

# New Machines And Gadgets

## Novel Things for Wartime Living

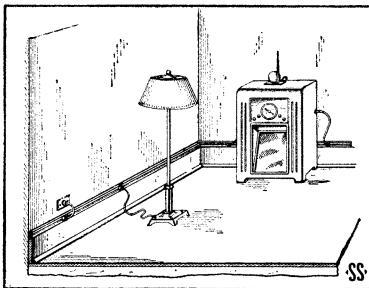
Self-lubricating iron bearings, in place of bronze, save copper and time and attention in oiling small machines and appliances. The bearings are porous, being made of powdered iron, molded to shape and baked and then saturated with oil. Usually the oil reserve lasts the lifetime of the appliance, but for heavy duty or continuous running some additional oil may be required.

Fluorescent material for blackouts can now be had in rolls or by the yard. By daylight it just looks like a good oilcloth. But after exposure to daylight, to black light, or to intense artificial light, it will shine in the dark for many hours. It can be cut out in the form of letters, arrows or lines and pasted or tacked up where desired, or can be sewed to curtains, clothes or other fabrics.

Airplane carburetors have been improved by a new diaphragm composed of a cotton cloth impregnated with synthetic elastic materials. The diaphragm is accurate in dimensions and of a uniform thickness of one-thousandth of an inch. The material is used also for oil seals, valve seats, gaskets, etc.

Concrete forms made of paper are an innovation to speed building construction especially where, as in large cantonments, foundations must be set for many piers and posts. The forms are cylindrical and built up of spirally wound laminated paper just like a mailing tube. They save the time and waste of setting up and taking down wooden forms. After the concrete has set, the paper may be removed with a special tool or it may be allowed simply to disintegrate.

A convenience outlet that really is convenient is shown in the illustration. It extends the one or two outlets the builder has meagerly provided to a continuous strip that may go all around the room, and current taken off at any



point. The live wires are well buried in recesses under overlying insulating strips and can only be reached by the specially shaped prongs of the movable plug. This invention has just been patented.

Phantom-proof traffic lights are a recent development. A visor above the lamp prevents the direct rays of the sun from striking the lens, giving the appearance the lamp is lighted when it isn't. This is called the "Sun Phantom." The new lamp has also a silvered glass reflector in place of the usual metallic reflector.

For patching cement floors in which cracks, holes or ruts have appeared, a new quick-hardening cement has been developed. It hardens overnight and becomes stronger with age. Because of an iron ingredient, it is especially resistant to wear.

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., N. W., Washington, D. C., and ask for Gadget Bulletin 111.

Science News Letter, July 4, 1942



## SCIENCE CLUBS OF AMERICA

Sponsored by Science Service

### NEWS OF CLUBS

WILLIAMSBURG, Va.—Nine years ago Carl Gottschalk started a collection of butterflies while but a freshman at high school. Although he has neither bought nor sold specimens his present collection comprises more than 4,000 different butterflies and includes several hundred different species, many of which are rare and valuable. His reputation as a scientist and authority on butterflies has grown along with his collection which includes rare species from

Japan, Germany, Italy, Holland, Latvia, Turkey, Greece, Brazil, Peru, Canada, Switzerland and many other countries.

This absorbing collection of butterflies was exhibited at the Second Annual Convention of the Virginia Junior Academy of Science at Hotel Roanoke, Roanoke, Va. Its exhibitor, now a senior in college, will become a medical student on graduation next month. This shows how far a scientific hobby can be promoted.

The theme of the convention was "Science in National Defense". Science club exhibits set up by Junior Academy members, were viewed with interest as was a special model airplane exhibit set up by the Jefferson Senior High School and a Fisheries exhibit presented by the Virginia Fisheries Laboratory of the College of William and Mary and the Commission of Fisheries.

INDIANAPOLIS, Ind.—Lectures on the application of physical principles to professional and industrial activities are of major interest to members of the Physics Club at Arsenal Technical Schools. This club holds two science congresses and a science fair annually and participates in the annual program of the Indiana Junior Academy of Science. Then, too, there are joint programs with science clubs of other local schools. Something doing every moment seems to be the general plan. The sponsor is Ersie S. Martin, physics teacher.

LAKEVILLE, Conn.—Two or three social meetings with games, songs, and refreshments add sparkle to the activities of the Hotchkiss Chemistry-Physics Club at Hotchkiss School, Lakeville, Conn. At this school one will find photography, medical, weather bureau and railroad clubs, all of which are affiliated through the school's treasury. Demonstrational lectures are delivered to them by students or outside speakers. Individual projects are built and occasional exhibits are arranged. Field trips and science movies round out the busy program. This club is sponsored by William N. Stakely, chemistry instructor.

