

CONSERVATION

Game Restoration Fostered In Combating Soil Erosion

GAME BIRDS and animals are being increased in numbers as a profitable by-product of the Government's war against soil erosion. At the New York meeting of the American Game Conference, Ernest G. Holt, chief forester of the U. S. Soil Erosion Service, told of encouraging results already achieved as a beginning, and of further steps that can and should be taken as the work matures.

Growing trees, shrubs and smaller plants will be the main reliance for anchoring the soil after the worst gully-ing has been checked by dams and other engineering devices. These plantings, Mr. Holt said, are being selected with special thought to their value as game cover and food sources. Further steps to insure success will include continued scientific supervision and cooperation with other agencies, especially state and local authorities; encouragement of wildlife research, and maintenance of strict scientific standards; preferential treatment for native game species; and efforts to promote the highest possible standards of sportsmanship.

As a concrete example of results already accomplished, Mr. Holt cited the case of the Coon Creek erosion project in Wisconsin, which has now been in operation for a full year. Here the quail population has been brought through a winter with practically no losses, and the total stock of these birds nearly doubled.

Need Encouragement

Legal limitations on the amount of game killing are not enough, if we are ever to have a restoration of the game abundance our forefathers enjoyed. Positive encouragement must be given to all forms of wildlife, and the Federal Government is prepared to take the initiative vigorously toward this end, F. A. Silcox, chief of the U. S. Forest Service, told the Conference.

The policy of the Government in the past has been to offer aid and cooperation to the states in the protection of wildlife, but it has always left the initiative with the states. However, it has been found that in the era of more active and positive measures now found

necessary, state fish and game commissioners often find their hands tied. In some cases this is due to legislative limitations, which restrict them to protecting the birds, animals and fish. In others, lack of funds or other hindrances are operative.

Expressing gratification at the progressive wildlife policies of many of the states, and the willingness of the Forest Service to continue and extend cooperation with these policies, Mr. Silcox continued:

"But there are other States in which—despite the cooperative attitude of game commissioners and continuous efforts by the Forest Service—no action, or obviously inadequate action, is in prospect. I want to make it perfectly clear that in such States, and under such circumstances, the Forest Service intends to take the initiative.

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FISHERIES

U. S. Initiates New Deal for Anglers

A NEW DEAL for fishermen with rod and reel was announced by Commissioner Frank T. Bell, of the U. S. Bureau of Fisheries, before the recent meeting of the American Game Conference in New York. Hitherto the work of the Bureau has been concerned mainly with the promotion and protection of commercial fisheries; but in Mr. Bell's concept the fishing sportsman is entitled to a "break" as well, and he has taken steps to see that he gets it.

Mr. Bell said: "I found a very decided demand for some kind of a service for anglers and created a division to meet the need. From the number of inquiries it received and the number of anglers and others who have appealed for assistance and advice, or information, on almost every conceivable subject pertaining to fish and fishing, I am convinced this division is rendering a much needed service to the angling fraternity."

In order that the fish may be there when the fishermen go fishing, the Bureau is continuing its very extensive work of hatching and rearing young

stock for planting in streams and lakes. A new policy, first adopted by the Bureau as a result of lack of funds, has been the suspension of prepaying shipping charges on planting stock which it gives away. It is still possible for any one really interested in the promotion of better fishing to obtain free young fish, but they must now come and get them at the hatchery, or else help defray distribution costs. This, Mr. Bell pointed out, eliminates the "something-for-nothing boys," but does not discourage the true sons of Izaak Walton.

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PUBLIC HEALTH

\$10,000,000 for Improving Health of the Nation

INVESTIGATIONS of health problems that vitally affect the lives of millions of Americans are needed in the immediate future, and there will be plenty of work for the approximately \$2,000,000 research portion of the \$10,000,000 health funds provided in the Administration's economic security bill before Congress.

Pressing problems are awaiting solution and disease fighters of the U. S. Public Health Service and the National Institute of Health are eager to extend and push forward their fundamental research.

Half a million men working at stone and granite cutting and similar "dusty" trades are victims or potential victims of silicosis, a lung disease that is serious in itself and more serious because it predisposes to tuberculosis. How can these men and other industrial workers be protected from the hazards of their trades?

Streams and lakes on which whole population groups depend for their drinking water are so badly polluted by industrial wastes that they are unfit for use. How can these waters be reclaimed and made safe and others saved from this fate?

Can the threatening spread across the nation of Rocky Mountain spotted fever and typhus fever be stopped before these diseases grow to the proportions of the old-time plagues that spread devastation throughout the land?

It is easy, too, to see where the other \$8,000,000 can be wisely spent in measures to protect the national health. It is no secret that city, county and state health departments have been badly crippled in their vital services because of depression budget cuts. On the average, personnel and budgets for these

local and state health services have been reduced about 20 per cent., the American Public Health Association estimates.

The U. S. Public Health Service has already been given \$1,000,000 from emergency funds to help out in this situation.

"But something more than these sporadic and temporary measures is needed to provide effective, well planned and conscientiously executed full-time health supervision," the *American Journal of Public Health* (January) points out.

