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SCIENCE OF GROWING THINGS

Agricultural News of the Week

(Editors: This is the beginning of a supply of agricultural news that will reach you in the Bulletin. The farmer and the back-yard gardener, alike, will be interested in our timely stories.

The most important agricultural event of the year, the coming Agricultural Conference, will be covered fully from a scientific angle by Science Service.

Correspondents at leading agricultural colleges furnish the first news of agricultural progress for this section.

You will find this copy particularly useful for your mail editions that reach the suburbs and the agricultural districts, or for your weekly edition.)

NATIONAL AGRICULTURAL POLICY PROBABLE OUTCOME OF CONFERENCE

(By Science Service)

Washington, Jan. 10.—A nation-wide farm and forest policy will be the probable outcome of the National Agricultural Conference to be held by the U. S. Department of Agriculture during the week beginning Jan. 23. This is the belief of Secretary of Agriculture Wallace.

Two great major problems will be considered by representatives of all phases of agriculture and related industries; in all, nearly 500 persons: (1) The present emergency of over-production and low prices that threatens the agriculture of the country; (2) The future of our food supply.

The first problem, the one that is staring the farmers of the country in the face today, will receive greatest attention. To bring home the seriousness of the present situation President Harding suggested that this conference be called.

Linked with the emergency of today is the future of American agriculture. A wholesale reduction of acreage in the next few years will mean a lack of food in the future.

Intelligent use of the land will be considered, and steps toward a national forest policy will be taken.

Almost all of the usable land in America is now occupied, Secretary Wallace points out. Improved agricultural methods, evolved by scientific researches such as the Department of Agriculture and the experiment stations are carrying on, will be needed to assure the efficiency of American farms and the food safety of the country. By applied science it must be decided whether certain land is worth placing under the plow or whether it will be more profitable to leave it for grazing.

Wood is an agricultural crop that is over-used and under-produced. We are using our forests four times as fast as they grow. The conference will consider the importance of planting new forests on the lands denuded by man and now unprofitable for annual crops.

An address by President Harding will open the conference on Monday and then representatives from different parts of the country will sketch agricultural conditions in their sections. These reports are expected to be gloomy.

On Tuesday, remedies for the present conditions will be suggested in a number of general talks. Each of the outstanding problems in agriculture will be considered by a major committee which will have many sub-committees. The afternoons and evenings will be devoted to these committee meetings, and general sessions on subjects to be announced later will be held in the mornings.

The corn borer, the boll-worm, pink or otherwise, and other ^{Enemies of the far-}mer will have their place on the program of the conference. While the scientific phases of agriculture will play an important part, it is expected that marketing and other economic problems will also receive eager consideration at the hands of the farmers, dairymen, officials, agricultural educators, economists, and editors.

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ENGLAND HAS BEET SUGAR PLANT

Washington, Jan. 00 (Science Service).-- A large beet-sugar plant, covering more than forty acres in ground, and with a daily capacity of 600 tons of beets, recently started production at Kelham, Nottinghamshire, Consul Calvin M. Hitch, of Nottingham, reports. The British aim to establish a permanent beet-sugar industry, and this factory is classed as a commercial experiment. It would require some 200 plants of that size to meet the country's sugar needs.

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SHARP KNIFE GIVES WAY TO GAS IN FIGHT ON PEACH TREE BORER.

Rochester, N. Y. Jan. 00 (Science Service).-- Gassing of peach tree borers is the latest method of fighting this orchard pest. A chemical, paradichlorobenzol, is sprinkled around each tree and the gas coming from the white crystalline substance is heavier than the air, sinks into the soil, and kills the insects which are exposed to it for a considerable time.

Dr. A. L. Quaintance, of the U. S. Bureau of Entomology, at the recent meeting of the Crop Protection Institute here declared that this treatment has fully proved its value in a long series of experiments in the southern peach-growing areas and that it is now being applied to the control of apple borers.

The old method of fighting borers was by the so-called "worming process" which consisted of killing the grubs with a sharp knife.

