at the Lincoln Electric Welding Company.

ENGINEERING

Simulated Shipwreck Tests Life Rafts and Equipment

See Front Cover

► **NINE YOUNG MEN** deliberately set themselves adrift in the Gulf of Mexico to test the life rafts and equipment which must serve as the sole protection of other men against the elements in similar expeditions, taken by necessity.

For six days and nights, under varying weather and seas the men drifted, using tarpaulins for sails when the wind favored them, for protection from the sun when it was blisteringly hot, and for covering when the chill of night descended.

The test was under the control of the U. S. Army Air Forces School of Applied Tactics at Orlando, Florida. Among the men making the tests were Capt. George H. Waltz, Maj. M. W. Boynton, Corp. Gilbert Bowman, Sergt. Thomas Chancey and Corp. Aubrey Nelson. They are pictured in an official photograph on the front cover of this week's **SCIENCE NEWS LETTER**.

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