

MEDICINE

Penicillin Price Drops

Since the March 15 general release for civilian use, the cost of the drug has dropped from \$2.40 per 100,000 Oxford units to as low as \$1.54 per 100,000 units.

► THE COST of being sick, when the illness is one that responds to penicillin, is going down.

The price of the drug itself has dropped, since the March 15 general release for civilian use, from \$2.40 per 100,000 Oxford units to as low as \$1.54 per 100,000 units. This last figure is a wholesale price and the price to a physician may be \$1.80 to \$2.00 per 100,000 units.

This amount, 100,000 Oxford units, is enough to cure one case of gonorrhea. Most other illnesses require considerably more of the drug, depending on how early treatment is started and how severe the illness is. For syphilis two to four million units may be required. For osteomyelitis, a bone infection that is usually long drawn-out, as much as five million units may be needed. From 500,000 to 1,000,000 units are required for most illnesses in which penicillin is the drug of choice.

The price of sulfa drugs, which can be used for some of the same conditions as penicillin, is less than the price of penicillin. The cost of getting well may be cheaper when penicillin can be used, however, because recovery is quicker. This means less time in the hospital, a smaller bill for the hospital room or bed, and a quicker return to work and earning.

Sulfa drug treatment, however, can sometimes be given at home. The patient does not have to be stuck with a hypodermic needle every three or four hours day and night, as he does when undergoing penicillin treatment. The method of giving penicillin requires more visits by the doctor or more nursing attendance, which is likely to be reflected in the total cost of the illness.

The reasons for the low and possibly still lower cost of penicillin are competition and increased production. Production took a big jump in February, just before the drug was released for civilian use generally. The production increase is expected to continue, so it is reasonable to suppose the price will continue to drop.

The OPA ceiling of \$10 per 100,000 units has not been revised, partly because

of the drop in price and partly because of the time lag involved. It would take about two months for OPA to collect and analyze figures on which to set a new ceiling, by which time, if production continued to increase, the price would again be lower.

How cheap penicillin will ultimately become will depend upon the cost of manufacture as methods improve and upon trade conditions.

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CHEMISTRY

Invisible Glass Wins Award for Dr. Blodgett

► THE AMERICAN Association of University Women announced that the annual Achievement Award of \$2,500 goes to Dr. Katharine B. Blodgett of General Electric Research Laboratory at Schenectady, N. Y., for her work on building films of almost infinitesimal thickness.

Dr. Blodgett's invention of "invisible glass" has received widespread public recognition, but this is only a by-product of her long-time research, the awards committee pointed out. It was during her study of methods of building films, frequently only one molecule thick, that she developed a process of depositing a non-reflective film on glass. Her study of two-dimensional films, with a total thickness only one-quarter of a wavelength of light, has contributed to the efficiency of the lenses of submarine periscopes and aerial cameras by preventing wasteful loss of light through reflection. Another application of her work on molecular films is a gauge she devised for measuring, by light reflection, the thickness of any transparent or semi-transparent substance within a range of one- to twenty-millionths of an inch.

"Anyone who wishes to measure the thickness of a film which is only a few millionths of an inch thick can compare the color of his film with the series of colors in the gauge. The step on the gauge that matches his film in color will give him a measure of its thickness," Dr. Blodgett said at the meeting.

Dr. Blodgett received the award at ceremonies held on March 29 at the National Museum in Washington, D. C. This is the third year that the Achieve-



"BUILT-UP" FILM—Dr. Blodgett, working in her laboratory at the General Electric Company, is building the thin films, which afford scientists a valuable thickness gauge, by dipping them in and out of the water. The crank in her left hand raises and lowers the glass which holds the film.

ment Award, contributed annually by the Northwest Central Region of the AAUW, has been presented to an out-

standing woman scholar in recognition of distinguished achievement.

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METALLURGY

Future of Light Metals

Postwar uses of aluminum and magnesium may require heavy production. Heavy metals may be replaced where weight is not essential.

► ALUMINUM and magnesium, often called "Al and Mag" for short, and also the "magic" metals, have had their day in Congress at hearings before the Senate Small Business Committee, which is considering, among other matters, the future of these light metals and what to do about the government's investment of over a billion dollars in plants for their production.

Producers of these light metals, and users extending from aircraft manufacturers to kitchen utensil fabricators, were heard. Representatives of heavy industries, such as builders of automobiles, railroad cars, and farm machinery, presented opinions of their possible future uses in their industries by invitation of the committee.

