

CHEMICAL TECHNOLOGY

Research Finds New Ways Of Finishing Wood

BBETTER finishing processes which will make wood more beautiful and preserve it longer were described by James W. Lawrie, director of chemical research for the A. O. Smith Corp., of Milwaukee, Wis., before members of the American Society of Mechanical Engineers at their annual meeting in New York this week. Mr. Lawrie was discussing research problems of the woodworking industry.

It has already been learned, he said, that present methods of sanding, staining, filling, varnishing, etc., are at least theoretically incorrect. A method was explained by which floors are curried instead of sanded and the "whiskers" shaved off. Filler is then applied under pressure. When floors finished this way were tested with a walking machine, it was found that after receiving 1,500,000 artificial steps they were in as good condition as ordinary floors given only 250,000 steps.

Another accomplishment of wood research, Mr. Lawrie pointed out, is the finding by Dr. George L. Clark of the University of Illinois that the swelling of wood by water is not a chemical but a physical change. It had been thought that swelling might be caused by chemical union of the cellulose with water, but Dr. Clark showed that water merely penetrates between the cellulose crystals and pushes them apart by capillary force.

Preventing wood decay and making wood fire resistant without destroying its strength were also mentioned as problems.

A new laboratory working in this field is that of the National Lumber Manufacturers' Association in Washington, Mr. Lawrie said.

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ASTRONOMY

Comet is Rediscovered By Japanese Astronomer

NAKAMURA'S comet, which gets its name from the astronomer at the Kwasan Observatory of the Kyoto Imperial University in Japan who discovered it, has just been rediscovered at the same observatory by an astronomer named Sibata. The Central Astronomical Bureau of the International Astronomical Union at Copenhagen, Denmark, has just received notification

that the comet was picked up again on November 13. Then it was in the constellation of Taurus, the Bull, high in the eastern evening sky, and characterized by the red star Aldebaran. The comet was just to the south of the Pleiades, and was slowly moving to the west.

Dr. Nakamura found the comet originally in 1922. Calculations of its orbit, made by Dr. Issei Yamamoto, director of the Kwasan Observatory, indicate that it was at perihelion, that is, the position closest to the sun, on October 21. Therefore, it is now receding from the sun, and will become fainter. On the date of discovery it was of the thirteenth magnitude, too faint to be seen except with a moderately large telescope. Astronomically, its position at discovery was 3 hours, 40 minutes, 41.5 seconds right ascension and 18 degrees 53 minutes 25 seconds north declination.

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ACCIDENT PREVENTION

Engineering Revision Seen As Accident Preventive

EDUCATIONAL campaigns in safety, startling posters and the like have their place in preventing accidents, but there is another form of accident prevention which has already greatly reduced accidents and still has limitless possibilities. It is engineering revision.

By engineering revision is meant buildings designed for health and comfort, well arranged transportation facilities, ready and safe access to every place workers are required to go, adequate and well-arranged lighting and the safeguarding of machinery, Lucian W. Chaney, expert in accident prevention of the U. S. Bureau of Labor Statistics, told members of the American Society of Mechanical Engineers at their annual meeting in New York this week.

Mr. Chaney found that in a special study of accidents causing 372 deaths, 212, or 57 per cent, could have been prevented by some form of engineering revision.

"This can be said without qualification," he declared. "It cannot be said, however, that all the other 43 per cent would have been amenable to educational methods in response to which caution would insure safety. In only about 10 per cent of these deaths would it be safe to say positively that the man's own carelessness clearly appears as the major factor."

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IN SCIENCE

ARCHAEOLOGY

Old Temples Stood on Ruins Of Still Earlier Temples

ROMAN temples standing on the foundations of temples of pre-Roman days, just as Christian churches have frequently been found to rest on the ruins of pre-Christian temples, have been excavated in the great temple district of Trier, Germany. This area, a kind of trans-Alpine Acropolis, was discovered only recently, but has already yielded more than sixty temples to the explorations conducted by the Provincial Museum. The temples were built by Romanized Teutons and Celts to half-Romanized gods whom they had worshipped before Trier was founded by the Emperor Augustus. It was natural therefore that their new stone temples should follow the architectural lines of the old, pre-Roman wooden ones.

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ELECTRICITY

Electric Power Tie-ups Will Soon Cross Mississippi

ELECTRIC power transmission systems of the eastern part of the United States are so interconnected that the principal systems east of the Mississippi river may now interchange power.

"This territory comprises an area of approximately 900,000 square miles, about twice the size of Germany, France and England combined," B. F. Wood, president of Allied Engineers, Inc., of New York, told members of the American Society of Mechanical Engineers at their annual meeting in New York this week.

