

would then return to their own law-making committees with a clearer idea of the consequences of their actions.

If it were 1913, for example, a worried citizen might tell the select committee, "This man Henry Ford has set up an assembly line for his automobiles. He will be able to turn them out like flapjacks. They'll kill people and horses on the roads, and poison the air to boot."

Then the committee might delve into the matter and determine that there are indeed aspects of the automobile that need taming—instead of waiting, as Congress has, for 53 years to establish auto standards.

**Current grist** for the committee's mill is presented by Dr. Luna B. Leopold of the Geological Survey. Even a simple dam on a stream can "short-circuit" the hydrological cycle, increase evaporation of the available water and lower adjoining water tables, he says. Further, evaporation increases the concentration of salt in the water. If used for irrigation, the fluid can build up salt levels to the point of poisoning the soil. If even more water is applied in an effort to leach out the salts, the fields can become waterlogged, killing any crop. On the once-fertile Indus River plain in West Pakistan, Dr. Leopold reports, an estimated 100,000 acres are being lost in these ways each year.

If only it could have been foreseen. . . .

## Quinine Cartel On the Record

An international price-fixing conspiracy which has forced a 500 percent jump in the cost of two life-saving drugs was exposed in infinite detail by the Senate Antitrust and Monopoly Subcommittee last week.

The Senate now has 120 documents to support what has long been suspected: a cartel headed by Dutch and German companies has virtual control of the world's supply of quinine and quinidine.

Dr. John M. Blair, chief economist for the subcommittee chaired by Senator Philip A. Hart (D-Mich.), outlined the specific activities of the cartel representatives' efforts to control the world market. Dr. Blair has assembled the names of companies and their spokesmen and the dates, places and substance of their meetings in European hotels from December 1959 through October 1962.

**The cartel, says Blair,** has what amounts to sole access to the source of quinine, and decides what the price of the raw material shall be at any time, who can buy it and how much, and who can sell it to whom.

Quinine, which comes from the bark of cinchona trees growing in Indonesia and the Congo, has been subject to cartel control by Dutch and German interests for three-quarters of a century. Though some attempts have been made to break it up (particularly in the 1930's), none has been successful.

Quinine, once the world's only malaria cure was replaced after World War II by more effective, less toxic synthetics but was called back into use about 1963 when American soldiers in Vietnam began coming down with falciparum malaria (SN: 11/19/66), a strain that responds only to quinine therapy. Quinidine is a quinine derivative used to regulate heart beat, primarily in older persons.

Manufacturers who were buying quinidine in bulk form for less than



Agriculture

Worker strips bark from cinchonas.

\$1.00 an ounce in 1965 are paying from \$4.00 to \$6.00 this year, and the cost to patients rose from approximately \$5.00 to \$10.00 for an average month's supply. The upward swing was tied to a shortage of supply that is apparently more contrived than real, Blair's study reveals. This is apparently so even though efficiently operating cinchona plantations in Indonesia are said to be less plentiful than they were a few years ago; President Sukarno's government apparently saw little value in them and failed to encourage their upkeep.

The question of quinine supply, at least to the U.S., has been kicking around for several years. The General Service Administration's decision in August 1958 to sell 14 million ounces of pure quinine from Federal stockpiles precipitated considerable concern among

cartel members that the entire world market would be upset if the U.S. stockpile was sold to companies that would undersell the cartel suppliers. Diplomatic maneuvering between the Dutch ambassador to the U.S. and the State Department assured sale of most of the drug to the Dutch. Only one of three U.S. companies able to meet bidding requirements actually got any of the stockpile quinine.

**By early 1964** when a decision was made to halt U.S. sales, all but 4.1 million ounces of the allotted 14 million had been sold. The cartel, using the Dutch firm as a front, managed to get about four-fifths of the supply at an average price of slightly over 21 cents an ounce.

British and French producers were involved in the cartel in hopes of getting a guaranteed cut of the Dutch and German supplies. In February 1960, at the third meeting of the cartel members, the Dutch assured the others the conspiracy would not be found out. They said the U.S. would not know it was selling to a cartel and accurately predicted GSA would ask no embarrassing questions.

The 1964 freeze on the U.S. quinine stockpile ostensibly came because of fears that the Vietnam war might lead to a significantly increased demand for the drug in treating malaria victims. In spite of steadily rising domestic prices for quinine and quinidine in the U.S., GSA never released any of its stockpile supplies for internal use. Some Government sources say the decision not to flood the U.S. market with low-priced quinine and to stop selling abroad was a move to guarantee that the cartel would never literally hold the entire world supply in their hands, even though it has a corner on the market.

**What effect** the Hart Committee hearings will have on the price of quinine and quinidine in the U.S. is hard to say; avenues of legal recourse are narrow. Although the possibility of establishing a code of international trade rules governing business practices is under study by the Hart Antitrust and Monopoly Subcommittee, diplomatic channels are likely to be the only recourse at the present time.

## Canyon Controversy: Second Round

The apparent second-time loser in the legislative battle to win authorization of the Central Arizona water supply project claims he sees victory ahead.

" . . . I am guardedly optimistic," says Representative Morris K. Udall (D-Ariz.), "there's just too much at stake here for people not to compromise."

**What is at stake**, basically, is the future of the area surrounding Phoenix and Tucson. Without Colorado River water that the Central Arizona Project is to bring in, it faces permanent drought and an abrupt halt to its economic expansion (SN: 2/18).

Tapping the Colorado would solve the problem, at least for the present, but there are three main obstacles.

Foremost is the matter of Bridge Canyon or Hualapai Dam. This was, under original and once-beaten proposals, to have been built in the Grand Canyon, just downstream from Grand Canyon National Park. A hydroelectric dam, its income was to have helped pay for the aqueducts that brought water to Phoenix and Tucson.