Aluminum naval destroyers able to travel at 60 knots, as well as magnesium truck and trailer bodies, were predicted by Henry A. Kaiser, the shipbuilder, who stated that plans for the destroyer are already complete and that magnesium-bodied trucks are now on the road. These bodies cost twice as much as bodies of steel, but, on those now in use by one of his companies, can haul four tons more pay-load. He suggested that the government plants be leased or sold to private companies.

The supply of magnesium in the United States is limitless, declared Dr. Willard H. Dow, head of the Dow Chemical Company. The only limit is the amount of electricity available for its production. Magnesium as a metal, he said, has been known for more than a century, but only for about 25 years has it developed as a structural material. Then it was found that if other metals are mixed with magnesium in various proportions, the alloy gives magnesium a new character and it becomes a tough, easily machined, corrosion-resisting metal in every way suitable for construction in which light weight matters. He suggested many possible uses, including aircraft, railroad equipment, automobile and truck bodies, furniture, shipping containers, machinery, home construction,

and in the oil industry, particularly to protect pipe lines from electrical deterioration.

Aluminum production by the Reynolds Metals Company, which up until 1941 was a fabricator, not a producer of this metal, was discussed by R. S. Reynolds, president of the company. The possibilities in the future for aluminum are enormous, he said, but so are the problems. "If the government adopts sound policies for the disposal of its own plants and for their subsequent operation, real dividends in jobs and consumer goods will be produced."

On the question of the policy to be adopted in the disposition of government-owned aluminum plants, I. W. Wilson, of the Aluminum Company of America, declared that laying down a hard-and-fast rule at this time would be an unwise step for Congress to take. No one can now tell the length of time that will be required to develop postwar aluminum markets.

"A year after peace has been made," he said, "Congress and the industry will be better able to gauge the future; two years after peace they may be still better able to judge the future."

He referred to the possibilities of the use of vast quantities of light metals in the construction of naval vessels, passenger and cargo ships. He submitted a list of 2,000 items in which aluminum was or could be used to advantage.

Light Metals in Aviation

► ADOPTION of a national air power policy for the development of postwar military and civilian aviation is necessary to assure realization of present promising opportunities for the light metals in the aircraft field, Eugene E. Wilson, president of the Aeronautical Chamber of Commerce, told the committee.

"The future of air transport, civil and military, is more dependent upon light metals than that of any other industry," he said. "The extent of the postwar de-

mand for light metals from the aircraft manufacturers cannot be foretold because the volume of postwar production of military and commercial planes largely depends upon public policy, which Congress must determine."

There will be little change in the relative quantities of steel, iron, aluminum and magnesium in civilian postwar cars as compared with the ratios established in prewar production, according to J. S. Laird of the Ford Motor Company. Magnesium is unsuitable for more than a few of the many items which make up an automobile, and its use is ruled out for engine parts which are highly stressed, or must be wear-resistant, as well as for water-cooled cylinder blocks and heads, he stated. Aluminum castings have been used successfully, he continued, in cylinder blocks, cylinder heads, oil pans, pistons, timing gears and housing.

"Wheel type and tracklaying tractors for farm or industrial uses depend largely upon their weight to develop satisfactory draw-bar power," declared A. W. Scarrott of the International Harvester Company at one of the hearings. Tillage and harvesting machines, such as plows, harrows and mowers, also require weight, so that no appreciable use of the light metals may be expected in these machines, he said, and their use will be confined to relatively few parts.

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GENETICS

Multiple Births More Frequent Among Negroes

► WHEN the stork carries a double burden he is more likely to set it down in a Negro home than among whites, analysis of U. S. birth registration data revealed to Prof. Herluf H. Strandkov, of the University of Chicago.

Quadruplets, very rare among white births, occur more than twice as often among the Negroes, Prof. Strandkov found. There are four babies born at the same time to white mothers only once in every 570,196 confinements. Quadruplets are born to Negro mothers once in every 237,897 confinements.

For triplets the figures are one set for each 9,182 confinements for whites; one in 5,076 for Negroes. Twins come once in 88 or 89 confinements for whites; 1 in 70 for Negroes. The average for all races in the United States is 1 in 86.

The findings on the difference in frequency of multiple births among different races are reported in the *American Journal of Physical Anthropology*, (March).

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