

corrosion resistance. At least one of the new steels tried so far has been apparently successful in withstanding corrosion under seafaring conditions. Definite acceptance must await further experimentation, Mr. Trask warns.

Some of the steels tried have a stretching strength of 70,000 pounds per square inch and resist atmospheric corrosion four or five times as well as ordinary mild carbon steel.

At a time when shipping tonnage was never more important, use of the new steel would permit extra tons of cargo because of the reduced weight. An oil tanker of 15,600 tons cargo capacity making 25 trips per year, from Texas to New York, for example, would deliver 78,200 more barrels of oil, it is estimated.

"A further saving should be effected,"

said Mr. Trask, "by the 100% added durability of the high elastic steel."

A 15% increase in earnings for such a tanker due to the increased carrying capacity, is predicted. For a cabin class ship, the increased earnings due to reduced fuel saving would be 6% or over.

"If as great resistance to marine corrosive elements and to liquid cargoes can be had as is said to exist in the new material for railroad equipment against its corrosive elements," declared Mr. Trask, "the predicted saving may be greatly exceeded."

With this important prospect of fuel savings and increased cargo tonnage, Mr. Trask called for further study and development of data related to attainment of these benefits.

*Science News Letter, November 21, 1942*

when the fundamental aspects of drinking will be controlled in a sane educational manner and not through recourse to futile and vicious legislation of the prohibition standards."

He commended the efforts of the Research Council on Problems of Alcohol to solve the "many complicated problems that arise as a result of the consumption of alcoholic beverages" and urged an unprejudiced approach to the problem of cirrhosis of the liver, "a chronic, devastating disease causing death to a considerable number of individuals within a comparatively short time."

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## "Business as Usual" Out

➤ "BUSINESS as usual" is out for the private physician and the health officer just as it is for the huge industrial concern, the small manufacturer, the butcher and the baker, Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, declared at the meeting of the Southern Medical Association.

Even if available medical services are rationed under National Service legislation, as has been proposed and discussed in recent weeks, great efforts must be made, he warned, to increase the supply of personnel. This means keeping enough physicians in medical schools to teach and train more doctors. Medical students and, if the draft age is lowered, premedical students could, he suggested, be enrolled as a special category of professional manpower and, upon completion of internship, allocated among the Army, Navy and civilian services.

"This," he said, "would eliminate the present uneconomical procedure under which the Army and the Navy compete for medical students by commissioning them in numbers which may later prove disproportionate to the needs of the respective services.

"Much depends now and more will depend after the war upon a continuing flow of young, able-bodied physicians of the highest caliber."

The Medical and Health Committee, he reported, has recently approved a plan for increasing the number of graduate nurses and meeting the growing deficiency in hospital nursing services. The plan calls for speeding up the basic training course for completion in 24 months, after which third year students would go on the payroll of the parent hospital or affiliated institutions. They

## MEDICINE

# Not Due To Alcohol

Idea is now exploded that cirrhosis of the liver is caused by drunkenness. Although it may play a role, post-mortems show other factors responsible.

➤ "ALCOHOL, contrary to prevailing opinion, cannot seriously be regarded as a specific cause" of cirrhosis of the liver, Dr. Russell S. Boles, associate in medicine at the University of Pennsylvania, declared at the meeting of the Southern Medical Association in Richmond.

"While it is recognized that alcohol may play a role, and perhaps a predominating role in a certain number of cases, it must be conceded that in general, factors other than alcohol are responsible for the cirrhosis," he stated.

In a thorough study of post mortem examinations and histories of thousands of patients dying at the Philadelphia General Hospital, he found that cirrhosis occurred decidedly more often in cases with no history of alcoholism. In one series the figures were 34% of the cirrhosis cases in alcoholics, 66% in non-alcoholics.

Habitual excessive use of alcohol, according to one authority quoted by Dr. Boles, may, however, lead to chronic hepatitis, or inflammation of the liver. This is capable of being completely cleared up when the alcohol is stopped. This alcoholic hepatitis may develop in young men and women who indulge in cocktails daily for three and four days a week and who show as a result a sallow complexion, loss of appetite, irritability

and also a tender, slightly enlarged liver.

Dr. Boles always suspects some impairment of function of the biliary tract in most persons who cannot "tolerate reasonable amounts of alcohol without suffering such ill effects as headaches and drowsiness or a so-called bilious condition."

Cirrhosis, even if not specifically caused by chronic alcoholism, is conspicuously associated with it, occurring six or seven times as often in the inebriate as in the temperate or abstinent individual. Life insurance figures covering the periods of prohibition suggest, Dr. Boles pointed out, that cirrhosis diminishes as the consumption of alcoholic beverages diminishes.

"Speaking of the consumption of alcoholic beverages," he commented, "it must be apparent to most of us that there have been conspicuous changes in the drinking habits of the people of this country. The number of individuals who drink has greatly increased, but their taste has definitely changed."

He cited figures showing that per capita consumption of beer, "the chosen beverage of the moderate drinker," has increased, while that of distilled spirits has decreased.

