CONSERVATION

Tax on Shotgun Shells To Help Conserve Game

SHOTGUN SHELLS will be saviors as well as destroyers of game, if Congress passes a new federal tax of one cent each, proposed in a bill which will be introduced within a few days, with the backing of the American Game Conference.

The bill will provide that all the money thus collected is to be used as follows: Not to exceed five per cent. of the total to be used for federal administration, research and enforcement; 55 per cent. of the balance to be allotted to the game departments of the various states, based on the number of hunting licenses issued, for the increase of game and waterfowl. A refund for shells used in trap shooting will be made by the states.

The remaining 45 per cent. will be expended by the federal government for the increase of waterfowl through acquisition or control, especially of breeding areas and also of additional refuge and concentration areas wherever they exist or can be restored.

Refuges will be established on the lines of migratory flight, coordinating with a system of concentration areas for winter use. An earnest attempt is to be made to secure the cooperation of Canada where are located the greatest and best of all breeding areas. The establishment of an international agency for this purpose will be sought.

Science News Letter, March 19, 1932

GEOLOGY

Explosions Used to Locate Oil Fields in Southwest

See Front Cover

A BEAUTIFUL explosion, so large that the camera could only catch a part of it with sufficient clarity to detail its streaked and billowing effects, is reproduced on the front cover of this week's SCIENCE NEWS LETTER. It is one of hundreds of such blasts that have located valuable new oil fields along the Gulf coast of Texas and Louisiana.

Several hundred pounds of dynamite buried about twenty feet deep is detonated. It explodes with terrific force, sending miniature earthquake shocks out in all directions. Some of these earth vibrations travel smoothly and swiftly through uniform materials; the paths of others are broken by irregular underground formations. Portable seismographs record the waves, and from a study of these records remarkably accurate knowledge of the physical properties and structure of the underground rocks is obtained.

In this manner a number of salt domes have been located beneath which drills found profitable stores of oil. Along the Gulf coast of Texas and Louisiana, where salt domes deep in the earth often indicate the presence of oil, more than fifty proven domes have been found since the successful introduction of geophysical prospecting in 1924.

The success of the earthquake recorder in locating oil on the Gulf coast focused world wide attention on this method of studying the structure of the earth thousands of feet below the surface. It has been applied to many forms of geological research. From the Gulf coast it spread to the mid-continent and California, and to other parts of the world, chiefly the Argentine, Venezuela, Russia, Roumania, Persia, North Germany and the Dutch East Indies.

The photographer of the striking cover illustration is O. C. Petty of San Antonio, Texas.

Science News Letter, March 19, 1932

AERONAUTICS

Navy to Have New Plant For Helium Purification

A NEW plant for the purification of the rare gas helium which is used in Navy airships is being planned by the U. S. Navy Department.

The new plant, for which bids will be opened on April 6, will be located at the Navy's new airship base at Sunnyvale, Calif. It is to have two units, each of which is to be a complete and self-contained outfit for the repurification of helium. Each unit will have a capacity of 15,000 cubic feet of impure helium per hour.

The Navy finds it necessary to maintain such a repurification plant because no fabric has yet been found which will completely exclude air from the airship cells containing precious helium.

A novel feature in the specifications of the new plant as issued to firms interested in bidding is the requirement that carbon dioxide shall be removed from the helium through the use of lithium hydroxide, a chemical used in alkaline storage batteries. Lithium hydroxide has never before been used commercially for this purpose.

Science News Letter, March 19, 1932

IN SCIENC

AVIATION

Safety Primary Feature Of New Mammoth Airplane

A NEW GIANT plane, with safety as its primary feature, has been constructed by the Dornier firm, builders of the huge "Do-X," and will be used by the German Air-Hansa, one of the leading Continental commercial air navigation companies. The new plane bears the designation "Do-K."

As described in the German scientific weekly *Die Umschau,* the "Do-K" is propelled by four air-cooled motors mounted under the wings in pairs, so that two of the propellers are "pullers," the other two "pushers." It is stated that the big plane can remain in the air if three out of her four motors go out of commission, and that she can be successfully maneuvered with only two of them going, even if they both happen to be on the same side. Because of these safety features, the "Do-K" is considered especially fit for night flights, and also for use over areas such as the Alps where emergency landings are impossible.

An average speed of about 125 miles an hour can be maintained, it is stated, with a practicable maximum of 140 miles an hour. A high fuel economy is also claimed.

Science News Letter, March 19, 1932

PLANT PHYSIOLOGY

Down-Growing Leaves Warn Of Leaks in Gas Fittings

TOMATO PLANTS are being used to detect illuminating gas leaks and the presence of other toxic gases in laboratories and greenhouses at Yale University, according to Prof. Carl G. Deuber, of the Botany Department. These plants are being used in the same way that canaries are used in mines.

In the presence of the merest traces of toxic gases the younger leaf-stems of the tomato plant grow downward, due to a more rapid growth of the cells on their upper sides. This is an absolutely reliable test for illuminating gas leaks, Prof. Deuber found.

