GENERAL SCIENCE

Science from Shipboard

Informative handbook for those who cross the seas in ships to fight for freedom published; scientists tell of stars, weather, birds, ships and many other things.

The new book, SCIENCE FROM SHIPBOARD, *was introduced to the public through this radio talk by Dr. Harlow Shapley, director of Harvard College Observatory, in the Adventures in Science program over the Columbia Broadcasting System:*

➤ WE HAVE all become accustomed to the phrase "This is a scientific war." We hear continually that a large proportion of our chemists, physicists, and engineers are at work on the important machinery of war. We hear that a great many of our soldiers and sailors must be trained in the elements and in the specialties of physics—training, which for various reasons our secondary schools have failed to provide during the past twenty years.

But most of you do not know that the scientist has been appealed to also for assistance in maintaining the morale of our armed forces. Probably you did not know that this morale can be helped through popular instruction in various branches of science.

But if, for example, you had the prospect yourself of a two months' trip by army transport, with all its possibilities of dullness and monotony, you and your morale would better appreciate both the ailment of ennui and the cure thereof.

This is how it all began. A representative of the American Red Cross, which is busy with many hard war problems, asked me if I could provide some charts showing the positions and names and habits of the bright southern stars—the stars such as one might see on a clear night from Guadalcanal. Of course I could, and naturally I would be glad to provide information about them. For fifty years the Harvard Observatory has maintained many telescopes and observers in the Southern Hemisphere for the purpose of studying these bright stars, as well as the several billions of fainter ones that the naked eye knows nothing about.

But why prepare only star charts for the curious traveler? Why not prepare charts and descriptions of clouds also, and of whales and waves and sea birds? Why not prepare a simple scientific guide to all sorts of things that could be seen over the transport's rail?

"Very well," said the Red Cross, "go to it, and we shall see to the distribution of thousands of such booklets, if they are any good; we shall distribute them to the men and libraries on the transports."

Promptly we laid out a plan. I appealed to my colleagues at the Harvard Observatory. Six of them undertook jobs of writing on subjects concerning which they are experts. Two or three others pitched in to help with drawings and editing. But since it is not enough to deal with stars, the Milky Way, planets, and timepieces, we went to the Boston-Cambridge branch of the American Association of Scientific Workers—an organization that includes in its programs the presentation to the scientifically interested public of scientific knowledge in non-technical language.

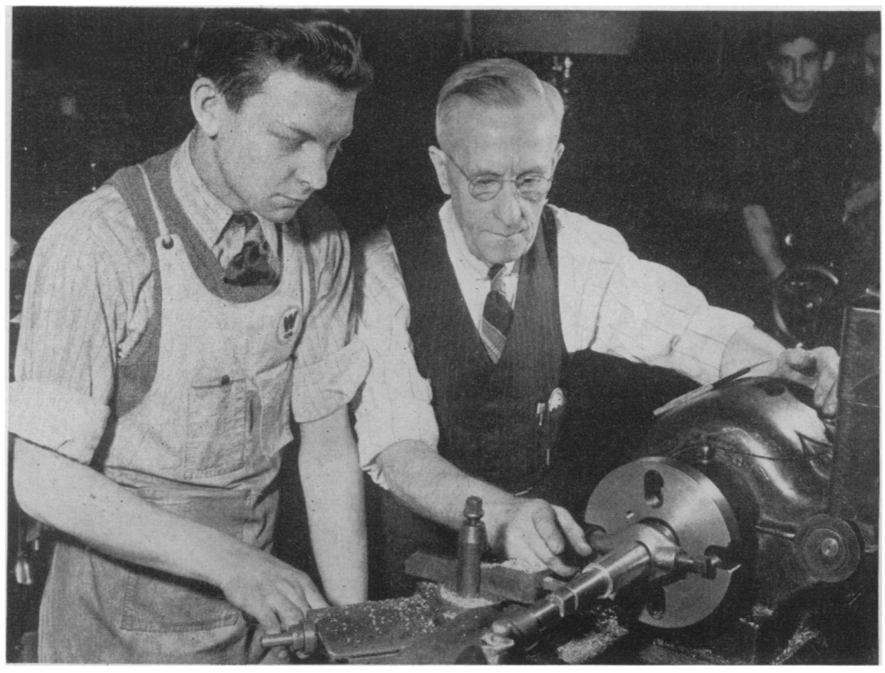
Everywhere we met prompt and friendly cooperation. The expert scientists, to whom we turned, were glad to help the Red Cross, glad to help the soldiers on the transports, glad to help the men in camps who later might go to sea, and those who stay at home but are interested nevertheless in the interests of those who do go out in ships.

