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## SCIENCE SERVICE

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### GREEN-GILLED OYSTER, FRENCH DELICACY, GROWS IN AMERICA

Washington, Feb. 00.- The oyster-loving people of Washington, Philadelphia, and other coast cities have been enjoying during the past few weeks a delicacy of which but few housewives have been entirely aware. This is the green-gilled oyster, widely famed in France as the delicately flavored Marennes oyster. There the bivalve is cultivated in special "olaires" or small artificial tide-water ponds in which the oysters' gills become bright green in color. There is a great demand for such green-gills at Marennes and at many of the famous French watering places because of their exquisite flavor and unusual "fatness". As a result of this demand, the price paid for green-gilled oysters is considerably higher than that paid for normal "white" oysters.

While the oyster farmer of Marennes goes to some trouble to rear his oysters particularly to obtain the green coloration of the gills, the American oyster farmers of certain parts of the Chesapeake Bay and North Carolina sound regions have occasionally been granted by nature the privilege, generally much against their wills, of rearing green-gilled oysters when they would have been better satisfied with the ordinary American "white" oyster. In fact, nature has forced the green-gilled oyster production. The only objections the American oyster culturists have, however, to the emerald-edged bivalve are the facts that the American public does not know its qualities and that nature does not bring about conditions each year for its regular natural production.

The greening of the breathing apparatus of the oyster is caused by a vegetable pigment characteristic apparently of a single microscopic plant, a diatom. The rate of growth and reproduction of this particular diatom is governed by very delicate changes in the chemical constitution of the sea water in which it lives.



The oyster ingests a large number of diatoms of many different species in its normal feeding process, having no special choice of the kinds it eats. So when the particular diatom whose pigment causes the greening is very abundant, it naturally feeds freely on that also.

The greening results directly from the chemical attachment of the green pigment of the minute plant to the white blood cells, the leucocytes, of the oyster. The compound thus formed destroys the value of the white blood cell which becomes then a true waste product of greenish color floating about in the blood of the oyster. The gills, in addition to serving as the "lungs" of the oyster, are so constructed that waste products are excreted through them. It is because of this function therefore that the gills of the oyster become green. The vegetable pigment of the diatom, not much different from that found in cabbage or spinach, has attached itself to the blood cell, has destroyed the cell as far as its function is concerned, and the waste compound so formed has been deposited in the gills awaiting its excretion. Green-gilled oysters held alive for two weeks in water which does not contain the diatom in question regain their normal "white" appearance.

The green-gilled bivalve is a food luxury, no more harmful than the lettuce, celery, cabbage, and spinach found on the American table daily. The pigment is of a pure vegetable nature and is not due to pollution caused by metallic salts.

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#### DYES FOR COLORING GERMS TO BE STANDARDIZED

(By Science Service)

Washington, Feb. 00.- Dyes are used to color man's bacteria as well as his clothes. The bacteriologist differentiates between small, colorless cells that look very much alike by finding out what color they become when treated with stains, such as fuchsin, methylene blue and gentian violet. The accuracy of a diagnosis for diphtheria or tuberculosis depends upon quality and reliability of the dye. A certain dye must give a certain germ the same color at all times.

Biological stains made in America are now being standardized by the National Research Council and the Society of American Bacteriologists, in cooperation with other scientific organizations and several American manufacturers who during the war developed a line of biological stains to replace those formerly obtained from Germany. Before the war there was one German firm that purified and standardized



all the dyes that were needed by biologists the world over.

The American stains now made by different manufacturers can not be used interchangeably due to lack of standardization.

Scientists believe, however, that the American products are now equal in quality to the former German product and they predict that superior quality in addition to standardization will be achieved.

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SOVIET RUSSIA REFORMS CALENDAR,  
SPELLING, AND WEIGHTS AND MEASURES.

(By Science Service)

Washington, Feb. 00.- Three of the innovations established in Russia by the Soviet Government are to be commended, whatever may be thought of the rest of them. These are: (1) The reform of the Russian calendar; (2) the reform of Russian spelling by dropping silent letters and (3) the adoption of the metric system.

