

BOTANY

**Better Grasses Sought
For Venezuela's Ranges**

VENEZUELA, like the United States, has a grass problem on its hands. An American woman botanist, Mrs. Agnes Chase, has been loaned to the southern republic by the Smithsonian Institution, and has just returned after two months in the field as guest of the Venezuelan Republic.

Venezuela's grass problem is very much like that of our own Plains region: to find suitable species, native or imported, that can be used to greatest advantage in re-developing its drought-afflicted, windswept rangelands, so that they may again become able to support great herds of cattle and flocks of sheep and goats.

In addition to her two months' survey, Mrs. Chase has offered a recommendation that a Venezuelan botanist be sent to the United States for advanced studies that will enable him to continue the work she initiated. Under her supervision at the U. S. National Herbarium in Washington, D. C., is the world's greatest collection of grass specimens, and other American herbaria afford additional opportunities for exact scientific studies on these most important of all plants.

Science News Letter, August 3, 1940

INDUSTRY

**U. S. Employment Offices
To Clear Defense Jobs**

UNCLE SAM wants to get in touch with you if you are a worker in one of the 270 jobs important to national defense.

Are you a draftsman? A mechanical engineer? A form carpenter? Machine shop or foundry bench hand? Electrical assembler? Chain maker (jewelry)? Maintenance electrician? Lens grinder? Electrical instrument maker? Watch machinist? Refrigerating machine operator? Parachute packer? Sewing machine repairman? Typewriter service man? Or an armorer? Or even a farrier or blacksmith?

Do you want a job in one of the important defense industries?

Then go right away to your nearest public employment office and register. If you are trained in any other sort of work that you think may be included in the long list of "selected occupations" make a trip to the employment office and ask whether your job is included.

This information is needed by Uncle Sam for a count now in progress. The

registration is for placement in private industry at regular pay.

Here are the industries that are considered essential for defense: Aircraft manufacturing, maintenance and repair. Machine tools. Shipbuilding manufacturing, maintenance and repair. Automotive manufacturing, maintenance and repair. Electrical. Forging. Boiler and heavy steel plate. Foundry. Light manufacturing. Sheet metal. Woodworking. Chemicals. Ammunition. Ordnance, light and heavy.

Training programs are already under way to fit workers for jobs in these essential industries. Selection of individuals for this training is also being made through public employment offices.

Science News Letter, August 3, 1940

BIOCHEMISTRY

**New Digestive Enzyme
Found in Horse Nettle**

A PROTEIN-digesting enzyme, resembling pepsin in its action, has been found in the troublesome weed known as horse nettle or bull nettle by two University of California scientists, Dr. Davis M. Greenberg and Theodore Winnick. It is even more like the digestive compound found in the subtropical fruit papaya, known as papain, and because the weed's generic name is *Solanum*, the newly discovered substance has been given an analogous name, solanain.

Papain has long been used as a medicine for indigestion, and it is regarded as possible that solanain may prove useful in the same way. It may also find economic application in tanning and other industries.

Solanain is more resistant to heat than other digestive enzymes. It can stand temperatures up to 80 degrees Centigrade without losing its digestive powers, and it is also resistant to certain destructive chemical treatments.

Curiously enough, Southwestern Indians have long made use of the weed's protein-digesting ability without having any inkling of its scientific basis. They have used the juice of the berries to curdle milk into a kind of cheese.

If it becomes desirable to cultivate horse nettles as a source of enzyme for medical or industrial use, there need be no worry about supplies. The weed is widespread in this country, and is rated as one of the worst cornfield invaders in the Midwest. Not even pigs will eat it, because of its long, sharp thorns and its bitter taste.

Science News Letter, August 3, 1940

IN SCIEN

WILDLIFE

**Cancer Attacking Grouse
In British Columbia**

CANCER is attacking the grouse in British Columbia, Dr. Ian McTaggart Cowan, of the Provincial Museum, Victoria, B. C., reports (*Journal of Wildlife Management*, July).

Specimens of grouse with some unknown but apparently malignant growth on their heads, threatening to make their eyes useless, were brought in by hunters. Microscopic examinations of tissue sections were made by Dr. G. A. McCurdy, pathologist of the Royal Jubilee Hospital. He diagnosed the growth as "low grade papillary carcinomata."

"The presence of this disease in epidemic proportions in a localized area suggests that it is contagious," Dr. Cowan states. "It seems probable that the causative organism is a filtrable virus and that transmission is by biting flies."

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ASTRONOMY

**Model of 200-Inch 'Scope
Shown at Golden Gate Fair**

See Front Cover

A WORKING model of the new 200-inch telescope being erected by the California Institute of Technology on Mt. Palomar, one-tenth the size of the original, and built at a cost of \$25,000, has been placed on display at the Golden Gate Exposition. The model, with its 20-inch mirror and all necessary auxiliary attachments, is a complete telescope, and has been used for more than a year in actual observations.

The model is part of the exhibit of the Westinghouse Electric and Manufacturing Company, which built the mounting for the telescope itself. Weighing about a million pounds, the great instrument is now in place in southern California, but will not be used until the completion of the 17-foot concave mirror which will gather the rays of starlight. Many months, at least, will elapse before this is ready, since the process of grinding and figuring to the correct curve is a long and delicate one.