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HOW RODENTS SPEND THEIR NIGHTS

Washington, Jan. 00 (Science Service).-- Spying on the night habits of mice and other small rodents is now occupying the attention of Vernon Bailey of the Biological Survey of the Department of Agriculture.

He lets some of them sleep on a sleeping porch and flashes a light on them at various times. Others spend the evening with him in the library. Another lot he has placed in a room at outdoor temperature so that he can find out how they hibernate for the winter.

Mr. Bailey is observing a bat in addition to fifteen different kinds of rodents that he captured alive in Arizona last spring, and he also is studying his beavers that live at the National Zoological Park.

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NO INCREASE OF INFLUENZA HERE;
SEVERE SMALLPOX IN MIDDLE WEST.

(By Science Service)

Washington, Jan. 00.- Health statistics of the United States so far as received by the Public Health Service here show no marked increase in prevalence of influenza or pneumonia, officials say in commenting upon reports that show that part of England is suffering with a severe influenza epidemic.

Since the severe epidemic in this country in 1918-19 and the milder one in 1920, influenza has not appeared in epidemic form in this country. Studies made by Public Health Service statisticians show that in 1889-91, thirty years ago, there was a severe epidemic. This may mean that influenza appears in epidemic form in cycles of about thirty years.

The appearance of what is called "black smallpox" or a virulent kind of smallpox in three middle western states, Oklahoma, Arkansas, and Kansas, has caused some alarm. This particular form of smallpox is combated by vaccination in exactly the same way as the milder forms and it is the same disease. Many diseases, typhoid fever among them, occur with varying severity.

General increases in diptheria and pneumonia are shown, but the officials say that they are the usual and expected increases that come with the season.

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ANCIENT INDIAN GRAVES
PROVE PAYING GOLD MINES.

(By Science Service)

Washington, Jan. 00.- The latest method of gold mining is grave robbing. Modern Indians of western South America have discovered that buried in the mounds that contain the skeletons of their ancient ancestors there also can be found gold trinkets. They burrow into these, claim the trinkets as an inheritance, and melt these priceless relics of America's wonderful pre-Columbian civilization into gold of commerce. According to Indian standards, it is a paying business, and they make a better living at this work than by ordinary day labor.

Archeologists of the Bureau of American Ethnology of the Smithsonian Institution declare that such practices are destroying forever the early history of the South American Indians. Dr. J. Walter Fewkes hopes that some arrangement can be made so that the golden images and trinkets brought to light by this novel mining will not be destroyed by melting. He suggests that it may be possible to save them by exchanging the handiwork of the ancient redmen for more than their bullion value in modern gold.

Large images of gold and silver were made by the pre-historic goldsmiths. The records of the early Spanish explorers are filled with descriptions of these golden articles, some of which were as large as cart wheels.

NEW YORK CITY FULL
OF RENTED HOMES

(By Science Service)

Washington, Jan. 00.- Fewer New Yorkers own their own homes than do inhabitants of any large city in America. There are 1,278,341 homes in New York and only 1/8 are owned by the occupants. This is revealed in a study made by the Division of Building and Housing of the Bureau of Standards which included cities of the United States having a population of over 100,000. Des Moines, Iowa, with over half, or 51.1 per cent, of its 31,644 homes owned by their occupants, has the best record.

NEWS OF THE STARS

Testing the Possibilities of Life in Other Worlds

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

Is the planet, Venus, inhabited? The discovery of the absence of water vapor and oxygen in the spectrum of Venus made recently by Dr. Charles E. St. John and Seth B. Nicholson at Mt. Wilson Observatory, raises this question.

The method used by these astronomers was to obtain such a large scale spectrum of Venus that a separation of the lines of like elements originating in the atmospheres of the two planets would be produced due to the great relative motion of the two planets. If, for instance, oxygen existed in both atmospheres there would be a doubling of the lines of oxygen in the large scale spectrum of Venus, one line arising from oxygen in the earth's atmosphere and the other from oxygen in the atmosphere of Venus.