Clubs are invited to become affiliated with SCA for a nominal \$2 for 20 members or less. You can become an associate of SCA for 25 cents. Address: Science Clubs of America, 1719 N St., N.W., Washington, D. C.

Science News Letter, July 4, 1942

### AERONAUTICS

## Plastics for Airplanes Get New "Mar" Test

A NEW "mar" test has been devised to indicate how well the transparent plastics used for the gun turrets, nose pieces and windows of our airplanes will resist dulling effects of dust, smoke and sand blown against them with great force. The ordinary scratch and hardness tests have been found unreliable indicators of this effect.

The new test, which is much more direct, was described by Ladislav Boor, physicist of the Stamford Research Lab-

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atories of the American Cyanamid Company, at the meeting of the American Society for Testing Materials in Atlantic City.

The test consists in allowing a stream of finely divided carborundum to fall from a height of 25 inches on the test piece, which is inclined at an angle. A definite amount of the abrasive is allowed to fall, producing a dulled spot. The loss of gloss as compared with the

original gloss is then measured with a glossmeter. This is an instrument used to measure glossiness of paint and of other surfaces.

Several materials were tested in this way giving ratings quite different from those obtained by the scratch and hardness tests, but no one final method was decided upon. However, the "mar" test will undoubtedly help in keeping visibility clear for our air-fighters.

*Science News Letter, July 4, 1942*

## POPULATION

## Long-Range Bomber May Bring Population Increase

### Threat of Air Attack May Do Away With Large Apartment Houses and Crowded Living in Big Cities

**T**HE BIG long-range bomber which has killed so many civilian fathers, mothers, and little children in this new kind of war may have a part in increasing the number of babies in tomorrow's world.

This prophecy is implied in an analysis of what modern warfare will do to the location of industries and workers presented to the Population Association of America by Dr. Warren S. Thompson, of Miami University.

As long as the threat of attack from the air hangs over the heads of the people, military considerations will dominate all policies influencing the distribution of the people, Dr. Thompson predicted at the Association's meeting in Atlantic City.

The threat of the bomber will very likely do away with the large apartment house which will be replaced by smaller apartment houses with larger open spaces about them and by detached houses — pleasanter places for children to live and grow up.

New factories are likely to be located in outlying regions away from big cities — more healthful places in which to live and grow old even when the bomber is not a constant menace.

When the Soviet Union undertook its first five-year plan, military considerations played a large part in determining where new industrial areas were to be established, Dr. Thompson said.

"In the summer of 1930 I travelled rather extensively in the Soviet Union," he said, "and from many sources I heard that the danger of invasion from

the West was the dominant factor in locating so many of the new industrial cities along the Volga and in the Urals. There was not the least hesitation anywhere in avowing this motive. Today we appreciate the foresight shown in this planned distribution of industry."

However, the new Soviet cities were not themselves decentralized nor were the factories built in small units less vulnerable to crippling damage from air bombardment, Dr. Thompson pointed out. The Russians relied, rather, on distance to insure the safety of their new factories.

More recently, Germany has gone farther. In population figures, the secret location of new war industries in small cities and rural areas can be detected, since those areas are growing faster than are the big German cities.

Rumors also point to the fact that Germany has decentralized the industrial centers. This means the spreading out of population, too. The area covered by larger cities will be increased and businesses which have been tightly packed together in downtown areas will be scattered.

Countries like Russia, America and China can place more reliance on distance rather than decentralization for safety. Germany, Italy, France and Great Britain cannot.

Such policies, intended to protect war production, inevitably have an indirect effect on the lives and happenings of the people—an effect which incidentally is favorable to democracy and unfavorable to dictatorships.

## ● RADIO

*Saturday, July 11, 1:30 p.m., EWT*

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Steuart H. Britt, director of the National Research Council's Office for Psychological Personnel, will discuss "Psychologists in the War."

*Tuesday, July 7, 7:30 p.m., EWT*

Science Clubs of America programs over WRUL, Boston, on 6.04, 9.70 and 11.73 megacycles.


One in a series of regular periods over this short wave station to serve science clubs, particularly in the high schools, throughout the Americas. Have your science group listen in at this time.

Privacy for the family and for individual members of the family in any one home is one of the important elements in the American way of life, Dr. Thompson declared.

"It is one of the fundamental differences between the American social structure and the totalitarian. The leaders in the dictatorship do not want the masses of the people to have any private life. They want them to live intimately with other people, to live merely as a cell in the national organism. It may very well be that our marked individualism, particularly among farm people, is in part the result of the type of land settlement which predominated in this country until near the end of the nineteenth century, but the crowding together of greater and greater masses of people in cities and the crowding of the majority of families into one, two or three rooms cannot be looked upon with equanimity by one who still believes that people are entitled to a certain measure of privacy both as families and as individuals."

*Science News Letter, July 4, 1942*

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