

Do You Know?

The *Argentine* is now the second largest producer of vitamin A, ranking next to the United States; shark livers are the source.

The mineral *tourmaline* can be used for wavelength control in radio transmission but it is rarer and more expensive than quartz.

A single wide *tire* on heavy trucks and tractors has been found to be more efficient on soft ground and in mud than dual tires.

The world production of *plastics*, now replacing metals as a war measure, is only about one-quarter of one per cent the output of steel.

The fuzz from *cattails*, now used as a substitute for kapok in sound and heat insulation, has about 90% the warmth of the same amount of wool.

The *wood rat*, unlike the common rat, lives in the clean, open air of the country, usually in mountainous sections, with a home in a tiny cave; to scientists he is *Neotoma magister*.

Experiments on *birds* showed that the depth of the color of the yolk was related to the amount of greens fed, and a diet of white corn with no greens produced very pale-yolked eggs.

Lawns should not be *mowed* too often or too short during hot dry weather, but should be cut often enough to prevent certain aggressive weeds from forming seeds.

The hungry-looking *coyote* shot by predatory animal hunters may yield from five to seven pounds of fat usable for manufacturing munitions; the government has asked all hunters to save this fat.

The principal chemical elements held in *seawater*, mostly in the form of soluble salts, are chlorine, sodium, magnesium, calcium, potassium, bromine, boron, and fluorine; many others are found in very small quantities.

New glass *lenses* that enable pilots to detect targets obscured by haze are made of a glass composition which absorbs scattered blue light rays characteristic of haze; they are a warm rose smoke in tint.

ENGINEERING

Shortage Relieved

The manpower shortage is being helped, at least in part, through research and experimentation designed to increase war production with existing equipment.

► THE NATION'S manpower shortage is being relieved, at least in part, through scientific research and experimentation designed to increase war production with existing manpower and equipment, reports Richard B. Smith, executive secretary of the Manufacturing Engineering Committee of the American Society of Mechanical Engineers. This committee, created at the request of the War Production Board through the Office of Production Research and Development, has carried out at least 40 research projects during the past year, which has increased production rates as much as 1,000%.

The Committee's help is available to any war production agency for consultation about production and mechanical process problems, and it has aided industry in adopting more efficient production methods by formal research and through surveys.

Machine shops all over the country have been helped to increase machine speeds and lower costs, through information released by the Committee about high-speed milling. Data sheets, distributed to industry, outline jobs in actual operation and contain information that can be immediately applied in the shops to improve and speed up existing equipment without increasing manpower.

One project on high-speed milling is now being carried out at the California Institute of Technology under the supervision of the committee. Aircraft plants have been helped to meet their quotas for many thousands of military planes by information discovered through research. For example, speeds as high as 24,000 feet per minute are possible in machines cutting aluminum, instead of 2,000 to 3,000 feet per minute formerly thought to be satisfactory. It was also found that feeds of 200 to 300 inches per minute could be used instead of 15 or 20. In a few months such milling machines as the research had demonstrated to be practical were installed in aircraft plants.

Through the findings of the committee, one company which would have been called upon to spend \$10,000,000 met its quota of planes with less than 15 addi-

tional machines and fewer than 25 new skilled workers, at a cost of less than \$500,000.

Another project now being conducted is an investigation of fused quartz. Research has succeeded in producing a clear quartz practically free from bubbles with a high transmission factor for use in the forming of cells and applicators used in producing serums and vaccines for the armed forces. This quartz has the quality of transmitting ultraviolet rays through a lower range of the spectrum than any other commercial quartz.

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INVENTION

Patents Seized From Aliens Now Abstracted

► MECHANICAL, electrical and non-chemical patents, seized from enemy aliens and nationals of occupied countries by the American government, have been abstracted and the abstracts printed. They are available in five volumes containing information relative to 37,000 patents, or in separate sections by subjects. Two-thirds of the patents were granted to Germans. Abstracts of 8,000 chemical patents have previously been made available.

The patents now abstracted include such broadly diversified fields as aeronautics, brakes, electric lamps and heating, electric furnaces, foods and beverages, internal combustion engines, machine elements, motors, printing, electronics, and refrigeration, as well as many household articles. Telephony, telegraphy, textiles and tools are also included.

The abstracts consist of the inventor's claim to the patent and a reproduction of the drawing as published in the *Official Gazette* of the U. S. Patent Office.

Licenses under most of these patents are readily obtainable by any United States citizen upon application and payment of an administrative fee of \$15 per patent. Over 9,000 have already been licensed by the Alien Property Custodian to nearly 700 persons or firms. This office issues all licenses.

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