

CHEMISTRY

Rayon From Rice Husks Is Newest Japanese Industry

A \$2,900,000 industry is being promoted in Tokyo with the object of producing rayon-making pulp from rice-husks, of which a practically unlimited supply is assured in Japan.

The process which forms the basis of the new industry has been developed by the Tokyo Industrial Laboratory, a division of the Department of Commerce and Industry, in collaboration with the research institute of the South Manchuria Railway Company.

Because Japan depends on imports for 250,000 out of 300,000 tons of rayon pulp annually consumed by the artificial silk industry, the supply of raw material from an entirely new source is expected considerably to benefit the textile industry as well as the farmers who are hard put to make a living from their scanty acres.

Japan at present is among the world leaders in the production of rayon yarn. And Japan is the world's first rice grower. The annual crop averages 475 million bushels. Since one bushel of rice yields about 419 pounds of husk, the entire turnover of the rice crop in Japan should yield nearly four billion pounds of husk a year. At present rice-husks are thrown away as practically worthless.

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METALLURGY

Gold Mined Since 1492 Would Make 41-Foot Block

GOLD is troublesome stuff. Men snarl and fight over it like dogs, dig it up, bury it again as a dog re-buries a treasured bone. For some obscure reason, we do not know what to do without it, yet we do not know what to do with it.

We can get scientific information about where gold comes from, even if not economic counsel on what to do about it, from a new book, *Gold Deposits of the World*, by Prof. William Harvey Emmons of the University of Minnesota, formerly a member of the U. S. Geological Survey.

Prof. Harvey opens with a few figures that impress at first with their magnitude, but on second thought impress just as much with their relative "minutude." It is estimated, he says, that since the discovery of America in 1492 to the end of 1935 the world produced

1,194,913,216 ounces of gold. At the present price of \$35 an ounce, this would fetch \$41,821,962,560. A tidy sum; yet if it were all in Uncle Sam's possession at present not a great deal of change would be left over if it were used to pay the National Debt.

If all of this mass of gold were still in existence and all cast into one lump, it would make a cube only 41 feet on an edge. This makes the fact easier to grasp, that Uncle Sam is able to put his 40 per cent. share of the world's existing ingot gold into one cellar in the Kentucky hills and sit on it with the aid of only a handful of soldiers.

Of the gold produced between 1492 and 1935 less than 10 per cent. was obtained in all the time from 1492 to 1800. During the nineteenth century 31.3 per cent. of the total was added, and in the first 35 years of the twentieth century all the rest, nearly 60 per cent., came out of the earth.

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MYCOLOGY

Fungus Lassos and Devours Unlucky Animal Prey

A FUNGUS, a sort of fifth cousin to the common bread mold, that captures and eats small worms was recently described by Dr. J. N. Couch of the University of North Carolina. While insect-eating plants such as the Venus fly trap and the pitcher plant are quite well known, animal-catching fungi are rare.

The fungus grows in a thread-like form. Loops are spaced at intervals along the thread. These are the traps. When a worm sticks its head or tail into one of these loops it contracts, tightening up on the worm and holding it fast. At times a worm may be caught by two of the loops.

When the worm is firmly held, small threads grow out from the main thread. They penetrate the body of the worm and digest it. Dr. Couch was able to watch the capture and digestion of the prey.

The interest aroused by his report before the North Carolina Academy of Science led to the award by that body of a gold medal which entitled Dr. Couch to become a contestant for a prize of \$100 to be awarded for the most outstanding paper presented before the Academies of Georgia, North and South Carolina and Virginia. Dr. Couch was awarded the grand prize.

Science News Letter, August 21, 1937

IN SCIENCE

ZOOLOGY

European Bison Dwindling; Only Eighty-Four Are Left

IN STRIKING contrast to the now seemingly assured survival of American buffalo, or bison, is the still precarious status of the European bison, or wisent. There are only 84 head of pure-blooded animals left, a summarizing study of the International Society for the Preservation of Wisent shows.

In addition to the pure-bloods, there are a good many hybrid wisent, results of crosses with American bison. By a process called "elimination breeding," in which only pure-blooded bulls are used with hybrid cows, the proportion of bison blood is being reduced in the hybrid stock, so that eventually these will be almost full-blooded wisent also.

Before the World War there used to be a large herd in the Russian Caucasus and another in Poland. During the war and the confused period afterwards, these animals were all killed by distressed populations needing food at any terms. The small herd now re-established in the U. S. S. R. does not seem to be pure-blooded. In England also the only herd, on the estate of the Duke of Bedford, is hopelessly hybridized.

In Sweden, Germany, and Poland, however, the pure-blooded and hybrid herds are kept sharply separated, so that the historic stock may be maintained as nearly as possible in its original state.

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CHEMISTRY—MEDICINE

Chemistry Should Aid Medicine In Four Fields

CHEMISTRY and the chemist will determine the success of four great divisions of medical research now under way, declares the Nobel Prize winner in medicine, Prof. George H. Whipple, Dean of the School of Medicine and Dentistry at the University of Rochester. The four fields of medicine are: virus diseases, studies of the ductless glands, chronic diseases and studies of the physiology of the central nervous system.