With the help of biologists, a navigator, two ship engineers, a geographer, a weather expert, an ornithologist (that means birds), and a group of artists who could make explanatory drawings and pictures, the book "Science from Shipboard" was produced. It has just been published—two hundred and sixty-eight pages of reading and pictures that should make a trip by sea an interesting adventure. The casual reader is almost certain to turn upon something of much interest; the persistent reader will come away from the book with a pretty fair elementary education in general science.

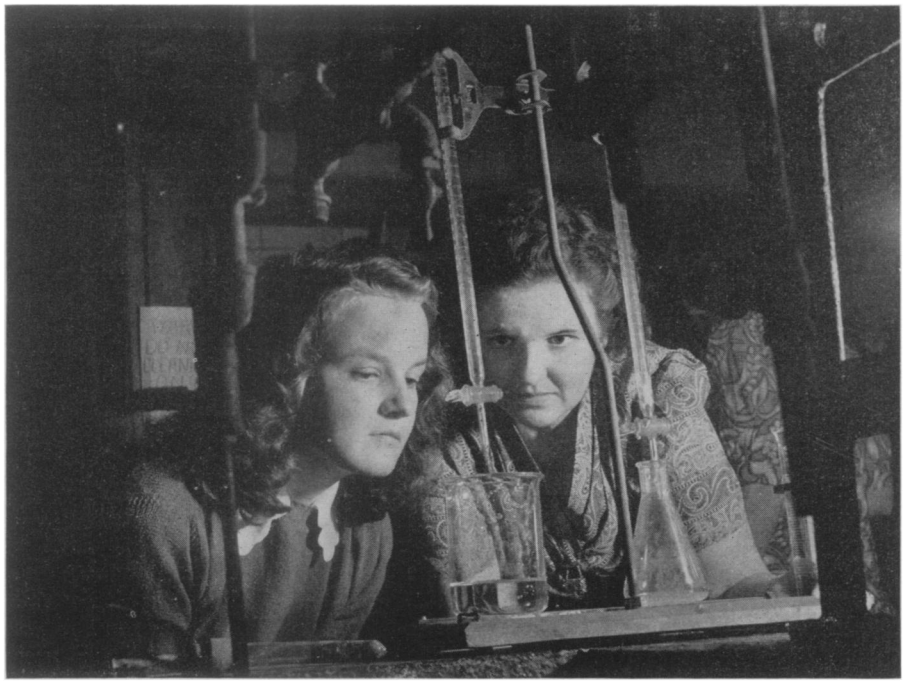
The American Red Cross has certainly done another fine service by inspiring the making of this little book and by distributing it without cost to the sailors and soldiers on transports.

Let's quickly look at some of the contents of Science from Shipboard.

Waves and wind and water are all around the boat, and it turns out that they are full of interest and information when followed with the help of a full-size essay by Dr. Brooks, the director



FOR WAR INDUSTRY—Boys of 16 are being trained in an apprentice course at Westinghouse Lamp Division to relieve the manpower shortage in war industries. This youth is being instructed by a veteran foreman in lathe operation.



FOR LABORATORY WORK—A special course has been developed at Brown University to train girls swiftly to become laboratory technicians. These girls are learning how a burette works.

of the Blue Hill Meteorological Observatory.

