

less persist. For one thing, it appears that many of the smog control devices already installed on used cars were faultily fitted, causing loss of compression and frequent stalling. Mechanics blame the devices, but the manufacturers of the devices claim the mechanics simply don't know what they're doing. State officials hope that this problem will disappear once mass-installation gets under way.

Even with these elaborate and expensive measures, scientists are far from satisfied. Dr. A. J. Haagen-Smit, professor of biochemistry at the California Institute of Technology, argued recently that while the state was tackling some of the dramatic causes of smog it was not paying sufficient attention to the less obvious factors. He estimated, for ex-

ample, that the improvement of traffic flow through major cities could reduce smog by 10 per cent by eliminating constant acceleration and deceleration.

The very dependence of Californians on individual autos rather than on some form of mass transit ensures a continuing smog problem, the professor indicated. Even with the smog control devices, he observed, the carbon monoxide fumes breathed by drivers during rush hours on the freeways dulled alertness and possibly even caused injury to health if exposure was excessively prolonged.

Clearly, whatever the advances in smog control that have been made in California, the long-range development of a mass transit system will have to be a part of the ultimate solution.

—PETER BART.

Raleigh: A Long Look Ahead

ONLY LATE and suddenly did North Carolina begin to realize that its generous natural resource of sixteen river basins would not forever carry clean water to the sea. In a still largely rural state, there long prevailed the frontier idea that every man has a right to do as he pleases with his land and his piece of the stream beside it. Not too many years ago it was not uncommon to see privies conveniently suspended over the banks of rivers and streams. Little towns, as they grew into larger ones, became only bigger back-houses careless of downstream folk. Such invidious individualism attended attitudes toward industrialization, too. Paper plants, fabric dyers, food processors added more poisonous pollution. And first protests were met with poor-mouthed reluctance by towns and factories to do anything about it.

Then, twelve years ago, a tall, slow-spoken state senator, Vivian Whitfield, from the rural downstream county of Pender, persuaded the legislature to au-

thorize a clean-up program under a North Carolina Stream Sanitation Committee. He got tough laws couched in clear language. Then he secured his own appointment as chairman. With both push and persuasion, the committee has apparently done a very good job, but the problem grows as it is confronted. Unintentionally, perhaps, man is an ingenious polluter even as programs against pollution are pressed. In the state's beautiful mountains one big paper company has spent \$2,000,000 on a pollution abatement program. Everyone hoped that the white scum would disappear from the Pigeon River below its mill. But because of increased production, the clean-up program is barely keeping pace with the rate of pollution.

Similarly, a huge textile plant nearby merely experiments with a solution while the waste runs down the mountains and the hills to the sluggish flow in the low country streams. And in the coastal country a big phosphate mining and processing industry creates new prob-

lems. But there the lure of a multimillion-dollar investment and the several thousand badly needed jobs it will create pose a common dilemma. Many wonder whether keeping the Pamlico River free of this operation's silt is more important than forgetting the pollution and encouraging the company's unfettered growth.

Whitfield and his associates have summed up their purposes in a simple statement. "We come as doctors of sick streams," he says. More sharply, he has declared, "In saving them from the asinine stupidity of gradually destroying their water supply, we are saving the state for future generations."

The task has not been easy. It has confronted the reluctance of townspeople unwilling to raise their tax levies to build expensive sewage treatment plants. It has involved the difficulties of dealing with wastes that are a by-product of the industrial growth which is welcomed everywhere. Under diplomatic prodding and legal threats, many towns and factories have cleaned up. But in some cases polluters have avoided the high cost of good citizenship by excuses or halfway measures.

