GENERAL SCIENCE

Science Clubs Abroad

Six hundred foreign science clubs affiliated with Science Clubs of America form the nucleus for international expansion of this movement.

➤ GROUPS of young people will be studying and working in science in many countries during the coming school year as a result of the impetus given to international science clubs by a conference held at UNESCO, the United Nations Educational, Scientific and Cultural Organization, in Paris.

Representatives from nine nations and reports from many other areas were received during a two-day meeting (July 15-16). Leaders of science youth organizations working in many lands and languages became acquainted and exchanged experiences.

The American experience developed through years of experience with Science Clubs of America and the Science Talent Search formed the basis of the projected extension of science club work to all nations. The 600 foreign clubs already affiliated with Science Clubs of America form a nucleus for the international expansion of the movement.

In France, representatives of the national departments of education and colonial affairs, the French national radio, a leading science journal, a youth center and other interested organizations are discussing a joint sponsorship of the organization of science clubs for youth.

Czechoslovakia is planning science clubs in every secondary school during the coming year.

Denmark is expanding its youth science organizations and so is Holland.

For Latin America, UNESCO is planning a traveling exhibit to demonstrate the methods and advantages of science organization by young people.

Interest in science clubs was also reported from Poland, Switzerland, England and other nations.

Delegates and observers at the science clubs conference were presented the science Clubs of America emblem by Watson Davis, director of Science Service, who was elected chairman of the conference.

Director General Jaime Torres Bodet of UNESCO opened the conference, telling the delegates:

"Yours is the rare privilege of disseminating, humanizing and advancing the cause of science. It enables you to help train men who will be, not mere scientists, but citizens with deeper insight into the possibilities and dangers of the world today. Whether they make a name for themselves through far-famed discoveries or merely perform a more humble yet necessary task, the members of your clubs will have this in common: They will together have fought against ignorance and prejudice, worked methodically with ever open minds, faithfully carried out their task, great or small, and with their deeper knowledge of the world about them, will better understand the bonds which unite mankind in a common destiny."

Dr. Pierre Auger, French physicist and cosmic ray authority, participated in the conference as the head of the natural sciences department of UNESCO.

Just as Science Service through Science Clubs of America supplies material and inspiration to between 12,000 and 15,000 science clubs in the USA each year, without charge, so an identical service without charge is being offered by Science Service to all science clubs, already organized or in the process of organization, in all countries.

An exhibition of science club work in various countries and a display of educational and industrial materials supplied to science clubs largely by American organizations was opened at UNESCO at the time of the conference.

Science News Letter, August 6, 1949

FORESTRY

Douglas Fir Bark Yields Waxes and Tannin

➤ WAXES for all sorts of waterproofing, and tannins for making leather, are available in large quantities in the little used bark of the Douglas fir stripped from the logs in the sawmills, a symposium on wood was told in Washington by Phimister B. Proctor of the Oregon Forest Products Laboratory. This symposium was sponsored by the National Research Council and the Office of Naval Research.

Taking part in the two-day symposium were many of the nation's experts on wood from industries, universities and the government. In spite of the development of new materials, such as plastics, wood is more important now than ever before. The scientists considered many questions relating to wood and its uses, particularly

SCIENCE CLUBS ORGANIZED INTERNATIONALLY — Dr. Jaime Torres Bodet, UNESCO director general, opens a UNESCO meeting in Paris to discuss an extension of the science club movement to all parts of the world. Left to right: B. Bendt-Nielson of Copenhagen, Denmark; Dr. Pierre Auger, head of UNESCO Natural Sciences Department; Dr. Torres Bodet; Borge Michelsen and Maurice Goldsmith, of UNESCO; and Jouko Haavisto of Helsinki, Finland.

in connection with military and industrial requirements.

Oregon alone produces annually nearly a million tons of bark in connection with lumbering operations, and most of it is Douglas fir. Only a small amount of it is used for other purposes than for fuel. One company was reported by Mr. Proctor to be using mechanical means to separate ground bark into cork particles, needle-like bast fibers, and a fine powder. These fractions, he said, are being sold for use as ground mulches, absorbents, fillers, plastic and resin extenders and carriers of insecticidal dusts.

In addition to waxes and tannins, Douglas fir bark yields dihydroquercitin and phlobaphene. The first is a new compound and is a coloring matter similar to quercitin. Its commercial possibilities are not yet known. Phlobaphenes, because of their phenolic nature, have possibilities for use as extenders for plastics and synthetic resins.

The total extractive content of Douglas fir is approximately 30% of the oven-dry weight of the bark. The proportions of the individual extractives are, however, found to vary with the age of the trees and the height of the bark above ground. In general, wax yields are highest from the bark at the bases of old trees. Tannins are most plentiful in the youngest bark at the tops of the youngest trees.

The extraction process is a simple one, involving no new principles and requiring no specialized equipment. A pilot plant at the Oregon Forest Products Laboratory consists of a batch extractor in which benzene is pumped through the shredded bark. From the liquid mixture obtained, the benzene and water are evaporated off, leaving the extractives.