But this year, as last, conservationists, led by California's Sierra Club, have unrelentingly opposed the dam.

Reclamation Subcommittee, but the cost to the Federal Government could be cut in half if its generating capacity were raised from 1.5 to 5 million kilowatts.

This could be done, he said, if other private utilities would join the Department of Water and Power in prepaying their share of the cost of enlarging the power plant and building their own transmission lines. All the electricity produced would be absorbed by the market within six years after the plant goes into service, he declared.

Goss proposed that the dam be used, in off hours, for pumped storage of water to be used in peak demand periods for generation of extra electricity.

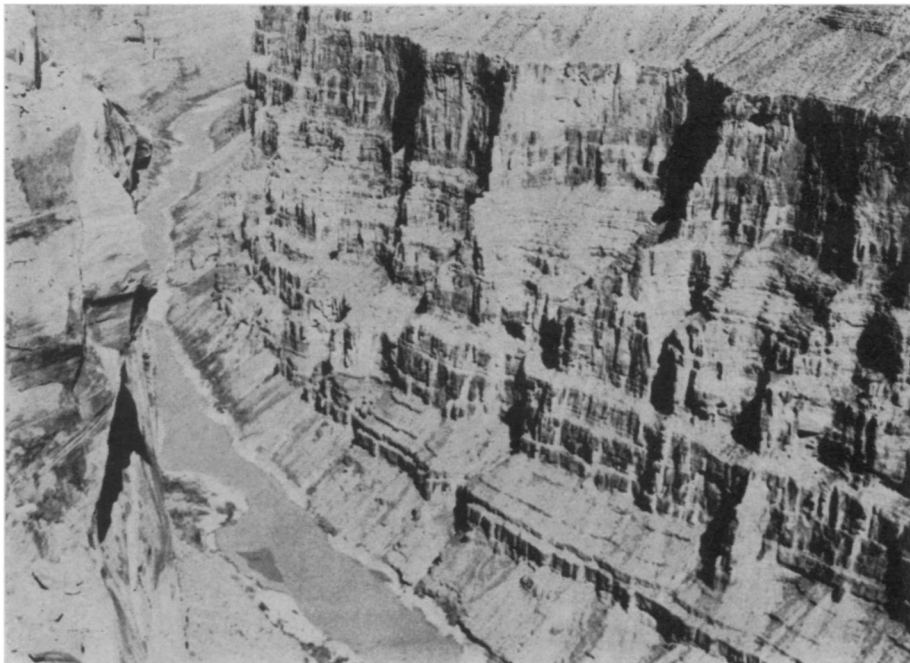
**Second only** to the Bridge Canyon Dam controversy is California's insistence on a guarantee of 4.4 million acre-feet of water a year no matter

tees to California may be settled by negotiation, Udall believes. "It's rather apparent that unless California and Arizona are united we are not going to get anywhere," he says, observing "Our positions may not be so hard as they appear." California is also seeking Federal funds—some \$1 billion in proposed water projects—Udall observes, feeling this gives him some political leverage.

Senate hearings are scheduled for the first week in May. "They'll pass a bill in short order," Udall predicts—most likely the Administration bill which leaves out the dam. House action is also expected by summer.

The final form of the bill will probably be settled in conference between the House and Senate.

"The situation is considerably brighter than it was last year," Udall observes, "although on the surface it seems like a pretty bleak outlook."



Sierra Club

At the heart of southwest water problems—the Grand Canyon.

And, this year, the Interior Department has withdrawn its once-firm support for construction of the dam.

Yet, California and Colorado legislators have made construction of the dam a prerequisite for their support of the CAP. Bills introduced by Senator Thomas H. Kuchel (R-Calif.) and Representative Wayne N. Aspinall (D-Colo.), to authorize the CAP, include the dam.

On March 17, Floyd L. Goss, chief electrical engineer and assistant manager of the Los Angeles Department of Water and Power, dropped what Representative Udall termed "the bombshell." Goss shot down economic arguments against the dam.

**Not only should** Bridge Canyon Dam be built, Goss told the House

how little Arizona gets. This was included in last year's proposals.

But it is inextricably linked to the question of how to augment the often sluggish flow of the Colorado which, in some years, just doesn't carry enough water for both Arizona and California.

A prime likely source of water for augmentation is the Pacific Northwest's Columbia River. Inclusion of a specific study of this in last year's CAP bill cost its sponsors the support of Northwest legislators.

This year, augmentation studies have been relegated to a proposed National Water Commission to be set up to survey the nation's water problems. Now, Northwest legislators support the Arizona project.

Even the problem of water guaran-

## New Tool for Teaching, Medicine

Better and faster teaching, help for heart attack victims, even intelligible conversation between men and animals may be on the horizon through use of a super tape recorder that can play back voices at any speed without changing their pitch or making them unintelligible.

The tape recorder is actually a device called a speech compressor, and a packed house at a session of the Institute of Electrical and Electronics Engineers last week heard it transform one of Julie Andrews' renditions from "My Fair Lady" into "Wouldntitbe-loverly" with perfect clarity.

The voice of one speaker at the conference was speeded up and slowed down until the listeners broke out laughing, yet the voice was always the same, never like that of Donald Duck or the Jolly Green Giant.

**Speech compression** is already being studied as a new educational tool capable of giving a student much more information in a given period of time, and, according to Dr. Robert D. Gates, chief educational investigator of the Philco-Ford Corp., planting it more deeply in his mind. As a result Dr. Gates envisioned more and more schools switching to four-day weeks, or even shorter ones, from use of speech compression.

In addition, news, statistical data, instructions and other messages can be monitored at high speed with considerable time savings, which could mean money to hard-pressed businessmen.

One curious phenomenon that results from speech compression is that after