# THE SCIENCE NEWS-LETTER

A Weekly Summary of Current Science

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#### SCIENCE IN 1922

Interesting developments in science during the past year have occurred in various fields of organized knowledge.

## Astronomy, Physics and Chemistry

Researches determined that blue and yellow light pass through empty space at the same speed.

The total eclipse of the sun on September 21, visible in Australia and the south Pacific was the occasion of six astronomical expeditions to test the Einstein theory. A partial eclipse of the sun was visible on March 28 in Florida.

Ten years of solar radiation observations were announced and the average value of the sun's heat on the earth is 1.94 calories per square contimeter per minute or enough heat to melt a layer of ice 424 feet in one year.

Mars made a close approach to the earth in June.

Invisible sun spots were discovered at Mount Vilson Observatory by means of their magnetic effects.

Prof. Sir Ernest Rutherford of Cambridge announced that he is able to disintegrate the chemical elements, boron, fluorine, sodium, aluminum and phosphorus as well as nitrogen, and to obtain hydrogen from them by bombarding them with the poverful alpha particles of radium.

It was determined that E was the easiest letter to hear and that all ears hear them differently.

A new device for sounding ocean depths by sound waves without the use of the sounding lines was perfected by the Navy.

A liquid, called furfural, was produced from waste corn cobs at low cost and can be used in making synthetic resins and as a motor fuel, saving the more expensive alcohols and gasoline now used.

A mixture of cyanogen chloride, a tear gas, and the common disinfecting gas, hydrocyanic acid, was developed as a better fumigating agent that is deadly and yet gives warning of its presence.

#### MEDICINE

A common chemical, carbon tetrachhoride, was found to be an efficient substance for use in removing hookworms in man, and it may replace the drugs formerly used, chnopo dium and thymol.

Post-mortems of human beings who lived 4000 years ago vere made by means of an examination of Egyptian mummies who were found to have many of the diseases of today

Dr. Hubert Work, then president of the American Medical Association, was made postmaster general. He became the second scientific cabinet officer, as Herbert Hoover, secretary of commerce, is a mining engineer.

A tendency toward cancer was found to be inheritable.

Minute amoeba, single-celled animals in the bone marrow were found to cause joint rheumatism or arthritis deformans.

Direct sunlight, unimpeded by glass or clothing was found to be an effective cure for rickets.

The use of glands and their aid in rejuvenation was the subject of experiment and discussion.

Mother's milk was found to act as an antitoxin and vaccine that protects the new-born baby against disease germs.

An extract of the pancreas was isolated at the University of Toronto and this substance, called insulin, when administered to a sufferer from diabetes allows him to eat normal food, thus promising to control this disease which is usually fatal.

Encephalitis or inflammation of the brain was transmitted experimentally from man to rabbits by inoculating them with the clear contents of ordinary cold sores.

An antiserum for combating the highly fatal Rocky Mountain spotted fever was produced at the Rockefeller Institute for Medical Research.

Spraying the throat with pneumonia vaccine produced considerable immunity against virulent pneumonia in monkeys during U. S. Public Health Service experiments.

German chemists announced that they had perfected a drug, called Bayer 205, that cures the African sleeping sickness.

The hundredth anniversary of Pasteur's birth was celebrated on December 27.

Agriculture and Biology

The white-pine blister rust, a fungus or parasitic plant disease, invaded the great pine forests of the northwest threatening many feet of timber.

A very fine colloidal material, called "ultra-clay" was found to compose an important part of the soil.

An insport imported from France was found to attack the destructive native cure horor.

A new method of treating phosphate rock in the electric furnace gave promise of better fertilizer.

A rose was discovered to be one of the worst enemies of the potato because it harbors the eggs of aphids that carry disease.

By using alum it was found possible to neutralize the alkalinity of soil that becomes impervious after several years of irrigation due to the formation of insoluble salts.

The true wild species of potato, from which our cultivated potatoes come, was found in the mountains of northern Equador.

The mystery of why a heifer born twin with a bull is usually sterile was found to be due to the action of gland secretions before birth.

It was found that artificial illumination can entirely replace sunlight in growing any common crop plants and weeds and that as the seed is perfectly normal it will be possible to grow three generations in a year instead of one by this method.

The fishy taste in butter was traced to a chemical substance known as "trimethylamine."

A cheaper method of combating the cotton boll weevil, consisting of treating the unblown buds of the plant, was developed in Florida.