Science News Letter, August 3, 1940

CE FIELDS

MEDICINE

Andy Gump Chins Made Normal by Operation

ANDY GUMP chins, which are the subject of many jokes and much mental anguish, depending on whose face finishes in a badly receding chin, can be built out to normal and even handsome proportions by bone and cartilage grafting operations.

Details of such operations are reported by Dr. Gordon B. New and Dr. John B. Erich, of the Mayo Clinic (*Journal, American Medical Association*, July 20). In some cases the operation involved not only grafting of extra bone to increase the jaw but also plastic operations and implantation of false teeth in front of the patient's own, to give a normal appearance to lips and mouth as well as chin.

Improving the patient's appearance is not the only benefit possible from such operations. In most of these cases, the teeth do not meet normally and in cases where this is very marked it may interfere with chewing. Some operations may correct this difficulty as well as the defect in appearance.

Science News Letter, August 3, 1940

PHYSICS—RADIO

Uranium Energy Opens New Radio Station

THE MINUTE amount of energy released by the splitting of an atom of power-producing Uranium 235 was put to work in Boston on the night of Saturday, July 27, when it turned on the new fifty kilowatt transmitter of Westinghouse radio station WBZ.

Uranium, a heavy brittle metal, exists like other elements in several forms, or isotopes. The one of atomic weight 235 has recently been isolated in microscopic amounts. Studies made at several laboratories have led to the suggestion that if large quantities of U-235 could be secured, the world might have a practicable source of atomic power, which has long been sought.

The switchover from the present station in Millis to the new one at Hull, across the harbor from Boston, took place during a broadcast over the NBC-

Blue network. Apparatus for the atom-splitting experiment was located at Hull, under the control of Dr. E. U. Condon, associate director of the Westinghouse research laboratories at East Pittsburgh, Pennsylvania.

The splitting of the atom was heard by the radio audience as a sharp click. After two preliminary splittings, to acquaint listeners with the sound, the third one operated relays to switch from Millis to Hull.

The increased strength of the new station does not come from increased power, for this is the same (50 kilowatts) as the old one. According to Vincent F. Callahan, general manager of WBZ, it is due to the directing antenna. This reflects waves that would otherwise be wasted over the Atlantic Ocean and sends them back to reinforce those supplying the densely populated area around Boston. It consists of two 500-foot towers, one of which is the director, and the other the reflector. Located on the salt marsh of Hingham Bay, it takes advantage of the ideal properties of salt water in carrying ground waves.

Science News Letter, August 3, 1940

VITAL STATISTICS

Suicide Rate More Than Doubled, Census Shows

MORE THAN twice as many persons commit suicide nowadays as did in 1920, U. S. Census Bureau figures just released for the 18-year period 1920-1938 show. The Census Bureau does not tell why. It is their job to report the figures.

Total number of suicides in the registration area of the United States for the year 1938, latest figures available, was 19,802. For the year 1920 it was 8,959. For the entire period, the nation's total of suicides was 300,580. The rate for 1938, 15.2 per 100,000 estimated population, was the highest since the depression period, when the all-time high rate of 17.4 per 100,000 was recorded in 1932.

Of the States, Nevada reported the highest suicide rate per 100,000 estimated population in 1938 with 35.6; South Carolina reported the lowest rate with 6.7. In total number of suicides in 1938, New York led all the States with 2,248, while Nevada reported the smallest number with 36 suicides. California ranked second in total number of suicides in 1938 with 1,874; Pennsylvania third with 1,397; Ohio fourth with 1,274; and Illinois fifth with 1,271 suicidal deaths.

Science News Letter, August 3, 1940

RADIO—AVIATION

Lines on Radio Map Show Exact Location of Plane

TWO CROSSED white lines on a map indicate to an airplane pilot his exact position, with a new invention which has just received U. S. Patent 2,209,191. The inventor is John B. Dearing, of Ben Avon, Pa.

Radio compasses previously used on airplanes and ships give in numbers the direction, or bearing, of a selected transmitting station. Thus, the pilot can find the direction of two separate stations whose positions are known, mark these on a map as lines passing through the location of the transmitters. The intersection of these lines is the position of the aircraft.

To do this automatically is the purpose of Mr. Dearing's invention, the patent rights of which have been assigned to the Radio Corporation of America. Two radio receivers tune in the two stations, on a loop antenna, which responds best when the station is in the plane of the loop. The antenna rotates, and as it does so the intensity of the signal varies in strength.

The receivers control two beams of cathode rays, in a vacuum tube, which fall on a screen similar to that used in television receivers. The beams oscillate back and forth, tracing out two lines on the screen, and the direction of the lines depends on the bearings of the stations. By a small magic lantern incorporated into the device, a map is projected from a film on the same screen. Thus, the pilot sees the map, with the two bright lines, superimposed. Their intersection shows his location, which changes as he flies along.

Science News Letter, August 3, 1940

INVENTION

New "Note Finder" Helps Music Teachers

AN AID to music teachers is the recently patented "note finder," consisting of a panel marked with the bass and treble clefs and the usual staves. By means of an endless cord, running over a roller behind the chart, a note can be moved up and down to various positions.

It can be used in two ways. Either the teacher can set the note, and the pupil name or sound it, or it can be operated by the child, who sets it to the note named or sounded by the instructor.

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