The old weights and measures are being changed to the metric in the machine shops, railroads and drug stores. This can be easily done since all industrial and commercial operations are under government management.

The people will not find the change difficult because the old unit of weight, the pood, is almost exactly 16 kilograms and the verst is only one-fifteenth more than a kilometer. A Russian peasant is never so exact as that in his estimate of distances.

The action of Soviet Russia leaves only the United States and British Empire outside the international metric system.

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BROADCASTS

Radio News of the Week.

ADVERTISING BY RADIO  
TELEPHONE IS LATEST STUFF

(By Science Service)

Washington, Feb. 00.- A personal talk to thousands about the goods they have to sell is appealing to merchants. They see advertising possibilities in the radio telephone.

The dealer in phonographs and records gets a wireless sending set, connects it to a demonstrating machine, and announces into the ether: "This evening we have



the pleasure of hearing the latest band selection, as reproduced on the phonograph." Then he incidentally mentions the price and make and a few other details calculated to induce the listener to buy his records and his phonographs. Other merchants are using the same method of advertising. It seems possible that to the newspaper, magazine, billboard, car-card, show-window, sandwich-man, and the array of other advertising mediums, there will be added the ether.

Radio advertising clutters the ether. It has been known to interfere with the scheduled radio programs of entertainment that are being given from time to time. At present advertising broadcasting is sent on 360 meters wave length, the same as all other non-official broadcasting.

This situation promises to bring about an allotment of some different wavelength for this use.

Officials of the Department of Commerce have the wavelength of 150 meters under consideration for this use. Not only is this different from the wave length now in use, but the ether waves will extend only a few miles outside of the town and will not interfere with other radio messages.

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#### NEW MEASURING INSTRUMENT FOR RADIO WAVES

(By Science Service)

Washington, Feb. 00.- An instrument that measures wavelength or frequency of radio waves with great accuracy has been perfected by the Radio Section of the Bureau of Standards. Not only in connection with radio communication, but also in the wide and growing field of electrical research, there is an insistent demand for accurate measurement of the wave length or frequency of rapidly alternating currents. The new wavemeter is capable of measuring wavelengths from 65 to 85,000 meters, or in terms of frequency from 3,500 to 4,600,000 cycles per second.

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**RADIO WAVES.**- Wireless waves travel with a velocity of 300,000,000 meters per second. They have the properties of the more familiar and shorter kinds of waves, such as light, heat, and X-rays. Radio waves from a transmitting station spread out symmetrically from the station with uniform intensity, very much as waves spread out on a quiet pond when a pebble is dropped in. In a given direction from the transmitting station, at a given instant the distance between successive wave crests is the wave length.



NEWS OF THE STARSTelescopes With Photographic Eyes

By Isabel M. Lewis,  
of the U. S. Naval Observatory.  
(Science Service)

Few discoveries of new celestial bodies are now made by the man at the telescope. The everwatchful camera has replaced the human eye. Photographic plates are clamped to the eye-end of the telescopes and made to "follow" the stars in their diurnal motion across the heavens, sometimes for hours at a time, by means of sidereal clocks attached to the telescopes. In this way the region to be photographed is kept immovable in the field of view.

Women are now usually the discoverers of the newcomers to the heavens, the asteroids, comets and Novas, the new or temporary stars. They examine and measure the photographic plates.

The developed plates show the stars as points of light, varying in size and intensity, against a black background. All plates are dated and filed away for future reference. They furnish a record for all time of the aspect of that portion of the heavens at the time the plates were exposed. Sometimes the same region is photographed a number of times in an interval of several decades. Particularly is this true at The Harvard College Observatory where a systematic photographic survey of the heavens has been carried on for a number of years that has resulted in the discovery of many Novas or temporary stars and has furnished accurate photographic positions of all stars down to a certain magnitude.