An insidious marine foe, the shipworm or teredo, threatens the destruction of New York's wharfs and docks and the study of the situation is begun.

In the case of a tiny water animal, the rotifer, it was found possible to make a female animal produce either all females or males by simply varying the food.

A platypus, an Australian animal that has the bill of a bird, the fur of an animal, lays eggs and yet suckles its young, was brought to America alive for the first time.

Differences in bacteria due to age were discovered and it was found that these minute organisms suffer from infant mortality.

X-rays by action on the chromosomes in the cells of flies will produce irregular progeny and control sex.

The essential oils that cause the fragrance of flowers were found to serve as a protection against extreme heat and chill.

A method of protecting wood from land and water insect damage by treating with paraffin and poisonous salts was discovered.

## Engineering and Related Sciences

#### country's

Methods of using the/greatest potential power sources, the Colorado River, were considered and treaties between the sta tes concerned were completed.

In three localities model experimental roads were built and worn out in order to obtain data for better design of highways.

The coal strike beginning April 1, shut off power equal to four hundred times the energy actually developed at Niagara Falls.

French experiments with motors of the Diesel type indicated that motor vehicles will be able to use heavy oils instead of gasoline.

The American Liberty dero engine was modified experimentally to use heavy oil instead of gasoline.

Writing in the sky by means of smoke sent out from airplanes in flight was perfected.

By using paper models, design of concrete buildings was improved.

In gliding and soaring contests in Germany, France and England two motorless flights over three hours in length were attained.

The army airship C-2 was destroyed while on a trans-continental trip.

Propecting and mapping by airplane came into more general use and was made more accurate.

Researches on the level of water in the Great Lakes lead to the conclusion that man would have to regulate their level artificially in order to secure their most economical use in power and transportation.

#### Anthropology and Psychology\_

Finding of the Rhodesia skull of pre-historic man during the previous year revived interest and speculation in ancient man.

Evidence was presented that man existed before the Great Ice Age at least 520,000 years ago.

The finding of a fossil tooth thought to be that of an intermediate between ape and man, in the home state of William Jennings Bryan, principal opponent of the facts of evolution, started a search for further evidence of the animal.

Attention was turned toward the problem of giving the gifted or bright student better opportunities in our schools and colleges.

Leading psychologists formed a corporation for the advancement and practical application of psychology, the profits of which must be used for research.

#### Radio

Radio broadcasting, of speeches, music, entertainment and news became national in scope.

Life-saving boats of the Coast Guard were equipped with radio apparatus.

The national radio conference called by the Department of Commerce laid plans for the extension of this relatively new method of communication and recommended legislation.

"Wired Wireless" or line radio was demonstrated by Maj. Gen. George O. Squier to be useful as an additional method of broadcasting over telephone or electriclight wires.

American radio amateurs established regular communication with Hawaii and Porto Rico and held successful trans-Atlantic tests for the third time.

Maj. E. H. Armstrong, inventor of the regenerative radio circuit, created a new super-regenerative circuit that produces signals 50,000 and more times greater than those ordinarily produced by the same apparatus wired in the ordinary way.

Alexander Graham Bell, inventor of the telephone, died.

#### Explorations

Dr. D. B. MacMillan returned from his expedition to Baffin Land bringing important geographical, magnetic and other scientific data.

Capt. Roald Amundsen and his expedition left on the "Maud" for a drift across the Arctic Ocean.

The discovery of an arahaic pyramid in Mexico indicated that human history in America began as early as the primitive civilizations around the Mediterranean.

Five Mayan cities abandoned hundreds of years ago were discovered in the forests of Yucatan and Guatemala.

A rich collection of utensils and adornments was discovered in the tomb of King Tutankhamin, in the Valley of Kings, near Luxor, Egypt.

Country butchers and farmers now supply about 30 percent of the hides and skins used in this country.

The average human brain weighs about 48 ounces while the grain of the gorilla never weighs over 20 ounces.

Since 1896 the coal miner in this country has worked on an average of 190 days per year.

Waste waters from fish oil plants yield materials useful for fertilizer and for poultry food.

#### CAUSE OF MOSAIC PLANT DISEASE DISCOVERED

The cause of mosaic diseases that destroy millions of dollars worth of potatoes, tomatoes, beans and other plants has been discovered by a young scientist still in his twenties. He is Prof. Ray Nelson of the Michigan Agricultural College.

