

Wild Boar

By his fruitfulness and cunning the wild boar of Europe, traditional pièce de résistance at Christmas feasts, is managing to hold his own in spite of the lack of protective game laws of any kind.

In eastern Germany, particularly Brandenburg and Pomerania, the land owners appreciate the value of the boar to the forests and see that he is not hunted down too closely. Eighty-five per cent. of injurious forest insects and small animals are destroyed by the boar, it has been estimated.

In west and south Germany, however, the asset of the boar to forest land is not so well understood and he is persecuted severely. Upwards of 12,000 are said to have been killed in Germany in 1925.

Zoology
Science News-Letter, December 21, 1929

Unthinkable

Relaxation of traffic regulations to allow higher rates of speed on streets and highways is unthinkable, officers of the Metropolitan Life Insurance Co. have decided after reviewing the present situation in regard to automobile fatalities.

Speeding is the principal source of auto deaths, the company's figures show. This is the only type of accidental death now increasing in this country. Automobile accidents are responsible for more than 2 per cent. of all deaths from all causes. The cumulative death rate from this cause for the first ten months of 1929 was 19.5 per 100,000.

Statistics
Science News-Letter, December 21, 1929

Star Size

Within a few weeks the newest and one of the largest instruments of the Mt. Wilson Observatory near Pasadena will be in operation and will begin to reveal the diameters of a number of stars. The fifty-foot interferometer it is called, and it has been under construction for nearly eight years. It is based on the same principle as the 20-foot interferometer designed by Prof. A. A. Michelson and used as an attachment to the great 100-inch reflecting telescope at the observatory by F. G. Pease, to measure the first diameter of a star. This was Betelgeuse, now visible in the southern evening sky in Orion, above the familiar row of three stars that form Orion's belt. He found its diameter to be 215 million miles.

In this new instrument a beam 50 feet long carries a flat mirror at each

end, which reflects the light from the star to the center of the beam. Two additional mirrors then reflect the light to a concave mirror which brings the light rays to a focus. The waves in the two beams "interfere" with each other, producing a series of bands, instead of a sharp point of light. By sliding the outer mirrors along the beam, a position is reached when the bands disappear. From the distance between the two mirrors when this happens, the apparent diameter of the star, or the angle that lines from its two sides would make at the earth, can be calculated. Knowing its distance, its diameter can be determined.

Only a few stars are large enough to be measured with the twenty-foot beam of the interferometer formerly used, but with the new one, perhaps 20 or 30 more will reveal their diameters to the astronomers.

Astronomy
Science News-Letter, December 21, 1929

Sunny Travel

Travelers to the south of England for winter holidays may now count on the benefits of the vacation beginning almost the moment they board the train. For its Cornish Riviera express service, an enterprising railway has fitted all its cars with window glass permeable to ultraviolet light. In this way passengers are assured the full value of the sunlight as they travel. The Cornish Riviera is so called because Cornwall, in the extreme south of England, has pleasant, mild winters with more than the average amount of sunshine. It is a favorite winter resort where inhabitants of fog-ridden, smoky cities go for intensive doses of sunlight and health-giving ultraviolet rays.

Public Health
Science News-Letter, December 21, 1929

New Gem

The new element, hafnium, may be the solution of the latest jewel mystery. A sparkling deep blue zircon, more beautiful as a gem than the usual brown, greenish or yellow varieties of that mineral, puzzled jewelers and mineralogists when it appeared on the market from Australia, Ceylon and other eastern countries about five years ago.

Dr. George F. Kunz, jewel expert of Tiffany's, who gave the new gem the name "Starlite," believed the mineral to be artificially colored, but knew no such beautiful color resulting from the elements known to occur in zircon. When he set about solving the mystery he learned that, although shipped from various places, the crystals of

IN VARIOUS S

blue zircon all originated from a single place, near Chantaboon in Siam. There the brown mineral, before being cut, was heated with cyanide of potassium in a closed crucible for some hours, coming out a color ranging from nearly white to deep sapphire-blue depending on the length of the treatment.

Only the heavier varieties of the mineral, which occurs in an unusual range of weights, will take on the blue color, and Dr. Kunz has found that the heavier kinds of zircon are the ones containing hafnium. He therefore believes that the mysterious color is a manifestation of this little-known element.

Hafnium was discovered in 1923 by D. Coster and G. Hevesy of Copenhagen, who found that it is a metal similar to zirconium, which is found in the mineral zircon. Although so long unknown, hafnium is by no means rare. It is believed to make up about 1/200,000 of the earth's crust.

Chemistry
Science News-Letter, December 21, 1929

Elderberry

Navajo Indians employed in road work in Mesa Verde National Park saved for the park its one and only elderberry bush, which had to be moved from its old location to permit the construction of a portion of the scenic Knife Edge road. The Navajos channeled about the roots of the bush so that it would be moved in a large block of earth. Then when the new hole was made, cables were adjusted, hooked over the shovel teeth, the bush raised, taken by shovel to the new location, and reset.

The bush, a very fine and large specimen, was then cut back approximately forty per cent. to insure its future growth.

Botany
Science News-Letter, December 21, 1929

Delay Reform

Action in the United States relative to this country's participation in an international conference for calendar reform will be delayed for a time until some indication is given as to what the countries of Europe intend to do about it, according to Representative Stephen Porter, chairman of the House Foreign Relations Committee.

