

## CONSERVATION

# Water Needs Cleaning

Although progress has been made in solving water pollution problems, a pollution control bill would offer more incentive to industry for participation—By Barbara Tufty

► CITIES and private industry in the United States are making progress in cleaning up our rivers and streams and sweetening our life liquid. But the municipalities have been able to do the most.

Using continued financial grants of up to \$100 million a year from the Public Health Service, municipal areas throughout the United States have made definite gains on the most immediate and pressing contamination problems facing the nation today—water pollution.

Other factors are helping to solve but have not yet conquered this problem. One is growing public awareness of the filth flooding land and endangering health and lives. Another is the continued efforts of industry to clean waste and contaminants from water before dumping it back into the rivers.

As the population of the United States continues to increase, standards of living have become higher, and more water is demanded. Today in the United States about 100 to 150 gallons of water are used per person each day, about 10 times as much as is used by the average citizen of Europe, who consumes only about 10 or 20 gallons each day for all needs.

In addition to our increasing demands, our highly technical society dumps tons of refuse each minute into the rivers sweeping to the sea—including pesticides, radioactive wastes, toxic chemical wastes and synthetic detergents.

Industry needs and uses the most water. It takes about 1,400 gallons of water to produce a dollar's worth of steel; nearly 200 gallons for a dollar's worth of paper; 320,000 gallons to produce a ton of aluminum; and 600,000 gallons to make one ton of synthetic rubber, according to an engineer in the Federal Government's water pollution control program.

All this water passes through the labyrinths of industry and is then turned back to nature's streams and rivers in various degrees of cleanliness. The same flowing water is used and reused many times. The water of the Ohio River, for instance, is used 3.7 times before it runs into the Mississippi. As the Ohio River flows past Cincinnati, one quart in every four has been through a kitchen sink, bathroom fixture, factory or mine dump. Below Denver, the South Platte at low water is four-fifths polluted from sewage.

In attempts to help clean up its own water, American industry spends more than \$100 million each year on research and equipment, according to a report published by the National Association of Manufacturers. In a survey of more than 2,800 companies, the Association found that 69% had installed facilities to treat all or part of their waste water before discharging it into rivers.

Yet these efforts of industry are not adequate. More money is still needed to solve the problems of purification.

The perpetual pollution control bill,

which continually comes before Congress and has never been passed, offers relief to industry by permitting companies to write off in one year the cost of installing equipment for controlling pollution. This bill, S.4, the "Water Quality Act of 1965," has been passed by the Senate but has not yet been introduced in the House.

Passage of the bill would offer incentive to industry to spend necessary money on equipment. Some states have reduced taxes on pollution control efforts by industries, but more financial help is needed.

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## FORESTRY

## New Logging System Like Field Artillery

► A NEW FULL-TREE logging system, which can triple or even quadruple lumber output, has just completed tests on a forest site near the Swedish-Norwegian frontier. The heart of the new system is an entirely new type of machine which, in about 20 seconds, cleans an average-sized tree of all limbs.

While there are efficient machines for taking the bark off logs, the process of removing branches or limbs still constitutes a difficult and expensive bottleneck for the mechanization of forestry work. Performed by means of manual power saws, as is generally the case in Sweden, removing all tree limbs accounts for over 40% of total time for felling, limbing and topping.

Eije Mossberg, head of the Swedish Cellulose Company, which owns vast forest areas, commissioned the company's engineering subsidiary, Sunds Verkstader AB, to investigate the development of a limb-remover suitable for Swedish conditions.

The work resulted in the presentation of a complete logging system, a station composed of several mechanized units of "light field artillery" type which can be moved easily from one site to another.

The mechanical components consist of the limbing machine mounted on two heavy-tire wheels, a diesel-generator set, a slashing arrangement for direct cutting of limbed timber into lengths and simultaneously sorting of saw logs and pulp wood, and a separate cabin from which one man controls all these operations by means of push buttons.

The trees are fed into the limber by a tractor with a grip device which swings in a complete circle. The limber is equipped with eight cylindrical steel cutters, driven by separate electric motors and pressed against the trunk by means of a powerful spike roll at a speed of 148 feet per minute and arrives at the slashing machine completely freed from limbs. The prototype is designed to cope with trees up to 24 inches in diameter and limbs of up to four inches in diameter.

The new machine, which weighs only five tons, can increase lumber output from about 20 cubic feet with modern conventional methods per man-hour to about 70 cubic feet. Extremely mobile, it can be fully operational within 90 minutes of arrival at a new location.

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Paul Lindgren

**TREE STRIPPER**—The new Sund limber which can completely strip a 50-foot tree in 20 seconds is shown in action.