

New Machines And Gadgets

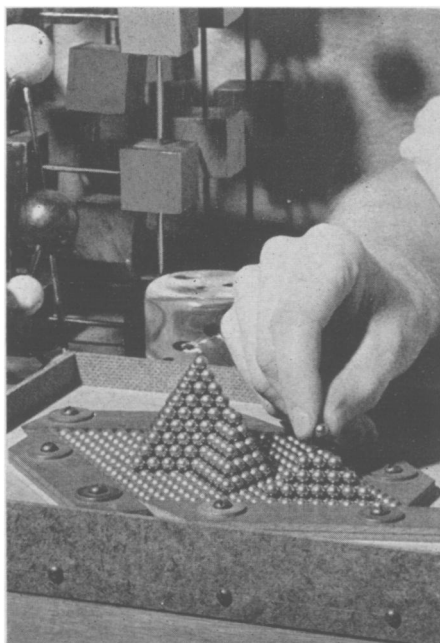
Novel Things for Better Living

Lightweight concrete in many new forms is announced by the Bureau of Mines. In place of rock and sand, use is made of slag, cinders, volcanic scoria, treated shales or clay, pumice and even sawdust. Yet the concrete is strong as well as light, making possible taller buildings, longer bridges, and stronger fireproof walls.

The danger of using a 110-volt lamp when working in a damp all-metal enclosure such as a steel tank, boiler or ship can be avoided by using a step-down transformer that reduces the voltage to a harmless six volts. Such a transformer is available provided with a cord that can be plugged into any regular 110-volt outlet. A similar outlet is provided on the low-voltage side of the transformer into which the cord of a six-volt lamp can be plugged.

Washable catalogue cards for libraries have been devised to meet the huge soiled-card problem. A thin foil of cellulose acetate is melted on the card stock, and forced into the fiber by heavy pressure without the use of an adhesive. The film so produced is only .00088 of an inch thick. Even the edges of the cards are sprayed with a waterproof lacquer so that the whole card is completely waterproof. By use of a special typewriter ribbon, it is even possible to type on the treated stock and the cards become washable again after 24 hours.

The steel balls in the illustration above are being built up to show the arrangement of the atoms in a crystal. Each ball represents an atom but is 20,000,000 times the size of the real thing. The particular arrangement shown is the most compact possible. Each atom inside the crystal is touched by 12 surrounding atoms. This arrangement occurs in elements such as aluminum, silver, gold,



calcium, copper. In the background are crystal models of compound substances like salt and calcium carbonate. In these the atoms are spaced. The arrangement and spacing are determined by X-ray diffraction patterns.

A new adhesive of vinyl resin has been developed to replace the now scarce rubber cement. It is especially useful for attaching leather or fabrics to metal, as in spectacle cases, glass, fiber and transparent cellulose. After drying, the resin is non-adhesive at ordinary temperatures.

Shoelace tips are now being made of a cellulose nitrate plastic in place of metal. The shoelace tip may be a tiny thing, but it is estimated that half a billion laces were plastic tipped last year, and in this application one pound of plastics may release more than three pounds of war-needed metal. And plastic tips do not cut or scratch the shoelace yanker.

A metal screw has been devised that does not wear out the thread in a plastic or other comparatively soft material in which it may be used. A hard helical wire spring, formed to fit the thread, is first screwed into the threaded hole. The thread on the screw is round-bottomed to fit the wire, so that when the screw is screwed into the hole, it rides on the wire and never touches the original thread in the plastic. Consequently, however often removed or screwed in again, it causes no wear on the plastic thread. The screw was originally designed for aircraft construction, but obviously has many other uses.

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 95.

Science News Letter, March 21, 1942

ETHNOLOGY

Australians Do Not All Look Like Western Cowboys

CONTRARY to what most Americans think, Australians are not all tall, lanky fellows looking like western cowboys, but come in all shapes and sizes, according to C. Hartley Grattan's new book, *Introducing Australia*. (Reviewed, *SNL*, this issue.)

"Australians," says Mr. Grattan, "like the Nova Scotia farmer's foot, are long and short, broad and narrow, and wide."

Another myth the book explodes is that Australians speak cockney. Words containing "a" and "ai", however, are likely to be pronounced as though they contained a long "i". Generally their speech is less rhetorical than that of Americans, and their slang, next to American, "is the most vivid, vigorous, and comprehensive in the world."

According to Mr. Grattan, Australians use many American slang terms, but often completely change the meaning. Thus "grafter" in Australia means a hard worker, and not one who makes off with public funds. Most commonly used slang term in Australia is "bloody" and the number of times an Australian swearer can use it in a conversation is "incredible."

Favorite Australian sport is cricket, while baseball is a minor sport. The big sporting event comparable to our World Series, is the periodical matches between Australian and English cricket teams played alternately (before the war) in the two countries.

Science News Letter, March 21, 1942

COLCHICINE!

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QUEST for March will describe and ILLUSTRATE the actual creation of a valuable new Cassava Plant, also Science, Medicine, Plant Experiments, Money-making Ideas.

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● RADIO

Saturday, March 28, 1:30 p.m., EWT

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

Dr. Morris Meister, principal, Bronx High School of Science, will tell how science teaching can help in the war emergency and how boys and girls belonging to science clubs can help in the war effort.

Tuesday, March 24, 7:30 p.m., EWT

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

Dr. Charles Brooks, of the Blue Hill Observatory, will discuss "March Weather Changes the World Over."

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.