

GENERAL SCIENCE

European Laboratory Tour Planned by Research Council

INDUSTRIAL and banking executives from New York and all parts of the country will be taken behind the scenes of Europe's industrial and other research institutions next summer, it was announced by the National Research Council's Division of Engineering and Industrial Research.

One hundred leaders in industry and banking from all sections of the United States are expected to participate in the tour of European laboratories.

The group is scheduled to sail on May 14 from New York on the S.S. Champlain, according to present preliminary plans, and will visit outstanding scientific research laboratories of private industry representing eighteen major fields as well as the laboratories of governments, universities and trade associations.

The tour will take the American group to industries and laboratories in England, Germany and France and is being arranged by Maurice Holland, director of the National Research Council's Division of Engineering and Industrial Research.

Science News Letter, February 13, 1937

ANATOMY

Brain Keeps Growing But "Brains" Do Not

THE BRAIN inside your head continues to grow until the age of 50 or 60 years.

Evidence for this invisible growth, detected by measurements of great numbers of human heads, is reported by Dr. Ales Hrdlicka, noted anthropologist of the U.S. National Museum. That the human head continues to grow until old age sets in is demonstrated by Dr. Hrdlicka's own measurements of American heads. Foreign scientific studies reveal the same growth phenomenon in other peoples.

Dr. Hrdlicka has concluded the most logical cause for this head growth is that the brain itself is growing, since there is no evidence that the scalp or bones of the vault thicken with age. The chance that frontal sinuses would account for the enlargement is also discounted, since Dr. Hrdlicka explains that they attain their full growth when the adult is still fairly young.

Continued slight growth of the brain does not serve to improve intelligence

in adults, so far as is known. That is, the new idea of a growing adult brain does not, so far, alter psychological views, that only in exceptional individuals does absolute intelligence increase after about 20 years.

Dr. Hrdlicka's measurements show that each part of the body seems to have its own growth curve, harmonizing in complex patterns into the growth of the body as a whole. The nose, he has found, may continue to grow longer and broader well into the sixth decade of life, and the ears may continue to grow even after an individual is 80 years old. The mouth is still growing after 60 years.

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TECHNOLOGY

Making Bricks With Straw Found to Be Good Science

WHEN the old Pharaoh of Egypt in the Bible's chapter of Exodus denied the Hebrews further straw with which to make brick, he may have been faced with a shortage of straw or really wanted to keep them busy as reported. But on top of that, whether he knew it or not, he was throwing out a sound scientific phenomenon which straw's properties had brought to ancient brick-making through previous ages.

Experiments conducted by Charles R. Oberfell, chemist for a paper firm in Lynchburg, Va., and Prof. John W. Whittemore of the Virginia Polytechnic Institute, Blacksburg, have developed a material containing tannin extract—a constituent of straw—for the manufacture of bricks.

It was this material, and not the binding qualities of straw, that made the Egyptian process worthwhile, the chemists assert.

Known as "plasticade," the substance has a lignin and tannin base. It is being put into use by manufacturers of brick and tile throughout the United States, the discoverers report.

Conclusions have been reached both in laboratory and plant investigations that the use of this combination of lignin and tannin has extensive economic value as an addition to clays and shales because it reduces manufacturing losses and improves the physical qualities of the finished product.

Other advantages include: reduction of losses in drying and firing, improvement in strength and resistance; decrease in shrinkage, and reduction of absorption.

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IN SCIENCE

ARCHAEOLOGY

Old Razor Blade Problem Stumped Stone Age Men

DISCOVERY that even prehistoric man didn't know what to do with old razor blades has dawned upon archaeologists.

Digging in Mesopotamia, in ruins of the world's oldest city, Tepe Gawra, Dr. E. A. Speiser of the University Museum, University of Pennsylvania, brought up a 6,000-year-old razor handle. The handle is of gray limestone, has a long slit to take the blade, and a loop for the middle finger. Dr. Speiser reports that straight razors have not improved much in 6,000 years.

"This solitary handle now lends meaning to the thousands of blades of flint and obsidian that have been turning up loose on prehistoric sites," he comments. Many are old razor blades discarded in the Late Stone Age.

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PHYSICS

Polarized Light Aids In Selection of Yarns

NEW methods of examining undyed yarns developed by Prof. Edward R. Schwarz of the Massachusetts Institute of Technology reveal the history of the yarn and even its age when picked. Special polarized light and the microscope are the tools of the new technique which is revolutionizing the art of selecting yarns for textiles.

Undyed yarns are nearly colorless in ordinary white light but when examined with a microscope and polarized light they exhibit various brilliant shades of color in different places. These colors are the tell-tale signs of immature fibers. In the case of cotton, particularly, "unripe" fibers are weak and must be detected quickly, states Dr. Schwarz.

Even man-made rayon is not perfect and the weak spots in rayon yarns can similarly be detected by the method. Weaving the yarn into cloth does not destroy the evidence of defects and the scientific detective method can tell not only how good the yarn is but also how well the weaving was done.

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E FIELDS

TELEVISION

Japan to Spend \$1,500,000 On Television Research

RESEARCH in television in Japan is to be furthered by the expenditure of an appropriation of \$1,500,000 during the present year. The funds have been made available by the Japanese Broadcasting Corporation.