The women who examine and measure the plates are specially trained in reading the hieroglyphics of the heavens. A short trail across the plate means that an asteroid, or minor planet of the solar system, has entered the field of view. The length of the trail shows how rapidly it has moved during the time of exposure. A small fuzzy patch like a star out of focus may mean that some periodic comet has strayed into the field. Or the photographic plate may have been used as a trap to catch this very comet on its return to the sun. On the other hand this blurred object may be only a distant and minute spiral nebula, one of the hundreds of thousands that abound in the heavens. It is a matter for the trained eye to decide. When a comparison of plates taken of the same region at long intervals show that a certain star was conspicuously bright on one plate but much fainter or entirely invisible on others, it is an indication that a Nova or temporary star has been



discovered.

Since the advent of the brilliant Nova of 1918 a systematic examination of plates taken in the past few decades at the Harvard College Observatory has resulted in the discovery of a considerable number of these temporary stars that have increased many-fold in brilliancy for a brief period and then disappeared from view. Many of these stars have been invisible to the unaided eye at maximum brightness and none have been conspicuous objects but their discovery is important to the astronomer who is anxious to find an explanation for these sudden outbursts of brilliancy among the stars.

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#### SCIENTISTS ON EXPEDITION TO UNEARTH ANCIENT CIVILIZATION

(By Science Service)

Washington, Feb. 00.- Off on a hunt for more data about the Maya civilization that for more than 2000 years flourished in southern Mexico and northern Central America, two parties of scientists of the Carnegie Institution of Washington have left Washington.

Dr. Sylvanus G. Morley, who in past has deciphered the chronology of the Maya from monuments that were erected in the principal plazas of the buried cities, will make, with Dr. S. M. Lothrop, archeologist, a search for new calendar stones in the coast regions. Another party consisting of Dr. C. M. Guthe, in charge, O. C. Ricketson, jr., and M. K. Jessup, assistants, and J. M. Sopana, photographer, will continue excavations of the buried city of Tayasal, in the province of Peten, Guatemala.

These scientists are going into a country that is remote and inaccessible, where the climate is hot and humid, the water supply impure and unsanitary, and the insect plagues numerous and highly dangerous. They will travel by mule trains, that can make only 15 miles a day through the bush. They will find labor is scarce and inefficient.

Until May or June they will make this region yield its secrets of our foremost native American civilization, which flourished before the beginning of the Christian era and was in the last stages of decay when the Spanish conquerors in the sixteenth century landed in America.

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SCIENCE OF CROWING THINGSAgricultural News of the WeekGROUND-HOG CALLED PEST  
AND FALSE WEATHER PROPHET

(By Science Service)

Washington, Feb. 00.- According to popular superstition, the ground-hog has his day Feb. 2.

According to biological and weather experts, Mr. Ground-hog is a pest and no prophet. The people that believe in the "six weeks more of winter" if he sees his shadow are fooling themselves. Whether or not the sun shines Feb. 2 and casts the shadow of the ground-hog, who may come out looking for something to eat, the weather will not be affected.

"The belief about the ground-hog and his effect on the weather is absolutely without basis," emphatically declares E. H. Bowie, supervising forecaster of the U. S. Weather Bureau. Just to satisfy themselves that such is the case, the meteorological experts of the Weather Bureau have examined the records for past years and they find that whether it was sunny or cloudy on past Feb. 2ds, the weather for the succeeding six weeks goes on in about the same way.

Mr. Ground-hog is not only denounced as a false prophet but he is called a pest. There are two kinds of ground-hogs. The eastern species frequently damages garden vegetables, clover, and other crops. Also, its burrows and mounds interfere with mowing and other farm operations. In some States the animal is regarded as so obnoxious that local bounties are paid for destroying it. The western species seldom bothers agriculture. Woodchuck is the other name for ground-hog. It is the largest of our marmots.

Dr. A. K. Fisher, in charge of the anti-rodent investigations of the Department of Agriculture, tells how to gas the ground-hogs. "The animals are often destroyed in their burrows by fumigation with carbon disulphid or by the discharge of blasting powder", he says. "Woodchucks, while somewhat gregarious, seldom occur in large colonies, and may, therefore, be kept in check by shooting or trapping. They may be poisoned by strychnin inserted in pieces of sweet apple, carrot, or sweet potato."

