

WILDLIFE

Immense Duck Population Wintering on Refuge

WILD ducks have responded amazingly to the opportunities offered by new refuges, the U. S. Fish and Wildlife Service reports. A census of one Southern refuge, on the White River in Arkansas, shows a population of about a million and a half ducks, mainly mallards, and other species wintering there. Growth of food plants that ducks like is being encouraged, to meet the increasing demands.

Observers have noted an increase in the number of Canada geese wintering on the White River Refuge this year.

"The increase in the number of geese in Arkansas this year is remarkable," D. N. Graves, director of the Arkansas Fish and Game Commission reported to Service officials. "And the ducks have also increased substantially. It is evident that the Fish and Wildlife Service refuge program is bearing fruit. I have seen more ducks on the White River this year than I have ever seen in my life, and I hunted over what is now the refuge for many, many years."

Science News Letter, February 15, 1941

INVENTION

New Book Tells Story Of First "Tooling-Up"

THE FASCINATING story of the first "tooling-up" of a factory, which was accomplished in the face of a national war emergency 140 years ago, is told in a new book, *Whittling Boy*, by Roger Burlingame (*Reviewed, SNL, this issue*). The factory was tooling up for mass production of firearms, and the emergency was caused by the rise of a dictator out of a ruined, revolutionary state, to threaten the invasion of Britain and the founding of a world-dominating empire. The dictator's name was Napoleon Bonaparte.

Whittling Boy is the novelized story of the life of Eli Whitney, best known as the inventor of the cotton gin. The episode of the mass production of muskets came later in his career, after the cotton gin had become a firmly established part of the national economy—and Whitney (like many another inventor) had been cheated out of the profits on it to which he was entitled.

Alarmed by the early successes of Napoleon, and especially by the presence of the French fleet in the Caribbean, the U. S. Government had awarded Whitney

a contract for producing army muskets, and had advanced him \$20,000 to get production under way as rapidly as possible. After many months, Whitney had a factory building full of incomprehensible machinery—and exactly 500 finished firearms.

Called before President Adams, Vice-President Jefferson and a committee of skeptical military and civilian "experts," who knew that muskets must be very carefully made one at a time by highly skilled, hand-working gunsmiths, the inventor produced a box containing the mixed-up parts of ten muskets. He asked the members of the committee to select one part apiece, until all the parts for one musket were laid out on the table.

Then he requested one of the generals to take the parts and put them together, using no tools but his hands and a screwdriver—certainly no file to touch up the parts and make them fit. To the amazement of the group, the pieces all went together perfectly, producing in a few minutes a weapon ready for battle. The skeptic general, now fascinated, went on to assemble another and still another.

Then Whitney told the committee that the factory, on which the \$20,000 Government advance had been "wasted", was ready to turn out muskets in lots of 10,000. It was the beginning of standardized parts, machine tooling and mass production.

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WILDLIFE

Even Alligators Need Protection From Shooting

EVEN alligators are in need of protection from over-shooting, the U. S. Fish and Wildlife Service states. The big bull 'gators, 12 to 15 feet long, that used to yield hides for large-sized suitcases and other leather goods, are practically never seen any more, even in the deepest recesses of the South's greatest swamps. Old-time swampmen say there are plenty of five- and six-foot sizes, but no really huge ones.

However, where the reptiles have received protection, as on government refuges, they are already starting a comeback, and it is hoped that eventually selective hunting, which takes the big ones and leaves the little ones for replacements, will afford the resident hunting population a steady income source. The beginning years will be the hardest, for alligators grow very slowly after they reach about a ten-foot size.

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IN SCIEN

LANGUAGE—ANTHROPOLOGY

Gathers Language Scraps Of Four Indian Tribes

FOUR extinct southern Texas tribes, that Spanish explorers once fearfully dubbed "wandering and cannibal Indians", have attained a peaceful sort of scientific immortality. Every known scrap of their dead languages has been gathered into one small scientific publication by Dr. John R. Swanton of the Bureau of American Ethnology.

Their speech, which now becomes part of the record of complex relationships of America's numerous Indian groups, is remarkably distinct, one tribe from the other. Unfamiliar to most modern Americans, the tribes are the Coahuiltecan, the Karankawans, Taumalipecan, and Janambrians. All were fairly small, and probably quite primitive, tribes which died out or were massacred in contact with white conquerors.

Material on which Dr. Swanton has drawn for his report of their speech includes such documents as a vocabulary of just 29 words made by two survivors of La Salle's colony. These men, brothers, lived with Karankawa Indians after their leader's death in 1687, until they were captured by Spaniards and then rescued from a Spanish ship by a French frigate. Another Karankawa vocabulary of 106 words was made in 1720 and became lost to scientific knowledge until discovered among French archives in 1919.

A number of tribes of the south Texas and Mexican border region are represented in language records by two words apiece, while the Payaya tribe of the Rio San Antonio region has left only one word for scientists to study.

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INVENTION

Electric Razor Can Be Used When Current is Not Handy

A NEW electric razor can be used as an ordinary safety razor if the owner finds himself where current is unavailable. Even when used electrically it employs a cutting blade, but it is dry. U. S. Patent No. 227,996 Ralph T. Bassett and George R. Ericson.