The disease is caused by protozoa very similar to the microbes called trypanosomes that cause African sleeping sickness. These beasts are all less than one ten-thousandth inch long and swim around in the cellsap of the stem. It was previously believed that these diseases were due to filterable viruses but Nelson cut stems lengthwise and revealed the animals, called "flagellates" that attack the very heart or nucleus of the cell.

Mosaic disease shows itself as mottled yellow leaves of sickly plants, commonly kalled "calico leaf". Minute animals, called amoebae, somewhat like organisms causing malaria and yellow fever, cause the mosaic of corn and wheat plants, Dr. L. O. Kunkel of the Hawaiian Agricultural Station and H. H. McKinney of Wisconsin announced to the American Association for the Advancement of Science, at its Boston meeting.

These parasites are carried by insects from diseased to healthy plants. They a: also borne from generation to generation by diseased seed. Pure seed and insect eradication are the protective measures necessary. These discoveries of animal parasites of plants are said to be comparable with Pasteur's work on the cause of animal diseases.

> (A Chat On Science) AN INVENTORY OF ENERGY By Dr. Edwin E. Slosson

Our modern civilization has been developed by the lavish expenditure of the potential energy accumulated in the form of fossil fuel during geologic ages. Our wealth and industries, our comforts and luxuries, our science and art, our power and population, all are dependent upon the continuance of an adequate supply of energy from some source.

But the sources on which we are now relying, coal, oil and gas, are being rapidly used up and are irreplaceable. Natural gas is almost exhausted. Gasoline production is about at its peak. Of coal the United States has enough for five thousand years but many countries have not any.

It is high time the world took stock of all conceivable sources of mechanical power to determine how far civilization may be developed or how long it may be maintained at the present level. Such an inventory would require the cooperation of the scientists and engineers of all nations in an investigation lasting many years. But fontunately the means of such cooperation now exist for the first time in the International Research Council which at its last meeting in Brussels last July took under consideration this project. The question was also discussed at the Boston meeting of the American Association for the Advancement of Science the last week of December.

Popular confidence that "science will find a way" before there is any serious shortage is flattering - but unfounded. If we try to list all the sources of energy that we can think of we will find that none of them is yet available or cortain ever to be secured in adequate quantity.

Our primary and only practical source of energy is the sun. The sunshine falling upon a square mile of land at sea-level in our latitude in the course of a year is equivalent on the average to 700,000 horsepower. To give us each the amount of energy we are now employing, one and a half horse-power, 60 square feet would be sufficient.

But no satisfactory solar engine has yet been discovered so we are not able to make use of this abundant supply directly. Indirectly we can employ it in various ways. The heat of the sun causes currents in the air which we can use to propel sailboats and run windmills. Doubtless windpower can and will be used more in the future for both purposes, but the winds are variable and insufficient. The same may be said of the waves, and of the rise and fall of the tides, caused by the attraction of the sun and moon. Something may be done with them but we must not expect too much.

The power that the sum provides continuously by pumping up water from the sea and depositing it upon the mountains in the form of rain can be used by damming up the streams and interposing turbines. We should make use of such water-power as rapidly and completely as possible to save our fossil fuel but there is not enough of it in all the world to replace the coal consumed and even in our favored land we could barely get anough power by harnessing all the falling streams to satisfy our present population, to say nothing of future needs.

Some day the world will have to stop drawing upon its carboniferous banks and live within its income. It will have to grow its fuel year by year as it grows its food. But it would be a great shock to civilization to have to shift back from coal and oil to the wood of two hundred years ago.

When we turn from the sun to the earth we find here also an abundance of power but no way to get it. We are living on top of a furnace, but fortunately for us the lid is thick and non-conducting. It has been often suggested that a hole might be bored down through the crust of the earth into the heated interior a few miles below and through this water might be poured down to come up steam. But this temains an engineering dream.

Last and most illusive of all is the internal energy of the atom, revealed to us in the heat that radium is continually giving off. We are using radium rays already to illuminate watch dials and scorch out cancer, but all the elements have similar stores of energy if we only know how to release it. What it would mean if we could gain access to this exhaustless supply of potential wealth H. G. Wells has tried to tell in his romance, "The World Set Free", but even his brilliant imagination is baffled by its dazzling possibilities. But so far scientists have not been able to unlock the atomic energy except by the employment of greater energy from another source.

Such in brief is our present situation and future prospects . The lesson of it is, first, that we should curtail the waste of our coal and oil, a loss to our country of a billion dollars a year, and, second, that we should start systematic research to develop new means of obtaining power such as a machine for converting the sunshine into electrical current.