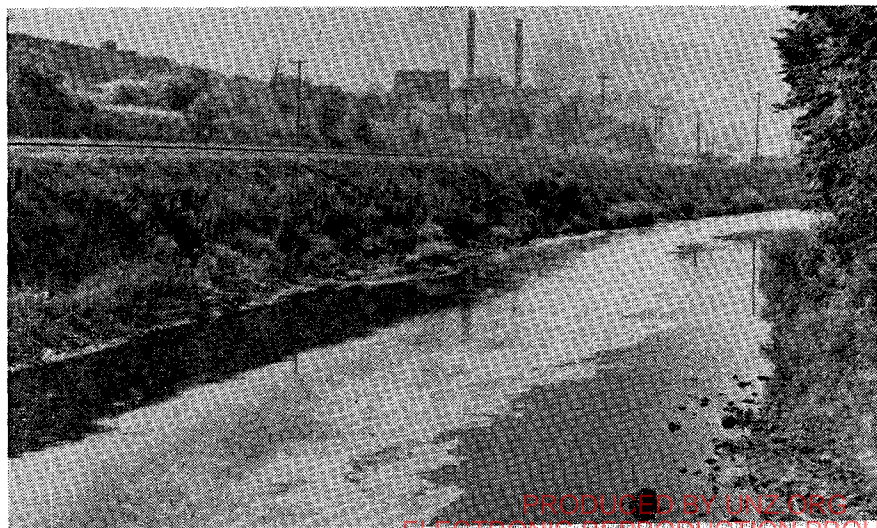
Yet the pressure against pollution grows. Sometimes rural individualism has turned into a rural insistence on action for the common good. People close to the land, fishermen as well as farmers, often have been most offended by poisoned streams. They roared when dead fish by the thousands floated belly-up in the polluted Roanoke River. The country-dominated legislature responded to their demand for water in which rockfish, brim, or bass could survive. And businessmen increasingly recognize that demands for clear water for the future are more important than tolerance of pollution for industry already here.

The seven-man stream sanitation committee, headed by Whitfield, has shown accomplishment. It has quasi-judicial powers and can compel public and private officials to act with the threat of fine or jail term hanging over them. The threat has been made several times but never used. Satisfactory compliance has been generally accomplished. And federal funds have added a carrot to the stick wielded over municipalities. In recent years the committee has received a steady grant of \$2,300,000 annually to parcel out as a 30 per cent grant to offending towns that are willing to pay the other 70 per cent for needed sewage treatment plants.

A detailed study of the last of the state's sixteen river basins was completed about a year ago. Its findings amount to administrative law setting quality standards for all streams and public and private interests on their shores. The polluters are now legally labeled as such. Most are expected to

The old mill stream—Pollution in the Pigeon River from a mill in Canton, North Carolina.

—N. C. Wildlife Commission.



respond to the carrot and the stick. But there will be foot-draggers. Moreover, pollution control sometimes seems to lag behind pollution problems. Even where pollution in once-dazzling mountain streams is apparently overtaken and fully checked, clean water does not immediately follow. In the state's busy mica-mining operations another full decade will pass before all the mica silt and slime dumped into the streams disappear.

Air pollution has not yet been a problem. But the state, as the chief tobacco-

growing area, is much concerned about charges that it exports pollution in the smoke of the cigarettes it grows and rolls. It is not ready to admit that charge. The smell of tobacco on the streets of Durham and Winston-Salem smells like prosperity, as it does in the eastern tobacco-marketing towns. And between poison and prosperity, if such a choice there should have to be, North Carolina would rather eat hearty than starve in the sparkling air.

—JONATHAN DANIELS.

Chicago: Doing Something About It

IN SEPTEMBER 1963 a Congressional committee investigating sources of air and water pollution in the Chicago area saw nothing but polluted streams and rivers and neighborhoods completely engulfed in smoke.

Although it was apparent that the situation was getting worse daily, corrective measures were slow in coming. Then, almost overnight, as if moved by a great spirit, Chicago did more than just discuss the matter. Now concerted drives are under way to clean the air we breathe and put an end to the constant polluting of the water in the Calumet region just south of Chicago, where Indiana's major industries are located.

The biggest steps were taken just recently. In one instance, the Illinois Air Pollution Control Board served notice for the first time that corrective measures must be taken to prevent pollution from certain industries. And early in March this year, a conference was called by the Secretary of Health, Education and Welfare to underscore for officials in Illinois and Indiana the seriousness of water pollution in the Chicago area. Again, corrective measures were ordered.

The basic problems have, of course, existed as long as Chicago has been an industrial center. Thirty years ago Governor Horner of Illinois complained to Governor McNutt of Indiana that the health of Chicago's 4,000,000 residents was being endangered by pollution from the Calumet region. The Chicago City Council even went so far as to adopt a resolution asking a federal government order against pollution of Lake Michigan (the resolution indirectly referred to conditions believed to originate in Indiana).