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CE FIELDS

GENERAL SCIENCE

Japanese Rations Short On Scientific Reading

JAPAN is to get shorter rations of scientific and economic reading matter as a means of saving paper and streamlining the thoughts of Japanese people.

Latest cuts announced by the Japanese government reduce economic journals from 200 to 20. Magazines dealing with science, industry, politics, and a number of other subjects are being reduced 30% to 50%.

Former Japanese attempts to restrict publications have banned frivolous publications, deemed unsuited to Japan's "new morality," Commerce Department officials point out. The new curtailment of reading matter is explained to the Japanese public as a step to "prevent the prevailing confusions in publishing circles."

The great reduction in economic journals comes at a time when Japan has banned the dissemination of information on a variety of economic subjects, and has almost completely suppressed statistics, observers note.

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EUGENICS

Princeton Graduates Would Like to Have More Children

PRINCETON graduates would like to have larger families if their incomes and other circumstances permitted, Dr. Charles Pugh Dennison of St. Andrew's School, Middletown, Del., found from questionnaires circulated among 400 members of the classes of 1900, 1902, 1912, 1913 and 1921. (*Journal of Heredity*, December.)

The average of these Princeton men considers that the ideal family should have about four children, yet only 29% of those whose families are now completed actually have that number in their own families.

As reason for not having more children, more than half gave limited financial means. The physical hazards of childbirth were cited by 32%.

Most important among the reasons given for wanting children were desire for the companionship of young children, given by 82%, and perpetuation of the family, cited by 66%. More than half (63%) said that "The creation and development of new life is one of the main interests of living," and (59%) "The desire for a real embodiment of the ideal relationship between the parents."

Only 15% admitted that birth occurred in spite of some prevention and only 7% declared themselves in opposition to artificial prevention of births.

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ANTHROPOLOGY-CHEMISTRY

Blood Test Given to Wah, 4,000-Year-Old Mummy

MODERN science has succeeded in giving a blood test to Wah, 4,000-year-old Egyptian business man whose dried-up mummy has provided something of a field day for New York's museum experts, anatomists, and other scientific investigators.

Putting muscle tissue from Wah's arm to delicate chemical tests, Dr. P. B. Candela of New York Medical College has found that the Egyptian, who lived about 2000 B.C., had in his veins blood of group B. The four types of human blood, familiar to the modern public in court cases to test paternity, are used in scientific study of human races. Widely separated tribes and peoples may belong predominantly to one race, it has been found, which may be significant evidence for origin and roving of the world's peoples.

"Modern Egypt is one of the high centers for group B," said Dr. Candela, "although all four groups are present."

The physician, who has made previous blood tests from bone and tissue of 3,300-year-old Egyptians, said that his usual method of mixing the dried material with diluted serum of blood types and testing this against red blood cells failed to work with the 4,000-year-old tissue of Wah. He resorted to preparing a water extract, such as is used in testing fresh organs and obtained a definite reaction for blood group B.

The mummy of Wah has been X-rayed, unwound at the Metropolitan Museum of Art for study of the jewelry inside, put together again in replica for exhibit, and the mummified body itself has been dissected in an autopsy at the American Museum of Natural History.

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PHYSIOLOGY

Repeated Electric Shocks Give Slight Immunity

AFTER a person has repeatedly been subjected to electrical shock, he tends to develop immunity, members of the American Institute of Electrical Engineers were told at their recent meeting in Philadelphia. Researches reported were made by a three-man team at the University of California Medical School. It consisted of Prof. Charles F. Dalziel, of the Engineering College; Dr. John B. Lagen, of the School of Medicine, and Joe L. Thurston.

The immunity is not enough, however, to permit a person to reach the stage where he could sit in comfort in an electric chair. Part of the ability to withstand increasing shock, it was suggested, is due to a psychological factor, as the subject gets used to it.

Their measurements, made on 120 men, were to find the greatest current at which the subject could let go of the electrode carrying the current. The voltages ranged from 20 to 75 and the current, which is measured in amperes, was increased to the point where the person tested could no longer release his grip.

One subject was able to let go at about a fiftieth of an ampere, but the mean value was about three quarters as much. The experiments did not use heavy enough currents to cause unconsciousness.

"If the electrodes are held in the hands, the threshold of perception is about one thousandth of an ampere. As the current is gradually increased, the sensation of tingling in the fingers, hands and wrists is intensified. At the same time the muscles of the fingers and hands, and later also of the arms, tighten involuntarily. At the higher currents (6-8 thousandths of an ampere and above) the discomfort from severe muscle contraction is more evident than the sensation of tingling, and may even be painful.

"For currents of this magnitude the individual may still be able to release his grip of the electrode by a determined muscular effort. As the current increases, the involvement reaches the shoulder girdle and extends to the external muscles of the chest so that respiration becomes somewhat difficult. The higher currents cause a sensation of mental discomfort which may even amount to a nameless fear, although the individual knows that at any indication from him, such as a nod or a cry, the current would be shut off."

Science News Letter, February 15, 1941