## ACTION OF LIGHT ON PLANTS DETERMINES DESTINY OF CIVILIZATION

The chemists and botanists of the American Association for the Advancement of Science at its Boston meeting joined forces in the discussion of the borderland problem of how the sunshine acts upon the green leaf to form sugar, starch and wood out of plain water and carbon dioxide. This constructive action of light, called by the scientists "photosynthesis", has been the object of experimental investigation for 150 years but neither chemists nor biologists have yet been able to explain its mechanism or to rival it in the laboratory. The more it is studied the greater the realization of its complexity and importance.

As was said by the leading speaker of the symposium, Dr. H. A. Speehr of the Coastal Laboratory, Carmel, California: "A few years ago the subject of photosynthesis was considered very generally a purely academic problem. Today it is rapidly becoming recognized as one of the most important problems determining the destiny of our civilization. The fixation of nitrogen has long been recognized as a n essential to material progress. The fixation of carbon is now acknowledged as being essential to survival itself."

Dr. Spoehr, who has been working under the auspices of the Carnegie Institution of Washington for the last twelve years on this question of the formation of carbon compounds by sunlight, presented today a new theory of the process. He questions the commonly accepted theory that the reaction proceeds by two simple steps; first, the formation of formaldehyde from carbon dioxide and water, and, second, the combination of this to form sugar. British investigators claim that they have actually carried out these reactions in the laboratory but Dr. Speehr in repeating their experiments has failed to confirm their conclusions. He suggests as an alternative explanation that the first step in the process is the breaking down of the carbohydrate molecule into a very large number of enormously reactive substances. These pieces either rearrange and react with each other or react with some other substance in the cell, possibly with carbon dioxide.

When once this process is understood, Dr. Spoehr believes that it will be possible to draw up a balance sheet for agriculture as a photochemical industry and to calculate the total amount of food and fuel which it is possible to grow on the surface of the earth and therefore the population and civilization the world can support.

#### MEDIUM-SIZED MEN MAKE BEST SALESMEN

Medium-sized men are the most successful salesmen. This was revealed in a statistical study of six hundred footwear and insurance salesmen, presented before the American Psychological Association at its Boston meeting by Dr. Harry D. Kitson, of Indiana University. He showed that the theory that the large man can "impress" and "dominate" his client by mere animal bulk does not stand the test of science.

There are two physical traits that are frequently alleged to be a special benefit to salesmen -- height and weight, Dr. Kitson said. He ranked hundreds of salesmen according to commissions earned and height and weight. He found tallness and heaviness cannot be regarded as auguries of success in salesmanship, and that selling abilities are independent of these two traits. In the case of two of three comparies examined, tall and heavy men were among the poorest salesmen as often as among the best. In one insurance company, although the extremely large men earned slightly more than the extremely small men, the most successful selling was done by men about 5 feet 9 inches tall and of medium Weight.

#### The Science News-Letter

## CHEMISTS AIMING TO OUTDO PLANTS

Chemists should work for something more efficient than chlorophyll, the green coloring matter of leaves, in absorbing the energy of sunshine, Dr. S. F. Sheppard of Rochester advised the chemical section of the American Association for the Advancement of Science at its Boston meeting. The green leaf builds up sugars out of formaldehyde with most efficiency when the sunshine is not too bright, he said, but as the intensity of the light increases the leaf fails to take full advantage of the increase so its relative efficiency falls off.

Dr. Sheppard admitted that so far the chemist had found no substance even as satisfactory as chlorophyll in the making of sugar from inorganic material but he pointed out that the same reaction could be accomplished by the ultra-violet rays, such as are given off by the white flame carbon arc lamp. He cited experiments to show that when these rays act upon a solution of formaldehyde, commonly known as formalin, in water containing certain salts, such as sodium citrate and carbonate and copper sulphate, the formaldehyde is in part transferred into sugar. The most effective rays are the ultra-violet light of very short wave-lengths but these are not found in sunlight as it filters through the atmosphere. The green leaf, however, is somehow able to use the sum's rays to combine the water and carbon dioxide to produce sugar and starch. The British investigators, Baly and Heilbron, hold that this is done through the formation of formaldehyde as an intermediate product.

The key to these reactions, according to Dr. Sheppard, is likely to be found in Einstein's "principle of photo-chemical equivalence", which shows the relation between the quantity of energy received as light and the amount of the substance transformed into something else. According to Einstein the amount of a substance decomposed per gram-calorie must increase proportionately to the wave-length of the light up to a certain limit and then fall suddenly to zero.