Science News Letter, March 19, 1932

E FIELDS

PSYCHOLOGY

Deaf Persons Advised To Make Social Contacts

DEAF persons should use lip reading and hearing devices as aids in making contacts with normal persons, Ada Morgan Hill, director of the department of vocational advice of the American Federation of Organizations for the Hard of Hearing, said in a report to the Handicapped Section of the National Vocational Guidance Association.

"A deafened man's attitude toward life, his fellow workers and employers must be as nearly that of a normal person as possible. Children can be so trained and guided that they know no other attitude. Most of the adult hard of hearing today must be re-trained."

The vocational counsellor should direct the deaf person into trades and professions which do not require hearing acuity for success, Miss Hill said. But she pointed out that, on the other hand, the hard of hearing must not be greatly restricted, for many deafened persons are carrying on successfully in occupations which might seem closed to them. Their success is due to their resourcefulness and adaptability.

"Deafness should be looked upon as a handicap, not as an affliction," she said.

Although she emphasized the importance of finding and aiding the hard of hearing child in school, she does not approve of special classes for such children.

Science News Letter, March 19, 1932

ACOUSTICS

Engineers Aid Paderewski In Huge Piano Recital

HOW, in what critics call "the biggest piano recital on record," music from Paderewski's instrument was carried to 16,000 people in Madison Square Garden without the thin twang which a piano has when played in the great open spaces, has been revealed by acoustic engineers.

Listeners more than a block from the player were able to hear as well as those close to the piano because 47,000 square feet of sound-absorbing material had been stretched like a giant blanket over the heads of the audience, the engineers said. The false ceiling had been constructed after a careful investigation by representatives of Electrical Research Products Inc.

The chief difficulty with the acoustics of the big auditorium arose from the excessive reverberation, it was explained. Reverberation is the prolongation of sound by echoes from the walls and ceiling. A certain amount of it produces a natural effect, but if echoes are too long sustained they produce a jumbled sound.

Science News Letter, March 19, 1932

ASTRONOMY

Comet on Visit to Sun Re-Found by Astronomer

GRIGG COMET, a periodic visitor to the sun, has just been rediscovered by Dr. George Van Biesbroeck of Yerkes Observatory.

It is a faint object of sixteenth magnitude located in the constellation of Orion, the group of stars that can be seen in the southwestern evening skies. The Grigg comet, however, can be seen only with the largest telescopes. The location of the Grigg comet when discovered on Saturday evening (March 5) was right ascension 5 hours 31 minutes 49.3 seconds and declination north 5 degrees 3 minutes. It had no tail.

Astronomers throughout the world were notified of the reappearance of the comet by means of astronomical telegrams sent through Harvard College Observatory, Cambridge, Mass.

Dr. Van Biesbroeck was also the first to sight this periodic comet when it made its last return in 1927. The astronomer Grigg, whose name the comet bears, first discovered it in 1902. Then the comet was missed on its subsequent returns until 1922 when J. F. Skjellerup, an Australian astronomer, found it again. The comet is therefore sometimes called the Grigg-Skjellerup comet.

The Grigg-Skjellerup comet is one of nine periodic cometary visitors to this region of the solar system that may be expected this year. Those most likely to be observed are: Tempel's comet, Neujmin's second comet, Kopff's comet, Borelly's comet, Brooks' second comet, and Faye's comet.

On its previous visits the Grigg-Skjellerup comet has not been seen with the naked eye and it is therefore very unlikely that it will be easily seen by the public this time.

Science News Letter, March 19, 1932

PHYSICS

Electron Particles Again Made to Break into Waves

REPETITION by a modified method of the epoch-making experiments which first proved that electrons can behave as waves, has been reported to the American Physical Society by Drs. C. J. Davisson and L. H. Germer, scientists of the Bell Telephone Laboratories, New York, who won fame some years ago by their pioneer experiments.

A stream of electrons moving at high speeds was directed at a nearly glancing angle towards an etched metal surface, and caught on a photographic plate where the diffraction rings formed showed that the electrons behaved like light waves. Previously untried metals and a new method devised by Prof. G. P. Thomson of the Imperial College of Science and Technology in London were used in the recent experiments. Patterns of about 20 rings were obtained in the new experiments of Drs. Davisson and Germer from the metals gold, tungsten, molybdenum, cobalt, nickel, chromium and platinum. The arrangement of the rings was characteristic of the known structure of the metals.

Science News Letter, March 19, 1932

ZOOLOGY

Eagle Defeats Coyote In Battle on Frozen River

"A THRILLING battle between air and ground forces" is the way Ranger Andy Fluetsch of Glacier National Park describes a recent affray between a golden eagle and a coyote.

While patroling up the frozen surface of Kintla Lake, Ranger Fluetsch noticed a coyote starting across, carrying a large piece of deer meat. Then he saw a large golden eagle hovering overhead. Suddenly the bird executed a full-power dive, crashing into the coyote broadside and knocking him flat on the ground, with the result that the meat went sliding down the smooth surface of the ice.

As soon as both combatants recovered from the impact the fight started, the coyote charging the eagle, only to be beaten off with beak, talons, and wings. Fur and feathers flew in all directions.

At the first opportunity the eagle again got into the air and made repeated swoops down upon the coyote, knocking him flat each time he struck. Finally the coyote retreated to the woods and the eagle flew off with the meat.

Science News Letter, March 19, 1932