

tion consultant and mechanical engineer, who described it.

Mr. Hall said that improvements in current radial type airplane engines are producing only a small overall gain in performance because the region of diminishing returns is being approached. He urged that a barrel-shaped engine design be tried with a small frontal area to cut down wind drag. "You wouldn't shoot a bullet crosswise," he declared, in characterizing the air resist-

ance of the radial type airplane engines.

Best engine used in the new Martin bombers of the U. S. Army Air Corps weighs 1.2 pounds per horsepower developed. A few experimental motors have attained 0.98 pounds per horsepower they develop. If the Diesel engine described by Mr. Hall can be made practical it would cut weight per horsepower by 33% and be a revolutionary advance in aviation.

Science News Letter, March 30, 1940

WILDLIFE

Good Fishing Requires Planning and Hard Work

Stocking Streams and Lakes With Fish Requires More Than Merely Dumping Fish Into Unpopulated Water

FISHERMEN, casting carefree flies over trout streams in national and state parks and forests, are not getting the benefit of an equally careless bounty of nature. A great deal of careful human planning and hard work—not to mention public funds—stands unobtrusively behind the scenes in every fishermen's paradise.

What stocking streams and lakes with fish really means was brought out sharply in a series of discussions before the meeting of the Fifth North American Wildlife Conference in Washington. Participants included Willis King of the National Park Service, R. R. Hill and Ancil Holloway of the U. S. Forest Service, C. Willard Greene of the New York State Conservation Department and a number of other speakers.

Many persons, including some of the most enthusiastic sportsmen, seem to have the idea that stocking empty water with fish requires only the dumping in of a quantity of young fish—any kind of fish—and the more the better. Mr. King cited an actual case, in which 65,000 warm-water fish such as catfish and crappies were planted in a 70-acre lake created by a dam. Then several thousand rainbow trout (a cold-water species) were added. Obviously, a lot of fish (and hence, not a little money) went to waste there, not only from overcrowding but from the promiscuous dumping in of species which could not have lived in the environment under any circumstances.

Proper stocking needs thorough ecological investigation of the area to be

stocked first of all, then proper planning to fit the best-adapted fish into the environment in such numbers as not to exhaust the food supply and at the same time to meet as well as possible the demands of the ultimate consumer, the angler.

Mr. Hill told of a planning program worked out in one specific major fishing area, Michigan, in which not only these requirements are met but the sometimes overlapping activities of several public and private agencies, all eager to keep the streams well filled with fish, are coordinated and kept from wasteful duplication. This scheme was put into operation for the first time last year, and further developments are looked forward to with interest.

The amount of stocking that has to be done in some waters is astonishing. Mr. King spoke quite calmly of having to meet the needs of a hundred or more fishermen per mile, in some of the trout streams of the Great Smokies. To take care of such a situation, the fisheries men must stock the streams not only with large numbers of the customary fry and fingerlings, but with full-sized trout from the rearing ponds of the hatcheries. After allowing a suitable period for the fish to become suitably "wild," the streams are opened to the anglers.

Science News Letter, March 30, 1940

Crows Destroy Ducks

CROWS are destructive enemies of wild ducks' nests, at about eight of the great refuges that have recently been

established to encourage the broadbills comeback, Merrill C. Hammond of the U. S. Biological Survey reported to the Wildlife Conference as a result of his studies on the predations of the black thieves.

Key to crow danger to ducks consists, at least in part, in the presence of suitable nesting areas for the crows near the nesting areas of the ducks. Where crows were not abundant, ducks suffered little. Counter-attacks on crows by the guardians of the ducks were usually followed by an improvement in the nesting situation.

Ducks may hide their nests very cleverly from human eyes, but that does not seem to save them from the crows. Indeed, Mr. Hammond stated, it seemed to be just these better concealed nests that crows were most successful in seeking out and robbing.

Certain species seem to suffer more from crow predation than others. Unfortunately, favorite duck species like mallard and redhead are among the more commonly attacked.

The crows, of course, are after the eggs for food. Attacks are most apt to occur during the laying period, when the nests contain eggs but are left uncovered during daylight hours while the parent birds are out feeding. Once incubation has commenced and the eggs are kept covered most of the time, the number of attacks diminishes.

Science News Letter, March 30, 1940

Houses for Ducks

IF YOU were suddenly asked, "What birds nest in hollow trees?" you would, of course, instantly answer, "Woodpeckers." It might come as a surprise to learn that some ducks also nest in hollow trees—unless you know your wood ducks. Wood ducks are the objects of special solicitude on the part of wildlife restorers.