## BABY BRAIN TESTS INVADE NURSERIES

Intelligence tests for babies six, nine, twelve, eighteen, twenty-four, and thirty-six months old were demonstrated in an illustrated address before the American Psychological Association at its Boston meeting by Dr. Arnold Gesell, professor of child hygiene and director of the Yale University Psychological Clinic.

In the method of testing the infant minds explained Dr. Gezell, the baby is seated in the mother's lap, before a small table. The psychologist presents him with a series of simple objects and problems situations: An enamel cup, saucer, and spoon to manipulate; a piece of paper to crumple, tear, or fold; a small pellet to pick up; a cube concealed by a cup to uncover; a rod to put into a small hole; a dangling ring to pull down; a third cube to grasp when both hands are full, and other similar problems. Over 300 babies have been tested in this way at Yale and many have been tested at different ages.

"Simple as these materials and situations are," said Dr. Gezell, "they have been surprisingly effective. They have evoked behavior responses almost without fail and have revealed interesting developmental differences between adjacent ages and between individual babies in the same age group."

"Sprawling babies, toddlers, and mercurial run-abouts are not the most convenient human subjects for scientific study," he said. "They rarely congregate and they have certain attributes of inaccessibility which have protected them from too much psychological interference. There is also a wide spread belief that babies are

## January 13, 1923

#### The Science News-Letter

all much alike or that they vary so enormously in the way they develop that it is unprofitable to investigate them. It is becoming increasingly difficult to justify any neglect of the pre-school period of development. Although our investigation is quite preliminary in character we are confirmed in our belief that the phenomena of behavior occur according to law, that individual differences assert themselves with prognostic import even in babyhood, and that a clinical type of psychology may hope to learn some of these differences and offer the findings as a timely control of human behavior."

#### MINDS OF TINY TOTS TESTED BY PICTURES

A new, brief, and easily administered intelligence test for children from three to six years of age is now being standardized and was described to the American Psychological Association meeting at Beston by Dr. Grace E. Bird, of the Rhode Island State College and the Rhode Island College of Education, who, together with Prof. Clara E. Craig of the latter institution, devised the examination.

"The earlier the mental endowment of a child can be estimated," said Dr. Bird, "the earlier we may adapt the school work to his needs and the earlier we may apply remedial measures if they are necessary."

The test described today is entirely composed of pictures of objects involving common properties and qualities of the environment, the detections of a few omissions in objects, the identification of ordinary family relationships, every-day activities, social groupings, and other achievements which require such simple judgment as the average child from three to six is competent to make.

The examiner identifies most of the pictures for the child and the only response called for is simple mark to be placed on the picture in question, thus making no demand upon the ability to draw. High correlation with both teachers' estimates of the probable success of the child and with the Stanford-Binet test for children of these ages is claimed for the grading obtained in this way. The pictures used were drawn by an artist who understood the juvenile point of view.

## TODDLERS FURNISH DOCTORS MENTAL DATA

Young children from two to five years furnish fertile and satisfactory subjects for psychological experimentation, it was revealed in a report of the Iowa University Pre-School Exboratory made to the American Psychological Association at its Boston meeting by Drs. B. T. Baldwin and L. I. Stecher.

The children, the report shows, spend the morning in a specially constructed building with group rooms equipped for play and educational activities and with examining rooms for physical and psychological measurements.

These toddlers are measured once a month on the day of their birth, in height, weight, and eleven other physical traits, and take part in a series of psychological experiments designed to investigate such problems as the development of the sense of color, form, weight, and number, the growth of motor control and poise, the promotion of proper habits and character traits and the acquisition of social virtues such as cooperation, group responsibility and leadership.

"The continuation of such experiments with these and even younger children will result in a body of information that will be invaluable for the subsequent training of the child entering school," the report said.

#### PROTEIN OBEYS MOLECULAR LAWS

That the swelling of gelatin and the peculiar behavior of the protein of plant and animal cells can be explained by the application of ordinary chemical laws, was announced at the Amrican Association for the Advancement of Science meeting in Boston recently by Prof. Jacques Loeb of the Rockefeller Institute for Medical Research. It has been supposed that the jelly-like substances, called "colloids", that form the physical basis of life did not follow the known numerical relations that control the combinations of simple salts, and various hypotheses have been invented to account for their erratic reactions. But, according to Dr. Loeb, this confusion can be cleared up when we take into account the electrical state of the aqueous solutions in question.