In the intervening years the situation has worsened. But at last something is being done. As a result of a special conference in Chicago in March, industries and cities on the southern end of Lake Michigan have been ordered by the U.S. Public Health Service to halt the bacterial pollution of the lake by next April. The order also specified that

within six months programs must be undertaken to control the danger from other pollutants dumped into the water. The alternative is legal action.

At the conclusion of the hearings it was alleged that:

1. Interstate pollution endangering health and welfare exists in the waters of Lake Michigan, the Grand Calumet River, the Little Calumet River, and their tributaries.

2. Industrial wastes from Indiana contribute to pollution in Illinois.

3. The Illinois-Calumet industrial area contributes to pollution in Indiana communities.

Conferees unanimously recommended the following remedial action to protect the Chicago water supply:

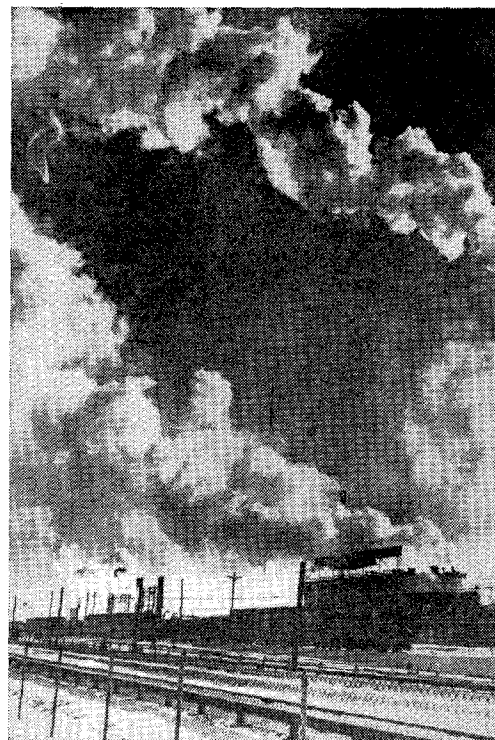
1. Bathing beaches in Indiana should be considered unusable if the bacteria concentration exceeds 1,000 organisms per 100 milliliters of water. (Chicago has no such restriction.)

2. A technical committee should be established to evaluate water-quality criteria and make recommendations to a second conference in September.

3. The Indiana Stream Pollution Control Board, the Illinois Water Sanitary Board, and the Metropolitan Sanitary District should take immediate action to give all sewage at least secondary treatment plus adequate effluent disinfection within a year.

4. Industrial plants should begin to sample their effluents and place reports in open files.

At least one leading Chicago spokesman, Frank Chesrow, president of the Sanitary District, believes only drastic action will prevent a loss of the lake water and beaches forever. "The cities and towns on the lake are not doing a good job," he says. "And state agencies are unable to cope satisfactorily with the issues since interstate problems are involved." He believes "the federal gov-



—U.S. Public Health Service, Division of Air Pollution.

Challenge in Chicago—Manufacturing plants at full steam ahead.

ernment should enforce anti-pollution controls under Congressional authority."

Scientists from the U.S. Public Health Service warn that pollution in the Chicago area is especially serious because sluggish lake currents may make it impossible to improve the situation. Three steel companies and four oil refineries have been labeled as the main culprits. (All are in Indiana.) Industrial wastes such as sulphuric acid, ammonia, iron, and oil caused the major part of water pollution, materially cutting down animal and plant life in that area. A Public Health Service study further showed that unchlorinated sewage and some untreated sewage dumped into the waterway system by twenty-one municipalities and sewage treatment plants contributed to the increase of harmful bacteria in the lake.

H. W. Poston, a Health Service Official who is director for water supply and pollution control for the Chicago region, sums it up: "People are afraid to talk about pollution today, just as they were afraid to talk about TB many years ago. The more you do talk about it the better are the chances it will be controlled. The problem, however, is more serious, especially around the shoreline, because of hundreds of new chemicals being dumped into the lake and the continuing growth of industry.

The job of curbing air pollution in Chicago proper is in the hands of James V. Fitzpatrick, director of the city department of air pollution control. The agency is now three years old. In just one year—1963—Fitzpatrick and his office