But if there are not too many ground-hogs about, Dr. Fisher, in spite of their reputation with weather men and farmers, thinks they are interesting and he hopes that they will not all be exterminated.



MEMORIAL TO FATHER OF  
MODERN DAIRYING

(By Science Service)

Madison, Wisconsin, Feb. 30.- A memorial in bronze and marble, to William Dempster Hoard, the father of modern dairying, will be dedicated here on Feb. 3 during the week that Wisconsin has set aside for the commemoration of the fifty years of successful progress in dairying in Wisconsin.

This memorial will stand at the gateway to the Wisconsin College of Agriculture, a part of the University of Wisconsin. Here it was that the first dairy school in America was born, that the first farmers' institute of this country had its beginning, and that one of the leading "cow colleges" was stimulated and grew, due largely to the interest and foresight of Hoard.

The development of dairying and its replacement of single crop farming occurred within the life and under the influence of pioneers like Hoard. In 1870 he began a country paper with a special dairying department; in 1888 when governor of Wisconsin he saw created the first special dairy department of a state.

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AIRPLANE ENGINES STOP  
WHEN CLEANED WITH COTTON WASTE

(By Science Service)

Ottawa, Canada, Feb. 30.- Cotton waste, which has long been used in cleaning all kinds of machinery, has been banned in the workshops of the Canadian air service. When airplane engines are overhauled and waste is used, the engines have often stopped when they were afterwards placed in service.

"These cases have appeared to be due not to waste being accidentally left in the engine parts, but to an accumulation of small pieces of cotton thread that had been left on engine parts after cleaning with waste," says Lieut. Col. E. W. Stedman, director, technical section, Air Board. He urges that commercial companies also prohibit such use of waste.

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COUNTING MOUSE HAIRS.- Determining how many hairs there are on a mouse is the task that R. R. Huestis, graduate student of the University of California, has laid out for himself. He punches out a piece of dried mouse skin and under a microscope counts the number of hairs. Whether there are hereditary changes in mice hair is being studied. A mouse has two kinds of hair, not including the whiskers.

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WOMEN OF BABYLONIA  
HAD STRONG LEGAL RIGHTS

(By Science Service)

Baltimore, Jan. 30.- Women of Babylonia 2500 years ago had strong legal rights comparable in many respects to the rights of women today. This fact will soon be made public, with other scientific data on life and customs in ancient Babylonia, by a publication giving the contents of cuneiform records in possession of Goucher College here.

In the Goucher collection, now deciphered, there are receipts for wine, records of bailment, payrolls in connection with the digging of a canal, and many others, including a record of the tithe paid to the temple by Belshazzar, then the crown prince.

But Goucher girls are interested in the two tablets that reveal the legal rights of Babylonia women, says Prof. Raymond Philip Dougherty, who conducts their classes in biblical literature. "The lease of four houses from a woman for four years is explained in one tablet," he says. "It is dated in the 22d year of Nebuchadnezzar. This document shows that a Babylonian woman in the 6th century B. C. could own considerable real estate and had the right to draw up a rigid agreement in leasing it. A fine was imposed in case of any breakage."

"Tablet No. 385 records the sale of a slave. In this document the wife is placed on an equality with her husband in the ownership and sale of property. No difference is recognized between the two in the responsibility assumed in making the contract. There is undoubted evidence here of the high legal position reached by women in Babylonia, long before the dawn of women's parties and suffrage movements."

Deciphered tablets in the Goucher collection, of which there are nearly 1,000, belong to the reigns of Nebuchadnezzar, (604-561 B. C.), and Nabonidus, (555-538 B. C.). These two kings together reigned a total of sixty years of the eighty-seven years representing the Neo-Babylonian period. The tablets, fashioned in clay, were excavated at the mound Warka in southern Babylonia. This mound is the site of the ancient city of Erech, one of the earliest cities founded in Mesopotamia. The life of ancient Babylonia centered in the temple, which controlled the secular as well as the religious activities of the district over which it exercised jurisdiction. Naturally the main function of the temple was to perform ceremonies in honor of the gods, but it also served as a bank and court for the financial and legal affairs of the people. Careful records of all these dealings were kept by the temple authorities. Scribes skilled in the use of the stylus indented soft clay tablets with accurate accounts of transactions as soon as they concluded. These tablets, some of them simply sun-dried, others baked in the fire, have been preserved for many centuries in the heaped ruins which now mark the sites of ancient centers of worship.