A laboratory to house the experiments of Professor Takayanagi, television expert, will be completed next month. The Japanese is reported to be 90 per cent successful in his experiments to use a daylight television receiver instead of the present fluorescent-light type. Hope of the JBC is to give television broadcasts of the 1940 Olympic games.

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MEDICINE

Aspirin, Generally Safe, Hard on Sensitive Persons

WHEN a person is sensitive to aspirin, he is violently sensitive to aspirin. And when he isn't, he isn't.

From the Mayo Clinic, Rochester, Minn., comes a report of hypersensitivity to this familiar and ordinarily innocuous drug, involving 62 cases.

All one of these persons needs to do is to swallow a five-grain aspirin tablet. In from ten minutes to two hours dreadful things begin to happen.

Asthma in an alarming form is the most frequent and serious type of reaction. Other people get terrible sneezing fits and their noses stop up. Some have "giant" hives and others break out into a rash. Some persons' faces swell until their eyes are closed. Others get severe cramps in the abdomen. Still others develop great purple splotches on the skin.

Women are more sensitive to the drug than men. Everyone who is upset by aspirin seems to have a personal or family history of allergy.

Those with asthma are particularly liable to be sensitive and if along with their asthma they have nasal polyps, it goes hard with them indeed. Patients such as these have been known to die following a dose of aspirin.

If an individual knows he is sensitive

to aspirin he can avoid it, and he will after one attack of any violence. But the presence of acetylsalicylic acid, its scientific name, in many "patent" medicines makes them an unsuspected source of danger.

Say Drs. Louis E. Prickman and Harold F. Buchstein of the Mayo Clinic, after describing their 62 cases (*Journal, American Medical Association, Feb. 6*): "Acetylsalicylic acid is a useful and effective drug, and it may be prescribed with relative safety to patients who give no history of personal or familial allergy. It may also be used with caution by allergic patients after ascertaining that it has been used previously by them without ill effect."

Science News Letter, February 13, 1937

CHEMISTRY

Dyes Kept From "Bleeding" By New Compounds

YOU MIGHT shudder at the odor of a stale egg; or turn up your nose at the smell of a bad fish; or choke on ammonia fumes. But the ammonia which chokes, the hydrogen sulfide gas which makes the egg smell bad, and the phosphine gas which make the fish smell foul, are the basis of the newest test tube "babies" for the textile industry—the "onium" compounds.

Watch particularly the quaternary ammonium, phosphonium, and sulphonium chemical infants. These are complex compounds with hearts of nitrogen, phosphorus and sulphur atoms. They bring joy to the textile dyer, printer and finisher, who is responsible for the beautiful color and finish of the clothes you wear.

Does the dye in a dress "bleed"; that is, run when it is wet or contacts perspiration? Just dip it in a warm solution of cetyl pyridinium bromide, rinse and dry. Notice how fast the dyes become. Water and perspiration no more make them run.

Did the dyer put the wrong dye on the fabric, or didn't the dye go on evenly? He needn't worry. He can strip the dye completely from the fabric and dye all over again. Trimethyl cetyl ammonium bromide, another one of those new "onium" compounds, does the trick.

Other of the "onium" chemicals whose names need not worry the layman have now made it possible for the dyer to use wool dyes on cotton and synthetic silks. This is helpful, for the wool dyes have always been of brighter shades than the others.

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METALLURGY

Beryllium-Copper Alloy Notable for Hardness

THE OLD and the new combine to make one of the newest alloys which metallurgists have developed. The result is a metal which is harder than the hardest bronze.

One of the first metals man used on his way up the scale of civilization was copper. And one of the newer metallic elements is beryllium, found in the mineral beryl, of which mineral emerald and aquamarine are common varieties. Beryllium is lighter than aluminum and so hard that it will scratch steel. Because of its wide use in experiments on nuclear bombardment its name is now better known than formerly.

Add about two per cent beryllium to copper and a ductile alloy is obtained. By heating and cold working, this alloy can be raised in tensile strength from its initial value of from 60,000 to 80,000 pounds to the square inch to over 170,000 pounds to the square inch.

Resistance to wear of the new alloy is said to be five times as great as phosphor bronze and its resistance to fatigue is exceeded only by a few steel alloys.

Its valuable properties give it increasingly wide use. High resilience and resistance to corrosion and fatigue make it desirable for coiled springs, flat springs and switch blades. Hardness and shock resistance make it useful for non-sparking handtools such as hammers, chisels and wrenches. Great resistance to wear makes it advantageous to use for bearings, gears, sliding contacts, handles of surgical instruments and wire cloth.

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PLANT PATHOLOGY

Disease-Resistant Tobaccos From South America

DISEASE-resistant varieties of tobacco have been brought back to the United States from northern South America by Raymond Stadelman of the U. S. Department of Agriculture, who searched for them on a 10,000-mile trip through Colombia, Venezuela, Peru and Ecuador. Plants raised from the 359 samples of seeds obtained by Mr. Stadelman will be crossed with cultivated tobaccos in an effort to obtain profitable strains for the market which will also be resistant to diseases.

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