Science News Letter, August 21, 1937

E FIELDS

ARCHAEOLOGY

Rattles Were More Used By Adults Than Babies

ALMOST 5,000 years ago, babies in the old city of Kish in Mesopotamia were kept happy with rattles, says Richard A. Martin, archaeologist, of the Field Museum of Natural History. Yet, rattles have been used more by adults than by children in most lands explored by science.

Soldiers in ancient China were stirred by music of bronze rattles in military orchestras. African tribes devised many kinds of rattles for use in magical rites. Egyptians had a kind of rattle called a sistrum, made of a staff with metal rings dangling at the end, and used in solemn religious ceremonies. American Indians used rattles in religion and magic.

Modern Europe and America stand out as exceptions in using rattles mainly for amusing babies.

Rattles unearthed at Kish include some shaped like goats and hedgehogs, to catch the babies' eyes, as well as amuse them with the jingle of pebbles inside the hollow toys.

Science News Letter, August 21, 1937

SOCIOLOGY

Fine House Not Always Makes Successful Home

THERE is a difference between "house" and "home." The house is the physical structure, but the home is an edifice of feeling, sentiment and social contacts that brings together the family and the house.

The importance of understanding this relationship in our national efforts to better the housing conditions of many localities is stressed by Dr. Carle C. Zimmerman, Harvard sociologist, in his new book "Consumption and Standards of Living" (Van Nostrand).

Stability or what Dr. Zimmerman calls a "symbolically permanent attachment" between a family and its hearth is important to the psycho-social magic that surrounds a home.

Take the mill villages of the South. Stabilized home conditions are found in

the most ordinary types of houses, while there are exceedingly demoralized conditions among some of the dwellers in the better homes. Often conditions are such that families are not sure of being able to stay permanently in their houses; they can not build up a true home.

"Haggard, demoralized faces often peer out of the doors and windows of many of the well-painted company residences," says Dr. Zimmerman, "while peaceful happy faces are to be seen often in the crude outlying villages where the mill employees own their own homes and are in more or less permanent attachment to the industry and the place."

Of great import to housing reform are these sociological and psychological aspects. Houses can be built, but of equal importance is the rebuilding of the home spirit. Along with firm foundations and livable dwellings, there must be long-time and increased stability of the tenures of the families who will dwell in the new houses.

Not always is a new house or a better house an unmixed blessing. People who live in fashionable suburbs where they have to keep up with their neighbors may support an unnecessarily expensive house and restrict the size of their family.

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ORNITHOLOGY

Chasing Away Starlings May Be Kindness to Them

CHASING starlings off their roosts with balloons on strings, noise-making devices, and so on, may be doing them a favor, a report in Nature on the investigations of Prof. William Rowan of University College, London, indicates.

Prof. Rowan found that forcing birds to exercise, even in dim light, had the effect of stimulating their sex glands and starting the breeding season earlier. With many other workers in his field, he has also studied the stimulating effects of artificial lighting on their breeding cycle.

He captured and dissected a number of starlings in the busy, brightly lighted West End of London, well before the beginning of the normal breeding season. A number of country starlings were also killed and studied. Both male and female birds that had been exposed to city glare and disturbance were much farther advanced toward breeding activity than were their kin-starlings from the quieter countryside where the bright lights do not shine.

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PALEONTOLOGY

Find Extinct Beast Big As a Hippopotamus

Fossil remains of a hitherto unknown species of extinct mammal, big as a hippopotamus, have been found in Colorado by an expedition of the Field Museum of Natural History. Bryan Patterson, in charge of the expedition, reported the find.

The creature lived in the early days of the Age of Mammals, about 45 million years ago, when the region that is now the Rocky Mountains was a low, flat plain.

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ASTRONOMY

New Comet Is Discovered; Finsler's Has Second Tail

THE much-watched Finsler comet which is now speeding across the northern sky and which can be seen with the unaided eye, has now been joined in the heavens by a new comet.

Dr. Edwin P. Hubble, noted astronomer of the Mt. Wilson Observatory in California, has found, with his powerful telescope, a very faint comet of the 13th magnitude in the constellation of Aquarius, midway in the southern sky. This news is revealed by Harvard University Observatory, which acts as the clearing house for astronomical news in this hemisphere. The new object, to be known probably as the Hubble comet, is much too faint to see with the naked eye.

At the same time Harvard Observatory confirmed reports that the Finsler comet has a second tail, a short one hardly one-tenth the size of the big one, 2,000,000 miles long. A Baltimore, Md., amateur stargazer first noted this second tail.

Powerful instruments are needed to see the smaller tail although the unaided eye can see the comet itself. Small field glasses will reveal the large comet tail. Finsler's comet reached its maximum in brilliance on August tenth when it was near the middle star in the handle of the Dipper.

The position of Dr. Hubble's new comet in the southern sky was given as: right ascension 22 hours, 49 minutes, 19 seconds, and declination south, 21 degrees and zero minutes. Its diameter is 30 seconds of arc and its motion 30 seconds west and 5.5 minutes south. Further observations are being taken and more information about it, including its orbit, should be learned soon.

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