Lines due to water vapor and oxygen were absent in appreciable amounts in the spectrum of Venus, it was found. This might be taken as conclusive proof that these essentials to life do not exist in the atmosphere of Venus were it certain that the light that we receive from Venus, which is reflected sunlight plus absorption lines due to elements in the planet's atmosphere before it was reflected to our eyes.

We know that in the case of our own planet fully forty per cent of the rays from the sun that strike the earth's outer atmosphere are turned back without even entering it. Moreover, there is evidence that the outer layers of our atmosphere may consist entirely of hydrogen while water vapor, a prime essential to life, exists only close to the surface. It is conceivable that the light from our own planet, which is reflected to another world, may originate chiefly at the outer limits of the atmosphere and be largely reflected sunlight that has never even entered the atmosphere. The same may be true of Venus. The nature of the spectrum obtained will depend entirely upon the depth to which the solar rays penetrate and in such a dense atmosphere as that of the planet Venus the depth of penetration may be extremely slight.

It would be interesting to see this method of separating lines in the atmosphere of the earth and another planet applied in the case of Mars. Here conditions are quite different. The atmosphere of Mars is extremely rare and most of the solar rays probably penetrate all the way to the surface before they are reflected to our eyes.

So far the spectroscopic evidence as to the existence of water vapor in the atmosphere of Mars is very conflicting but we know from other considerations such as the melting of polar caps, seasonal changes and the occasional obliteration of the surface by mists and haze that water vapor does exist on Mars.

The relative motion of the earth and Mars is much less than that of the earth and Venus, but if a spectrum could be obtained on a scale large enough to separate the lines originating in the two atmospheres something of interest might be learned of the composition of the atmosphere of Mars close to its surface.

INTERNATIONAL STANDARDS FOR MEDICAL SERUMS

(By Science Service)

Washington, Jan. 20.-- The foremost laboratories of the world are cooperating in a program for the international unification of standards for antitoxic serums that has been launched by the League of Nations Health Committee. This work is declared to be of great importance to the medical world as physicians have great difficulty now in studying methods of treatment of various vital diseases abroad because of the different standards of measuring the strength of serums. International standardization will also promote international trade in serums and eliminate the danger now possible through confusion of varying standards.

BROADCASTS

Radio News of the Week.

BROADCASTING AUTHORIZED ON
360 and 485 METER WAVELENGTHS

(By Science Service)

Washington, Jan. 00.- Ethereal music, sermons, vaudeville, lectures and personal advertising and other non-official radio broadcasting when on its way to eager listeners must vibrate at a wavelength of 360 meters. The daily weather reports, crop and market reports and other official and semi-official announcements have been given exclusive right of way on the radio wavelength, 485 meters.

This action of the Bureau of Navigation of the Department of Commerce, the government agency that has control over radio communication and which issues regulations governing radio operators and the use of radio apparatus on ships and on land, will shortly be officially announced.

The increase in popularity of broadcasting, commercially and governmentally, has caused allotting of these ether cables to these uses.

The recent Paris conference on international radio communication decided that radio telephony should be limited to wavelengths above 1550 meters and below 330 meters and W. D. Terrell, chief of the radio inspection work of the Department of Commerce, says that if this provision is incorporated in a convention adopted by the United States it will probably be necessary to change the wavelengths authorized for broadcasting.

Market reports of the Department of Agriculture are now being sent out from eight Post Office Department wireless stations at Cincinnati, Omaha, North Platte, Nebr., Rosch Springs, Wyo., Elko, Nevada, and Reno, Nev. From these stations the information is sent out in dots and dashes. In addition to these there are also thirteen state and private stations which are authorized to send out this crop and weather information. Missouri State market officials have just installed a wireless telephone transmitting outfit at Jefferson City, Mo.

Licenses to use the 485 wave length for broadcasting will be granted only when approved by the Government officials in charge of distributing weather and crop reports.

The right to use the 360 meter wave length is being granted to all stations that wish to send entertainment or other matter broadcast. In many localities this promises to cause ether mix-ups. Operators will be forced to get together and parcel out sending time in order that those listening in may receive their messages.

