

EXPLORATION

Eskimos Making Garments For Antarctic Expedition

ALASKAN Eskimos have already been set to work by the Division of Arts and Crafts of the Office of Indian Affairs making mukluks—reindeer fur boots—and parkas or fur hoods for members of the forthcoming U. S. Antarctic Expedition. Sailmakers in Boston are also at work on clothing made of tight-woven cotton airplane fabric which is both wind resistant and light in weight, the Antarctic Service, which is organizing the expedition, said.

The Eskimos are being paid for their work out of funds for the expedition. The Indian Office regularly employs them in making similar garments.

Other clothing for the expedition will come from War Department stocks or will be bought from the open market, it was stated. Leather ski boots are to be used for traveling. The men will all wear long flannel underwear during the entire year they are in the Antarctic.

Science News Letter, August 5, 1939

PSYCHOLOGY

Sound of Mother's Laugh Baby's First Music Lesson

HARASSED mothers who interfere when small Johnny bangs on his tray or kicks the parlor table are discouraging the musical development of their sons, warns an expert on the psychology of music, Dr. Carl E. Seashore, of the University of Iowa.

They do not realize that banging is music to the child under five.

A child is not unmusical because he does not understand the artistic singing or playing of a talented mother. He must be musical in response to his own environment.

"To the primitive tribe, the drum is a powerful, thrilling musical instrument," explains Dr. Seashore in a University of Iowa Child Welfare Pamphlet. "So are all forms of drumming to the child. He imitates the whistling, tooting, rattling, banging sounds in his environment, sometimes until he becomes noisily tiresome. He feels in harmony with the clock that ticks, the birds that sing, the dog that barks, the cat that mews. He loves to bang on the piano and blow his horn."

Baby's first music lesson is his mother's laugh as they play together.

When he learns to play with this sound himself he has come to the be-

ginning of singing and appreciation of music. When he gurgles and goes, playing with modulations in pitch, in loudness, in duration and different kinds of tone quality—that is the beginning of musical creation, of composition.

Nursery music education goes on when baby learns to patty cake, to wave his rattle, to jingle his bells.

The first formal lessons take place when he is taught to speak. For speech has the same art as music and beautiful speech is the first step in attaining a beautiful singing voice.

Let the baby hear musical speech—no scolding, harsh, unmodulated voices. No discordant jangling of noisy arguments.

But if the mother cannot speak or sing beautifully, she need not be discouraged in an attempt to help her child. More important than the example of beautiful sound is the encouragement of a sympathetic audience.

"The mother's first task," said Dr. Seashore, "is to be a good listener."

Science News Letter, August 5, 1939

MEDICINE

Faster Night Cell Growth Suggests New Cancer Lead

A NEW lead on that disastrous condition of uncontrolled and rapid cell growth, cancer, is suggested by the discovery that some cells of the body grow about twice as fast by night as by day.

The discovery of the day and night rhythm of cell growth by division was made by Drs. A. C. Broders and W. B. Dublin, of the Mayo Foundation.

Cells of human skin, removed at different hours during the day and night, were the subject of their study. The cells, they found, divided into new cells about twice as often at night as during the day. This diurnal rhythm of cell division may occur throughout the body, and perhaps even in tumors, the Mayo scientists point out, although they add that cancers need not conform to any laws governing normal, well-differentiated tissue.

Cancers of both humans and animals should be investigated with this growth rhythm in mind, they suggest.

The increase in cell division at night is explained as follows:

"It appears that during the day, the emphasis lies on work, digestion, respiration and other processes of like nature, and that during the night, when need for these functions is diminished, attention is turned toward repairing run-down tissues and building new ones."

Science News Letter, August 5, 1939

IN SCIENCE

CHEMISTRY

Common Raw Materials Give Important Chemicals

THE WORLD'S most important industrial chemicals are made from a small group of mineral raw materials, although the production of a single chemical may require an amazingly large number of other chemicals, processes and raw materials.

If the chemist were given three wishes, as in the fairy tale, he would pick these groups of raw materials: 1. Coal, petroleum and natural gas. 2. Sulfur and sulfide ores. 3. Salt, brines and sea water. For these, with limestone, air and water are most frequently used in manufacturing our chemical civilization.

Drs. R. N. Keller and T. T. Quirke at the University of Illinois have been looking into the source of 150 important industrial chemicals, ranging alphabetically from acetanilide to zinc sulfate. They can be traced to 34 raw materials.

Take ammonia, for instance. It and the materials used in its manufacture include ammonia liquors, nitrogen, hydrogen, calcium cyanamide, catalysts and catalyst supports, peat, bones, animal refuse, sugar beets, etc. Ammonia liquors come from coal gas which comes from coal. Nitrogen comes from the air, hydrogen from water. In fact, all the ammonia sources can thus be traced back to air, water, coal and limestone.

This digging back into origins is not just an academic exercise. It may very well aid a producer or owner of some raw material to plan manufacturing and distribution of a product. Since transportation of heavy raw materials is costly, intelligent knowledge of what is needed ultimately to produce a product may allow shifting of industrial plants to more advantageous locations.

Water and air are most frequently used ultimate geologic raw materials, used 99 and 96 times in the case of the 150 chemicals. Next in order are coal, 91; sulfur, 88; mineral salt, 75; limestone, 63; sulfide ores, 32; brines, 24; petroleum, 23; natural gas, 16; saltpeter, 13; potassium minerals, 11; gypsum, 10. The other 21 raw materials are used less than 10 times each.