"May it be hoped," he said on this point, "that the day will soon arrive

would live outside the hospital, thus leaving dormitory and classroom space for more students. They would not receive their certificates until after three years of training, but their release in the last year would supply civilian hospitals with replacements for the general duty nurses who have been drawn into war service. The physical facilities for nurse training would be increased by one-third and hospitals would be provided with an augmented staff for war duty.

The tough job of supplying medical services in critical areas now lacking them, Dr. Parran said, can best be handled after the manner of handling other tough problems, by breaking it up into a lot of little ones and handling them one by one. Following this thought, plans for meeting needs in different communities will be worked out individually. Such plans are now being made by the Procurement and Assignment Service and the Public Health Service.

Health departments must be protected from too great draft of their manpower. Taking one public health physician from his job, he warned, may mean that three private practitioners will be needed to cure the unprevented sickness. Health departments, however, must cut out all frills, unnecessary inspections, complicated record keeping and long-range programs of doubtful value.

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## New Cancer Theory

➤ A NEW theory on the cause of stomach cancer was presented by Dr. Frank L. Apperly, of the Medical College of Virginia at the meeting of the Southern Medical Association in Richmond.

Stomach cancer and perhaps other cancers, according to this theory, is a deficiency disease. Lack of sunlight and therefore possibly the sunshine vitamin D are suggested as the deficiency which results in stomach cancer.

Much exposure to sunshine has long been known as a cause of skin cancer, but skin cancer is easily cured in its early stages and the mortality is not high. Dr. Apperly has previously shown that in spite of the role of sunlight in causing skin cancer, cancer mortality in the United States and Canada grows less as the amount of sunlight across the continent increases and as more people are exposed to sunshine in farming or other outdoor occupations.

Today Dr. Apperly referred to studies showing that patients with stomach cancer have in general some deficiency of vitamin A. This vitamin and vitamin D

are known to work in cooperation. Patients deficient in vitamin A need increased amounts of vitamin D. Lack of sunlight and consequently of vitamin D, on the other hand, may lead to signs of vitamin A shortage. Rats and dogs on an adequate diet but kept in the dark, Dr. Apperly recalled, develop a horny kind of tissue lining the digestive tract.

Vitamin D alone has little effect on rat tumors, other researchers have shown, but when combined with vitamin A it

diminishes the number of tumors that develop in a tumor-susceptible strain of white mice and abolishes spontaneous tumors in a tumor-resistant strain.

"These considerations strongly suggest," he concluded, "that lack of sunlight is a factor in cancer of the stomach and perhaps of other sites through lack of vitamin D or other related derivative of ergosterol, perhaps by interfering with the absorption by the intestine of calcium, phosphates, or other substances necessary for the metabolism of cells."

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### ASTRONOMY

## Why Stars Black Out

Pulsations explain dimouts, too, but stars that pulsate change frequencies like vibrating air in pipe organs. Are brighter than the sun.

➤ STARS of the strange class known as RV Tauri-type pulsate in fundamentals and overtones according to their own whims and fancy. And Dr. Cecilia Payne-Gaposchkin of Harvard Observatory uses real live organ pipes powered by her own lungs to correlate the vibrations of air columns with those of gigantic stars far off in space.

Only 29 RV Tauri-type stars are known, but there were only 13 known in 1927, so they are being found rather frequently. They are stars whose light fluctuations are extremely variable, but in the main, they do strong fadeouts alternated with weak ones. That is, their light becomes very much fainter than normal at intervals, but about in the middle of these intervals, they do a less noticeable dimout. However, these "primary" and "secondary" minimums of light sometimes change places in the RV Tauri stars, and sometimes some of them seem more like Cepheids, another class of variable star which is much more abundant. Cepheid variables are surely pulsaters, and they undergo their alternate contractions and expansions at regular intervals—the principle of harmonic vibrations, well-known to musicians, has been successfully applied to them by Dr. Martin Schwarzschild, of Columbia University Observatory.

But the RV Tauri stars are whimsical, Dr. Gaposchkin told the American Association of Variable Star Observers recently. Sometimes they vibrate in their fundamental tone, she said, and sometimes in the first overtone or harmonic. They may change back and forth at will, thereby producing hitherto unex-

plainable changes in their light fluctuations. She likened the Cepheids to the heavy and low notes of the long pipes; the so-called Cluster variables to the short high-pitched notes; while the RV Tauri stars were in between, giving pleasant tones of one octave separation.

All such vibrating variable stars are known to be considerably larger and brighter than our sun, which is a "dwarf" star of comparatively quiet habits—to our good fortune.

*Science News Letter, November 21, 1942*

### ORNITHOLOGY

## Guadalcanal Scene Shown In New Bird Exhibit

See Front Cover

➤ VISITORS to the American Museum of Natural History in New York can get a glimpse of what life on Guadalcanal was like in more peaceful times, in a new habitat group showing typical birds of that remote island.

The exhibit is one of four showing birds and their homes in South Pacific islands, collected by a scientific expedition four years ago, under the leadership of the late Lieut. A. B. Fahnestock and his brother, Capt. J. S. Fahnestock.

Among the strangest of the birds shown are the brush fowl, which buries its eggs in a mass of fermenting dead leaves which act as a natural incubator; and the dwarf climbing parrot, a little bird no bigger than a sparrow, that climbs trees like a woodpecker and makes its home in the nest of termites.

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