Coming - AN ILLUSTRATED SCIENCE FEATURE SERVICE

We are shortly to start an illustrated feature service. Our plan is not for a regular service at a flat subscription rate, but to supply illustrated features which will stand on their own legs. That is, we shall, each week, send out a batch of illustrated features, asking the newspapers to select what they want, if any, and to pay us for what they use at a rate which we shall state with each feature. We shall make this rate as low as we can. Newspapers receiving this material will be under no obligations to use it regularly, nor to use any of it. We hope, however, that from these beginnings we shall eventually build up a regular illustrated feature service from Washington.

In submitting the material mentioned we shall give the first opportunity to subscribers to our Science News Bulletin, guaranteeing exclusive publication in their territories.

Will you be good enough to let us know in a general way whether high-class

popular science illustrated features will interest you and whether you would prefer mats or photographic prints?

Thank you.

Howard Wheeler
Manager, Science Service

"MAN-EATING" ANTS ON
DEVASTATING MARCH IN TEXAS

(By Science Service)

El Paso, Texas, Jan. 00.- A destructive invading army of "Man-eating" Argentine ants is marching on the capital of Texas, according to reports from Austin. Officials of the State Department of Agriculture report a plan for extending warfare against the westward advance of this persistent and costly pest.

Entomologists declare the Argentine ant a pest in a class by itself, a menace not only to horticultural interests because it destroys buds, blossoms and fruit, but also a source of great damage to certain field crops and even a menace to human life.

Infants have been reported killed by hordes of these ants. Federal investigators have found localities over-run by their hosts until homes and fields were deserted, human tenants driven out by insect invaders.

Introduced into the United States probably at New Orleans, by ships from South America, this highly undesirable immigrant, a native of Brazil and Argentine, now infests other sections of the country. The federal department of agriculture recently placed its northern limit of invasion at Nashville, Tenn.; the eastern advance armies at Wilmington, N. C.; and a western group in California. Freightships and trains originating in infested areas are responsible for the widespread appearance of the insect, which has a story that reads like fiction.

Building everywhere, beneath houses or between the walls, in trees, under stones, in compost heaps and many other places, the ant increases with great rapidity. Most persistent of all, it destroys or drives out the native species and penetrates to every crack and cranny of a dwelling.

The worker ants are dark brown, small in size, and almost omnivorous. They will even enter ice-boxes and refrigerators in search of food, deterred not at all by low temperatures. Poultry raising is attended by great difficulties in localities they infest because the ants eat young chicks.

The worker ants are fond of sweet stuff. For this reason the orchard destroying aphids and scale insects which excrete honey-dew are given tender protection. Frequently the ants build protecting shelters over the fruit destroying pests, and often the workers carry the aphids and scale insects to the young tender growth of fruit trees so that they may more easily get the fruit juices.

Millions of dollars have been spent in Louisiana combating this ant. In the orange belt of Texas a systematic campaign was waged effectively by the state in cooperation with citizens of Orange and Port Arthur. The towns were laid off in districts and the ant armies routed a district at a time.

Corn, sugar-cane, and cotton are among the field crops suffering from the ravages of the pest. The workers are said to attend constantly the aphids and mealybugs attacking these crops.

Trapping with a mixture of sugar syrup and arsenic; a tree-banding mixture of one part of flowers of sulphur to six parts of commercial tree-banding sticky material; and tape soaked in a saturated solution of bichloride of mercury and hung up to dry, are some of the weapons recommended in the warfare against the ant armies.

DO YOU KNOW THAT -

While most submarine animals have their skeletons made of calcium carbonate, which deposited age after age form beds of chalk or limestone, there is a very common protozoan, named *Trichosphaerium*, whose skeleton of magnesium carbonate, may be responsible for dolomite.

Sprouted onion bulbs injected with monkey serum in two doses a month apart become wilted a few days after the second injection due to anaphylaxis or reduced resistance to the foreign substance.