Science News Letter, August 5, 1939

E FIELDS

ICHTHYOLOGY

Fear Dams Will Harm Our Migratory Fish

CURRENT fish stories:

The Western Division of the American Society of Ichthyologists and Herpetologists and the Western Society of Naturalists, in convention assembled, fearful that Bonneville, Grand Coulee and other dams will harm migratory fish such as salmon and steelhead trout, ask that fisheries surveys be conducted for five years, or for a period covering life cycles of any economically important fish, before starting construction of dams or any structure interfering with fish spawning runs.

A new research vessel of the U. S. Bureau of Fisheries will go down to the Atlantic Ocean early next year. It may allow prediction of future sea crops of cod, haddock, flounder and redfish.

The possibility of putting the Alaska fisheries industry on year-round basis is another U. S. project. Now canning equipment there is idle for large portion of the year.

Science News Letter, August 5, 1939

ENGINEERING

Super-Highways Across U. S. Impractical, Say Experts

NOT FOR many years, if ever, will America's highway map include super-transcontinental roadways that would make trips from New York to San Francisco a speedy, enjoyable trip through a virtual parkway. Dreams of such highways—to be financed by tolls for their use—have fallen before actual facts assembled by the U. S. Bureau of Public Roads.

Only a small portion of the present traffic on American highways could be attracted to these super-systems, states a report prepared by government experts on highways.

Transcontinental tourists would certainly like the roads, it is agreed, but how many such tourists do you think are travelling daily on an average basis? Take a guess.

Counts made on east-west highways at checking stations established from Canada to Mexico show that only 300

passenger vehicles crossed this north-south line daily in transcontinental travel.

The upkeep of super-highways would be based on tolls which have been estimated to be about one cent per vehicle mile for passenger cars and 3.5 cents a mile for trucks and busses.

However, on a cost basis, the Bureau of Public Roads finds that estimated tolls for the six super-roadways planned would come out to be about \$100,000,000 less each year than the estimated cost of maintaining them. The building cost for the total of 14,336 miles of super-highways would be nearly three billion dollars.

Only on one stretch of the proposed highways would conditions appear to be self-supporting. This is the 172-mile highway which would link Philadelphia, Pa., and New Haven, Conn., and tap a dense population area. By 1960 this section of super-highway might break even.

The great need of today's traffic problem, feel the Federal experts, are express highways that will cut directly into the centers of large cities. Traffic maps show that 90 per cent of all traffic on main highways near cities is bound for the heart of the city. Such vehicles cannot use by-pass routes even if they exist.

Science News Letter, August 5, 1939

MEDICINE

Specific Chemical Remedies Predicted For Most Diseases

SPECIFIC chemical remedies, such as sulfanilamide, will be available in the future for practically all of the common infectious or germ diseases, Dr. E. H. Northey, of the Calco Chemical Company, predicted at a special research conference of chemists at Gibson Island, Md.

Sulfanilamide itself and its derivatives, he said, have proved successful against a wide variety of diseases of bacterial origin, including blood poisoning, abscesses and sore throats where they are caused by streptococci; the venereal diseases, gonorrhoea and chancroid; meningitis; erysipelas; and, most important from the viewpoint of mortality, pneumonia.

Chemicals derived from sulfanilamide now under test show promise of value, Dr. Northey said, against tuberculosis and virus diseases, the latter being the group which includes infantile paralysis and influenza.

Sulfanilamide derivatives reported by chemists working to produce new and better chemical remedies of this sort now total 778, Dr. Northey reported.

Science News Letter, August 5, 1939

MEDICINE

New Purified Antitoxin For Diphtheria Developed

A NEW highly purified diphtheria antitoxin, developed in England, is reported in the *Journal of the American Medical Association*. (July 22)

Animal experiments indicate that this refined antitoxin is more rapidly and completely absorbed from subcutaneous tissues than is the American antitoxin.

The Wellcome Laboratories, England, have developed a method of large scale purification of diphtheria antitoxin based on a fractional enzymic action.

"The possibility that such enzyme purifications may be generally applicable to antisera demands prompt investigation," declares the *Journal*.

Science News Letter, August 5, 1939

FORESTRY

Forest Fire Situation Considered Very Serious

FROM the Fire Control Division of the U. S. Forest Service in Washington comes this bird's-eye picture of the nation's forest fires. Total number of fires in National Forests and land under forest service protection through July 20 was 6,405 while for the same period in 1938 the number was only 6,379 and the five-year average is 6,195.

Prolonged hot dry weather over the Rocky Mountain region has made this area the biggest 1939 danger spot. Fires in this region total 286 so far, while a year ago, in the same period, there were only 99 and the five year average is 146.

Key danger spot in all the country is Colorado where Roy Headley, chief of the fire control division of the U. S. Forest Service, is now making temporary headquarters. Typical of the situation was Denver's 61-year record temperature of 102 degrees coupled with only seven per cent. humidity.

An analysis of the 6,405 fires so far reported for 1939 shows that 70 per cent. of them are of man-made origin. The remainder are caused by lightning. The latter, however, cause most of the fire fighters' headaches for they occur many times in very inaccessible regions, whereas man-made fires commonly are started along trails and mountain roads where men and equipment can be hurriedly called to fight them. Toughest of this year's fires has been the "McVey" blaze in the Black Hills of South Dakota which started July 10 and swept 20,000 acres before being put under control.

Science News Letter, August 5, 1939