He finds that gelatin, egg albumen and other colloids can act in a double capacity. They can form salts with acids as though they were bases or with bases as though they were acids. At a certain neutral point in between they are neither bases nor acids. This neutral or iso-electric point can be determined by the electrical conductivity of the solution. A thin membrane, like a collodion film or a cell wall, will allow the ordinary crystalline salts to pass through freely along with the water in which they are dissolved, but the enormously large protein particles cannot pass through the minute pores of the membrane. If, then, a solution of gelatin or albumen is put into a collodion bag set into a dish of water containing an acid and allowed to stand awhile, the solution inside the bag will be found to contain more of the acid than the water outside and the bag will be swollen by the osmotic pressure from withih.

Dr. Loeb has found it possible to calculate the distribution of ions of any salt, alkali or acid when the system comes to equilibrium and he concludes: "We can therefore state that it is possible to explain the colloidal behavior of proteins quantitatively on the basis of a rationalistic mathematical formula. What appeared at first as a new chemistry, the so-called colloid chemistry, now seems to have been only an overlooked equilibrium condition of classical chemistry; at least as far as the proteins are concerned."

#### SCIENCE MEASURES UNIVERSE AND ELECTRON

The amazing extension of the scope of science toward both the greatest and least of possible measurements was set forth by Professor S. A. Mitchell, director of the McCormick Observatory of the University of Virginia, in his address as retiring vice-president of the astronomical section of the American Association for the Advancement of Science at its Boston meeting. The diameter of the universe, he said, had been estimated by Dr. Harlow Shapley, of Harvard, to exceed 12,000,000,000,000,miles (twelve followed by fifteen zeros), while at the opposite extreme the electrons, the atoms of electricity that make up atoms of matter, have a diameter of .0000000000016 of an inch (sixteen preceded by twelve zeros). The theory suggested by Prout in 1215, that all the other atoms are built up out of atoms of hydrogen, is shown by modern investigations to be well founded. Dr. Mitchel. says:

"These results suggest the view that the nuclei of all atoms are made up of multiples of hydrogen nuclei each carrying unit positive charge, the combination being bound together by the external electrons. We thus see that practically the entire mass of the atom is confined on the nucleus but the size of the nucleus is very minute compared with the whole volume of the atom. In fact the radius of an electron cannot be larger in comparison with the radius of an atom than is the radius of the earth compared with the distance from earth to sun. Each atom therefore forms a miniature solar system, the external electrons being held in place and compelled to perform their orbital motions by the comparatively massive nucleus. Since there may be as many as 92 external electrons it is evident that modern mathematics cannot furnish a general solution of the motions of the electrons except in the case of the vary simplest of the atoms."

By using this new conception of the atom, Dr. Megh Nad Saha of the University of Calcutta has developed a theory of the very greatest importance to astronomy, Dr. Mitchell said. This theory enables us to calculate from the light of a star, not only the kind and quantity of the elements it contains, but whether their atoms are electrically charged or neutral, and what are the temperature and pressure of the incandescent gases of the star or sun.

New Zealand, in an attempt to establish a fishing industry, is now stocking the South Pacific Ocean with salmon.

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Natal Grass, a native of South Africa now grown extensively in Australia, has been found an excellent hay crop for the sandy lands along our Gulf Coast.

In order to eradicate cattle-fever ticks there were 48,089,005 dippings of cattle last year.

There is a case on record of a frog reviving after being frozen in a solid block of ice.

The undersurface of whales is sometimes infested with barnacles as are the bottoms of ships; but not with the same kind of barnacle.

Siamese rice growers of the interior fear to convert their rice into money because bandits prefer cash.

A radio wedding was recently performed at Pittsburgh and 500,000 persons are estimated to have 'attended' the ceremony by ear.

The principal meat eating nations of the world in order of per capita consumption are Argentine, Australia, and New Zealand, with the United States fourth.

Life has been found in the sea at depths of over 24,000 feet, although at such depths any object is under a pressure of 10,000 pounds to the square inch.

The two airplane carriers and floating landing fields, now being built for the U. S. Navy will have a speed of about 39 miles an hour.

Grape honey, a concentrated form of grape juice to which the addition of Water gives the equivalent of fresh grape juice, is being manufactured in France.

Human red blood corpuscles are so small that in about 1/15000 of a cubic inch of blood there are about five million of them.