One of the latest pieces of coal-mining machinery is a device which cuts the coal, without blasting, and loads it into the mine cars.

Desiccated foodstuffs, left in British army depots after the Boer war, were found to be in good condition when withdrawn for use in 1914.

DO YOU KNOW THAT -

The dark day which prevailed in New England Sept. 6, 1881, is known as "the yellow day" on account of the brassy appearance which objects assumed. There was a strong smell of smoke and the darkness was probably caused by forest fires. Many people believed the earth was passing through the tail of a comet.

Bittern is the liquid remaining, at salt works, after salt has crystallized out. It is a source of several valuable substances.

No trustworthy chemical test is known for aconitine, an intensely poisonous substance obtained from the root and leaves of aconitine. If its presence is suspected by the toxicologist, he places a little of the material under examination on his tongue, when aconitine produces a numbing, tingling feeling, lasting for some time.

A caper is the pickled flower bud of the caper bush, a native of the Mediterranean countries but now grown in other parts of the world, including the southern United States. Flower buds of several other plants, including the so-called "nasturtium" of flower gardens, are often substituted for true capers.

DO YOU KNOW THAT -

Although the Gregorian calendar is a great improvement over the Julian, which it replaced, it still involves a slight error, amounting to a day in 3,323 years. It has been proposed to correct this error by making the year 4,000 and all its multiples (8,000, 12,000, etc.) common years instead of leap years.

That diamonds sometimes burst spontaneously is a belief dating back to the middle ages, and still widely prevalent, though nobody seems to have actually witnessed this phenomenon. Numerous broken fragments of diamonds are found in the vicinity of the Kimberley diamond mines, in South Africa.

A caterpillar eats, during a summer, about six thousand times its own weight in leaves.

"Yerba maté," or Paraguay tea, is made from the leaves of a shrub belonging to the holly family.

DO YOU KNOW THAT -

According to Dr. Harlow Shapley, Director of the Harvard Observatory, whose vocation is entomology, the speed at which ants move depends on the temperature of the air. Ants that he studied in California, moved 12 times as fast at a temperature of 100 as at 50.

The slogan "Safety First", said to have been invented by a Middle Western steel company, was first given national prominence by Dr. J. A. Holmes, then director of the U. S. Bureau of Mines, at a national mine safety meeting in Pittsburgh in 1911.

A four-seeded peanut from Costa Rica is one of the "finds" recently reported by the explorers of the Bureau of Plant Industry.

Shea butter, forming an important article of commerce in the interior of Africa, is obtained from the seeds of a fruit that resembles the olive. Shea butter will keep for a year without salt. Its flavor is said to be superior to that of butter made from milk.

DO YOU KNOW THAT -

Squirrels are given credit by naturalists for aiding in the distribution of walnut trees. They bury the soundest nuts for their winter food supply and then forget where part of them are.

The "manzanilla" of the Guatemalan highlands, a close relative of the common red haw, bears edible fruits the size of crabapples. This is about the only apple-like fruit obtainable south of the Rio Grande.

Man has the property of retaining salt in the tissues even when the salt is being lost from the blood.

Kiln drying of walnut for gunstocks and airplane propellers has reduced the loss of the material in drying in some cases from 60% to 2%.

DO YOU KNOW THAT -

Big Soda and Little Soda Lakes, in the Carson Desert, Nevada, are believed to be old volcanic craters, whose tops are now almost on a level with the desert. They contain a strong solution of sodium carbonate or washing soda, together with other salts.

San Francisco is the center of the shark fin industry in this country, importing about 5 tons a month, mainly from the west coast of Mexico. Chinese merchants are the largest buyers and export the bulk of the material to China. The fins are generally dried in the sun, without salt or other treatment.

Huge circular fans used for ventilating mines from the surface are sometimes constructed either for forcing air into the mine or for sucking it out. Many fans are reversible, though constructed primarily for blowing or sucking, as the case may be.

The digestibility of sunflower silage when fed alone to cattle is approximately the same as when fed with clover hay.