In many prairie state areas there are not enough hollow trees for the needs of wood ducks, it was pointed out to the Wildlife Conference by Arthur S. Hawkins and Frank C. Bellrose, Jr., of the Illinois Natural History Survey. For this reason, wooden "bird houses" of inviting shape have been devised, and have received the approval of the ducks. Last year, over half of 350 board boxes set up on the bottom lands near Havana, Ill., had broad-billed tenants within four months. Further extension of the duck housing program is contemplated for the coming season.

Science News Letter, March 30, 1940

Protection Pays

IS IT WORTH while for farmers to protect and encourage wildlife? Demonstration that it is, even from a strictly financial viewpoint, was offered to the Wildlife Conference by Merrill C. Gilfillan of the Ohio Division of Conservation and Natural Resources.

Mr. Gilfillan deliberately chose one of the toughest problems in wildlife management that could be found in the United States: the northeastern part of Ohio, where there are many farmers all owning small, closely cultivated farms, and such big masses of urban population as Cleveland, Youngstown and Akron.

Cooperation of 23 farmers, with farms averaging only 68 acres each, was secured. They were shown how to make swamp and other uncultivable land as hospitable as possible to ducks, pheasants and other game birds, as well as to muskrats and other fur-bearing animals.

Carefully regulated hunting privileges were granted during the shooting season to city sportsmen who were more than willing to pay reasonable fees. In addition, the farmers themselves harvested muskrat and other pelts. Taken altogether, wildlife protection made this "useless" land yield about as much revenue per acre as neighboring cultivated fields.

Science News Letter, March 30, 1940

Coal Lands as Refuges

EMPTIED-OUT strip mines, hitherto disregarded as man-made deserts of no possible profit to anybody, are being made to yield substantial returns in fish, fowl and fur, Lee E. Yeager of the Illinois Natural History Survey reported.

Strip mines are coal workings where

the overburden of soil is so thin that it is more practicable to clear it away with steam-shovels and drags than to sink shafts. When the coal is all taken out, the land is left as great raw ridges of piled earth and shale, interspersed with swamps and long ponds. Abandoned strip lands like this are common in several states of the Midwest.

Natural return of trees, brush and volunteer weed vegetation is beginning

to afford sufficient shelter and food to encourage a considerable wildlife population, said Mr. Yeager. Speeding up the natural process by setting out the right types of vegetation has been found profitable in many places. The stripped lands, which would ordinarily yield nothing, are producing more game, fish and fur than similar areas along the margins of fertile fields.

Science News Letter, March 30, 1940

MEDICINE

New Kidney Hormone Helps Gastric Ulcer Sufferers

HOPES for high blood pressure and stomach ulcer patients appeared in discoveries announced at the meeting of the Federation of American Societies for Experimental Biology in New Orleans.

For the stomach ulcer patients there will be the new hormone urogastrone, obtained from kidney excretions. First trials on ten normal persons showed that this hormone can stop the formation of acid by the stomach, Drs. A. C. Ivy, E. Wiczorowski and J. S. Gray, Northwestern University Medical School, reported. At present, ulcer patients must take alkaline powders to neutralize the acid in their stomachs so that it will not irritate the ulcers and cause bleeding.

The new hormone will be injected under the skin. Such injections at present cause swelling and reddening. Dr. Ivy and associates hope shortly to overcome this feature by further purification of the hormone, after which it will be ready for use in treating ulcer patients. The hormone treatment, by checking the acid in the stomach, will give the ulcer a chance to heal. To prevent

recurrence of the ulcer, Dr. Ivy said, the patients must learn a new philosophy of life which will help them to take their worries more calmly.

Science News Letter, March 30, 1940

Lowers Blood Pressure

PATIENTS with malignant high blood pressure which could not be lowered by any other means, were helped by two new kidney extracts described by Drs. Irvine H. Page and O. M. Hel-

PACKAGED PEACOCKS

Modern high-speed transportation makes possible express shipments undreamed-of a few years ago. Here are three rare white peacocks that recently went from Havana to Boston by air express, simply wrapped in paper and tied with cord. They travelled with a minimum of discomfort and arrived with their beautiful white plumage unsoiled and unruffled. Had it been necessary to use older, slower ways, they would have had to ride in crates, and would have reached their destination with feathers (and probably dispositions) considerably ruffled.