"Within a relatively short time," Mr. Wood declared, "interconnecting links will be extended to include other power systems west of the Mississippi, making the area of the then connected systems in excess of 1,500,000 square miles, in which there is a population of approximately 98,000,000."

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E FIELDS

MEDICINE

Advises Delay in Test Of Paternity by Blood

BLOOD group tests to determine a child's paternity should not be made until at least two weeks after birth, Dr. Carl H. Smith of Cornell University Medical College advises in a note to the American Medical Association.

Dr. Smith has found from a study of blood groupings that for the first ten days or so the infant's blood group is influenced by the direct transmission before birth of some of the mother's blood. After that period, the child's own blood group becomes fully established and a fair, reliable test can be made.

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PHYSICS

Violin Bows May Be Made Of Silver Threads

VIOLIN bows, which have been strung with horsehair ever since the Middle Ages at least, may soon have to yield place to a new form of an old material. A German violinist has been experimenting with bows strung with silver wires of hair-like fineness, slightly roughened on their surfaces to set the violin strings vibrating.

It is stated that a sensitiveness and brilliance of tone are achieved that excel the effects usually obtained with the old horsehair bows.

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SOCIOLOGY

Young Workers Get Sick Oftener Than Older Ones

THE YOUNG industrial worker is more apt to get sick than the older employee, a study just reported by the Milbank Fund has shown. On the whole, workers in industry are healthier than the general population. The statistical analysis of the study was made for the Fund by Dean K. Brundage of the U. S. Public Health Service.

The fact that the older employees are

healthier than the younger ones and likewise healthier than men and women of the same age groups outside of industry can probably be explained on the grounds that the healthier individuals tend to remain in industry to a greater extent than the sickly. Industrial workers appear, in the main, to be the flower of the general population in physique and constitution.

Women workers tend to be absent because of illness from 50 to 100 per cent more often than men, especially for short periods. Married women were absent from work much more than single women.

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ARCHAEOLOGY

New Theory Explaining King Solomon's Mines

THE OLD romantic legends that link King Solomon's Mines with the mysterious ruins of Zimbabwe, in South Africa, have been sharply demolished by the conclusions of Miss Gertrude Caton-Thompson, British archaeologist. In place of the legends, we are now asked to believe stranger things.

Instead of an ancient Semitic colony building the stone walls of Zimbabwe, Miss Caton-Thompson pictures African natives piling up the great cone-shaped towers, the courts and stairways, and the mazes of thick stone walls. This is difficult to imagine, in view of the Bantu tribesmen today. It means that centuries ago these people rose to a height of ambition or fear or civic intelligence when they put forth great organized efforts and made for themselves this stronghold and sanctuary. The walls in places are sixteen feet thick.

Explaining her finding that everything about Zimbabwe seems to be African Bantu, Miss Caton-Thompson states, in a report to Nature:

"My respect for, and interest in, the Rhodesian ruins is enormously strengthened by these conclusions. Instead of a degenerate offshoot of a higher Oriental civilization, we have a vigorous native culture showing high organization, originality, and industry. It is a subject worthy of all the research South Africa can give to it. South African students must be bred to pursue it."

The age of South Africa's great building venture is now set to be not older than 600 A. D. and probably some centuries later.

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CONSERVATION

Suggest Paying Farmers For Raising Game

MAKE landowners really interested in the conservation and increase of game birds and animals by paying for the labor and materials used in their care.

That is the core of a new game policy advocated by a committee of the Seventeenth Annual American Game Conference, which met in New York this week.

The policy of protecting and colonizing game on lands unsuitable for farming or other commercial uses is admirable so far as it goes, but this policy is good only for this class of cheap lands, it was pointed out. High-priced farm and commercial forest lands are necessarily too much subjected to human management to permit game development under natural conditions. It is not fair, the committee stated, to expect the owners to divert part of the land use, and therefore potential revenue, to game raising unless a corresponding compensation is made to them.

This policy is now being tried out on an experimental large-scale basis in one county in Michigan, and is said to have given good satisfaction there.

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BACTERIOLOGY

Alfalfa Root Bacteria Supply Own Transportation

THE nodule bacteria of alfalfa roots, capturers of air nitrogen and builders of soil fertility, are active wanderers during their younger days, before they settle down to their life work. Bacteriologists at the great Rothamstead Experimental Station near London have taken advantage of this microbiotic wanderlust to secure better infection of alfalfa seed before planting.

The bacteria go through a series of life stages much like those of some aquatic animals, being free swimmers while they are young and sessile when they mature. When they grow old their cell contents assume a banded appearance, then break up into tiny globular bodies. These latter elongate into rodlets which at first have the power of motion. By encouraging these swarming youthful wanderers with a diet of milk and phosphates, it is possible to secure a much better inoculation of alfalfa seed.

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