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## TWO PAGES OF FILLERS OR A DAILY FEATURE

## DO YOU KNOW THAT -

About 70 per cent of the power on farms is supplied by horses. The remainder is furnished by tractors.

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It is estimated that 2,400,000 people in this country are continually ill.

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Products derived from wood are being used in the manufacture of such important and widely diversified articles as news and writing paper, linoleum, artificial silk, gunpowder, paints, varnishes, soaps, inks, celluloid, sausage casings, acetone, chloroform, and iodoform.

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The cactus family is of purely American origin. The prickly pear, introduced into Spain shortly after the voyages of Columbus, is one of the common wayside sights of all the countries bordering on the Mediterranean. Yet the movie men will bring in cactus in scenes supposed to be set in ancient Palestine or Egypt.

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## DO YOU KNOW THAT -

Millions of caterpillars often migrate in Canada and cause alarm among the farmers. But they kindly confine their attention to weeds and, usually, the only cultivated crops they attack are garden plants.

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It is estimated that from wood now wasted at saw mills some 300,000,000 gallons of alcohol could be produced annually and used for motor fuel.

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Due to a low rainfall in England during the last year, surface water supplies were greatly decreased and restrictions were placed upon the use of water in various cities in England.

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Breeding places of mosquitoes are often destroyed by explosions of T. N. T.

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## DO YOU KNOW THAT -

Douglas-fir trees at times become coated with sugar which may be of value as food. The sugar is not produced by insects but is exuded by needles of the trees under certain conditions.

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"Electron" is not only a name for the divisions of the atom but also for an alloy consisting of 95 per cent magnesium,  $4\frac{1}{2}$  per cent zinc and  $\frac{1}{2}$  per cent copper.

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Fuel oil wasted by oil burning steamships has almost eliminated the little marine animal, known as the sea-horse, from the northern part of the Atlantic. This oil refuse has destroyed the little organisms on which the sea-horses live.

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A wealthy American, apartment hunting, advertised by airplane. He had 100,000 cards announcing his needs dropped from the air and he received 200 replies.

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## DO YOU KNOW THAT -

Due to their previous unfamiliarity with sugar, Austrian children had to be trained to eat sweetened food when the American Relief Administration began to feed them after the war.

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A practical compressed horse forage has been developed by the United States Army. A brick six inches in width by twelve inches in length and three-quarters of an inch in thickness equals four quarts of oats.

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An edible oil made from the seeds of the Concord grape has been found to compare favorably with foreign grape-seed oils.

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Lead may be too pure for practical purposes. Roofing made of commercial lead, 99.9 per cent pure, is too soft and when on a steep roof has a tendency to flow downward under its own weight and the heat of the sun.

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## DO YOU KNOW THAT -

The culture of the apple in Europe is of unknown antiquity. Apple seeds have been found in the prehistoric lake dwellings of Switzerland.

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The "grass rugs" now so popular as summer floor coverings, are not made from grass, but from sedges. "Crex", the trade name for one widely advertised make, is simply a contraction of "Carex", the botanical name for a sedge.

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Furniture made from several kinds of Brazilian woods resembles that made from American trees.

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Indians of the Southwest, engaged in one of America's most ancient industries, pottery making, are beginning to use modern kilns.

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## DO YOU KNOW THAT -

Protection of birds in Germany is now difficult because the great scarcity of eggs and the undernourishment of a large portion of the people leads to promiscuous bird egg stealing.

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The hardest rainfalls usually exhaust their force within two hours.

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Carrier pigeons are being used to communicate between forest service fire fighting forces.

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Lignite or "brown coal" constitutes approximately one third of this country's coal resources.

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