Science News Letter, August 6, 1949

ENGINEERING

Rammed Soil for Building

➤ THE present high cost of building has aroused scientists to find new methods of construction with earth as a building material, and technical men at the Texas Engineering Station have issued a report of recent investigations relative to rammed-earth construction. It contains valuable suggestions about the types of soil satisfactory for this purpose, as well as techniques for their use.

There is nothing new in the idea of using earth as a construction material. Brick is baked earth. The adobe houses long used in the world are sun-baked brick. The so-called mud-stick homes of early American Indians were made of adobe material plastered on the inner and other sides of a stick framework to form a house. The outer houses of pioneer days on the prairie are examples of earth dwellings. The rammed-earth construction is merely another type of structure using earth for its sidewalls. In it, earth is tamped within temporary forms similar to those used in concrete construction.

At a time when construction costs are almost prohibitive to the middle and low income groups, rammed earth offers durable construction at minimum cost, the report states. For a building that costs less to heat, or cool, has very low insurance rates, requires little maintenance, is insect- and vermin-proof, lasts indefinitely, is soundproof, strong, and has architectural beauty, its use should not be overlooked.

Soils that are satisfactory for buildings can be found in nearly all parts of the world, or can be made up by mixing nearby soils. The investigations show that a suitable soil is one predominantly sand with sufficient silt and clay to serve as a binder or natural cementing agent. The most favorable mixtures are 70% to 80% sand and the rest silt and clay. All organic matter, such as grass roots, should be removed, and the larger stones as well.

With certain soils, it is advisable to add a special binder such as vinsol resin, portland cement, or a mixture of the two. In most cases of rammed-earth construction, however, it may be more efficient and economical to use no admixtures whatsoever, but to add a weather-resisting outer coating, according to Edsel J. Burkhart of the Station staff. Asphalt, paints, and portland cement stuccos were all tested, as well as special commercial products prepared for the purpose.

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BACTERIOLOGY

Penicillin in Cows' Milk Checks Cheese Formation

➤ PENICILLIN can make trouble for the manufacturers of certain types of cheese, Drs. H. Katznelson and E. G. Hood of the Canadian Department of Agriculture point out in the journal, SCIENCE (May 13). Cheddar cheese, for example, is produced by the bacterial fermentation of milk. When cows have been treated with penicillin to cure mastitis, a bacterial inflammation of their udders, enough of the drug may carry over into their milk to kill or inhibit the useful, cheese-forming bacteria.

Drs. Katznelson and Hood carried out a series of experiments in which penicillin was added directly to milk that had been inoculated with the cheese-making bacteria. Above a certain low concentration, the drug stopped the cheese-forming action.

It was possible, however, to offset the effect of the penicillin by adding also an appropriate quantity of penicillinase, which is an enzyme that destroys penicillin. The two Canadian scientists suggest that this precaution be taken by cheese producers when they are using milk from penicillin-treated cows.

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WILDLIFE

Blame Fox for Trying, Not for Succeeding

➤ FOXES eat few birds. It's not that a fox doesn't try; he simply can't catch many.

Exaggerated claims that foxes are responsible for the scarcity of game birds are hit by Dr. W. J. Hamilton, Jr., Cornell University zoologist.

"Few birds are taken," says Dr. Hamilton, "but this is not because the fox is not fond of them. They are not as easily caught."

The scientist has examined the stomachs of more than 1,000 specimens over the past 20 years. He found the fox's food during spring, summer, and early fall includes various fruits and berries and chokecherries, and for animal foods, woodchucks, cottontails, and especially field mice. Chipmunks and other small mammals are also included in the prey of the fox.

Winter food is primarily cottontail rabbits and field mice, with some frozen fruit included. A fox will often dig into the snow to get frozen apples.

"While fond of grouse and pheasant, the fox finds it easier to dine on chipmunk. Not only are the chippies more numerous, but they cannot take to the air as the game birds do when pursued."

Though the fox may destroy a few grouse, he actually is an asset to the grouse through his destruction of the more potentially dangerous chipmunk, which is a predator of grouse, Dr. Hamilton pointed out.

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PHYSIOLOGY

The Joint Is Cold, Knee Joint, That Is

➤ IT'S NOT "cold shoulder," but cold knee. Measurements made with a new electric thermometer of the knee joint temperatures of two men gave readings of 90.3 degrees Fahrenheit and 91.2 degrees. Normal body temperature is usually considered to be in the neighborhood of 98.6 degrees.

The temperature of the knee joint is taken by threading a tiny bit of a thermistor through the joint with a hypodermic needle. Dr. J. M. Benjamin, Jr., of the University of Pennsylvania's graduate school of medicine and Steven M. Horvath of the University's Moore School of Electrical Engineering made the experiments, which are reported in the journal, SCIENCE (June 10).

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