Hearings on the Porter resolution

CIENCE FIELDS

for participation of the United States in such a conference were concluded by the House Foreign Affairs Committee in the seventieth congress. These hearings, Representative Porter believes, have thoroughly covered the subject. They are now being printed. When the resolution is again introduced and comes before the committee, action by the committee can be taken without further public hearings.

It is understood that a new referendum of business organizations conducted by the United States Chamber of Commerce has totaled some entirely different figures than those reported during the latter part of October, at which time the Chamber reported a failure to poll a two-thirds majority among their members for any one of the three proposals put forward looking to a calendar change, or the participation of the United States in working out such changes with other countries.

A new count is said to reveal that two-thirds of the members want the United States to take part in a conference to draft the change, if there is to be a change.

Chronology

Science News-Letter, December 21, 1929

Ambrose Light

Next year's returning European travelers will see Ambrose light a little sooner than they do this year. The famous beacon that marks the entrance to New York harbor has been moved one and an eighth miles south and a little east of its present position, George R. Putnam, U. S. Commissioner of Lighthouses, announced.

The advantages of the new position will be that ships will be guided well south of a bank only 40 feet deep in places, and that they will not need to change course between the light and the entrance to Ambrose Channel. The new position is directly on line with the center line of the channel.

Navigation

Science News-Letter, December 21, 1929

Helium

There are natural gas wells in Germany whose output contains helium, writes Kurt Weil in *Die Umschau*, a well-known German scientific periodical. But there is no prospect of the *Graf Zeppelin* or any of her future sister airships being filled with German helium, for the combined product of all the four German wells whose

gas contains this valuable element would have to be accumulated for 400 years before there would be enough to fill the *Graf*.

By means of extremely delicate tests devised by Profs. Paneth and Peters, noted German analytical chemists, the percentage of helium was determined for a number of gas wells in Germany. The richest of these was a small well at Ahlen, Westphalia, whose product assayed nineteen hundredths of one per cent helium. But this well flows only 41 cubic meters of gas a day, and would therefore yield the relatively insignificant volume of eight-tenths of a cubic meter of helium in that period. As compared with this, Herr Weil cites the great American well at Petrolia, Texas, which yields 425,000 cubic meters of gas, with a helium content of nine-tenths of one per cent. This would fill a *Graf Zeppelin* in a few days. The German writer adds the comment that Nature has treated Germany, the home of the *Zeppelin*, "like a stepmother."

Chemistry

Science News-Letter, December 21, 1929

Cooking Soil

The partial sterilization of soil by heat has recently been investigated by Dr. W. F. Bewley, director of the Experimental and Research Station at Cheshunt, England. Dr. Bewley finds that the heat not only destroys pests and diseases but also greatly increases soil fertility and encourages the production of healthier plants. Soils are heated for about half an hour at the temperature of boiling water. Heavy soils require more heating than light sandy soils.

The bacteria and fungi which cause diseases in plant roots are destroyed, but the beneficial soil bacteria are not killed and have fuller scope for their development. The heat also causes complex organic and inorganic substances to be converted into simpler substances which are more useful for the plant and the soil bacteria.

The heating may be carried out either by baking the soil or by passing a current of steam through it. Steaming is the best method, as baked soils often become too dry, and if overheated they are ruined. The heating must be thorough, especially in the case of badly contaminated soils. If some parts of the soil are insufficiently heated, centers of infection remain, from which disease organisms can rapidly spread through the rest of the soil.

Agriculture

Science News-Letter, December 21, 1929

Chemical Surgery

A method of removing a diseased organ by chemical rather than surgical means was described by Dr. Charles H. Mayo of Rochester, Minn., at the meeting of the Southern Surgical Association. The technical term for the operation is "chemical hysterectomy."

The procedure is particularly valuable in cases when the usual surgical methods of hysterectomy would be too dangerous to undertake because of the presence of serious disease in the heart or kidneys as well as in the organ to be removed. Of course, regular surgical operation is preferable if it can be done.

In the method followed by Dr. Mayo zinc chloride is the chemical used. A few other surgeons have also tried chemical means. Dr. Mayo has followed the procedure in 26 cases in which it was unsafe to operate by one of the usual procedures. He believes that, in its limited field, the method is of value. Carefully done, it has been safe. The patient, unless she is in bad general condition, can be out of bed in five or six days, he said.

Surgery

Science News-Letter, December 21, 1929

Lot Method

Continuous production is not always the secret of the low cost for which the American automobile is produced and sold, Prof. Fairfield E. Raymond, of the Massachusetts Institute of Technology, reveals in a report to the Society of Automotive Engineers.

The apparent ease and rapidity with which automobiles are made have created the impression in the minds of many people that the process depends somewhat on the hand of magic. They picture four wheels beginning to move at the end of a long runway, and half an hour later the four wheels emerge at the other end, a complete automobile.

But Prof. Raymond observes that many of the automobile factories are producing parts and certain types of cars by the lot method and are finding it cheaper. The lot method is especially applicable in the manufacture of parts and cars of which very large numbers are not required continuously. In order to help the manufacturers find out when to change from one method to the other, Prof. Raymond has prepared from many carefully conducted experiments a series of scientifically accurate formulas for application under different conditions.

Engineering

Science News-Letter, December 21, 1929