Three chapters deal with the stars. The southern stars are charted as well as the northern. Special maps were made for this particular volume. The answers to all the ordinary astronomical questions of the traveler by sea are here available, as well as a story on the reckoning of time by hours, days, and years.

For the articles describing the technique of navigation, we have had the expert services of one of the instructors in the United States Naval Academy; and for the story about the islands of the ocean and the variety of shorelines, a well illustrated account has been prepared by Dr. Mather of Harvard.

There are two chapters on the life of the sea that can be seen from shipboard, one dealing with fish and things of that sort, and the other with the oceanic birds.

Two engineers have joined in preparing an account of the modern ship. They talk about Diesel engines, the steam power plant of a ship, the problem of stability, and even the simple problem of why a ship of sinkable materials does not sink.

The book finishes off with the most important part of the ship—the passenger himself. His seasickness is sympathetically treated; also the problems of vitamins and malaria and infection and anxiety. And there is useful comment on exposure and thirst—all written by Dr. Gerard of Chicago University, an expert in the popular presentation of such human problems.

Did you know that there are fifty kinds of seagulls? Well, there are, but only three of them get far enough from the shore to merit description in this book. And do you know what a noddy is, and a puffin? They also are sea birds, and so is the skua and the phalarop. Curiously enough, the scientists lack a great deal of full knowledge about sea birds, and some keen-eyed soldier or sailor is going to pick up some information new to science, if he keeps notes on his observations. His observation may have something to do with albatrosses, or the phosphorescence of sea water, or the behavior of clouds around some island mountain peak, or the appearance of a comet or nova among fixed stars.

It was from a small ship sailing the many seas a century ago that Charles Darwin made the observations and interpretations which a little later revolutionized man's way of thinking about nature and himself. Let's hope that the soldiers and sailors can also travel in humble fashion some of the heroic paths laid out by Darwin, and improved by a hundred years of scientific exploration; and that they can be intelligently guided in their observations and interpretations by "Science from Shipboard."

In addition to the edition for the American Red Cross, the book, "Science from Shipboard," has been published by Science Service at a not-for-profit price of only 25 cents. If you want a copy of this 268 page illustrated book, send a quarter to Science News Letter, 1719 N St., N. W., Washington, D. C.

Science News Letter, May 1, 1943

GEOLOGY

Japan's Pacific Gibraltar Is a Sinking Island

➤ TRUK, Japan's mid-Pacific Gibraltar, is a doomed island. Unless geologic processes now going on in the earth's crust beneath that part of the ocean are stopped or reversed, it will eventually be drowned. The only trouble is that this won't happen in 1943 or 1944—geologic processes are slow.

That Truk is sinking, while other islands that are now enemy strongholds are slowly rising, was revealed in an address by Prof. William Herbert Hobbs of the University of Michigan before the meeting of the American Philosophical Society in Philadelphia. Prof. Hobbs is one of the few Americans who have seen Truk and the other Japanese-mandated islands since they passed under the Rising Sun flag. He visited there in 1921.

For geologists interested in the story of mountain-building, most unique opportunities for study are offered by the several curving island chains in the Pacific, from the Bonins through the Philippines and Indies and far on to the South Pacific archipelagoes and New Zealand, Dr. Hobbs pointed out. Elsewhere on the earth, whenever a mountain chain has started to grow, it has immediately been attacked by erosion, which cuts it down even as it rises above the general crustal level. These arc-like strings of islands, however, are only the tips of mountain chains now forming as vast upthrust wrinkles from the ocean floor. Erosion therefore plays no part on their long, submerged flanks.

Only on the emersed tips which are the islands have the waves and the weather any chance to do any carving; and this is even a help rather than a hindrance to the geologist. For when an earthquake cycle has boosted the island out of the water another few feet, the waves obligingly carve a notch all around its shores, marking the new level. And if it should sink again, a coral reef forms, indicating the amount of submergence.

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