"Obviously, public health service along lines now generally accepted and known to be effective, if extended to reach a large majority of the popula-

tion, would make a real contribution toward economic security through minimizing the tremendous annual loss from preventable diseases which now amounts to hundreds of millions of dollars."

With \$8,000,000 the federal health service can give much-needed aid to local health departments in their fight on malaria, venereal and other preventable diseases and in their efforts to provide public health nursing for state, city and county health authorities; and can help these officials to get more accurate and prompt reports of new cases of communicable diseases, so that outbreaks of smallpox, scarlet fever or meningitis, for example, can be checked at their start.

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ENGINEERING

Photographs Reveal Process Of Diesel Engine Combustion

USING special glass windows resisting temperatures up to 3,500 degrees Fahrenheit, aviation research scientists have just discovered how fuel oil burns in a Diesel engine.

New facts which are expected to advance the possibility of using Diesel engines in aircraft have been found by taking high-speed photographs through these windows. These facts were reported by A. M. Rothrock of the National Advisory Committee for Aeronautics Laboratories at Langley Field, Va., before the meeting of the Institute of the Aeronautical Sciences, in New York.

Mr. Rothrock showed motion picture film before the aviation meeting taken at the rate of 2,500 frames a second. The film upset views about how fuel burns in such engines; opinions which have existed since the Diesel engine was first invented in 1893.

The characteristic feature of the Diesel engine is that fuel oil is injected into the air of the cylinders which has previously been compressed by the stroke of the piston. Under compression the air temperature rises until it is high enough to ignite the injected oil. No electric spark is necessary. Previously it had been supposed that the oil began to burn as soon as it came in from the fuel jets. Mr. Rothrock's film proves that combustion occurs only after the fuel fills the cylinder.

G. W. Lewis, director of aeronautical

research of the N.A.C.A., told Science Service the new technique should speed research in the Diesel engine field. Heretofore, he said, various types of fuel jets—as only one example—were made and inserted in the cylinders. How well they worked could be determined only roughly as long as it was not possible to see or photograph what was going on inside during combustion.

With the new windows and high-speed photography, however, rapid checks on performance can be obtained.

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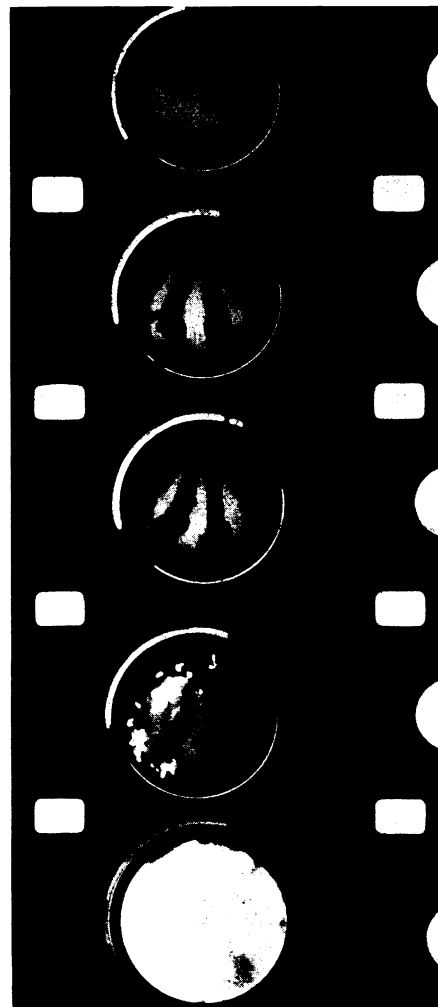
AVIATION—METEOROLOGY

Better Weather Service Foreseen for Aviation

BETTER weather service for the airways of America is foreseen by D. M. Little, chief of the U. S. Weather Bureau's Aerological Division, who described to the Institute of Aeronautical Sciences the recent extensive improvements in forecasting and weather reporting for those who fly.

The relatively new weather forecasting techniques, involving air mass and frontal analysis methods, have already been put into use in many aviation forecasting centers, Mr. Little explained.

At ten important air terminals, Atlanta, Burbank, Chicago, Cleveland, Dallas, Kansas City, Newark, Oakland, Portland and Salt Lake City, there is



GOING ON INSIDE

Special heat-resistant glass windows enabled A. M. Rothrock, National Advisory Committee for Aeronautics scientist, to obtain these first photographs of fuel oil burning inside a Diesel engine cylinder. The top pictures show the fuel entering the cylinder through jets, the fourth shows tiny spots of flame beginning to appear, and the bottom one shows complete combustion one ten-thousandth of a second later than the previous view.

now 24-hour daily service, requiring the services of four highly qualified forecasters at each of the centers.

One of the recent improvements is the issuing of special trip forecasts for aviators, when requested, for periods up to 30 hours in advance to take care of long transcontinental flights which have become numerous in recent months.

Each day, in cooperation with the Army and Navy, weather sampling flights are made to heights of 17,000 feet. This is a new aid to weather forecasting.

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