

PHYSICS

Joint European Laboratory

Many European countries have participated in discussions expected to lead to establishment of a joint laboratory for nuclear physics.

► WHILE INTERNATIONAL cooperation on atomic energy has not been achieved, a movement is under way to establish a laboratory for nuclear physics that would be a joint European effort.

For several years, a large research laboratory with a staff of 300 and a million dollar a year budget has been in the process of formation by UNESCO (United Nations Scientific and Cultural Organization).

Equipped with a powerful accelerator of particles, called a cosmotron, that would give energies comparable to cosmic rays, this new laboratory would be a regional institution serving European countries. Many nations in Europe cannot have research laboratories of their own and they are considering pooling some of their resources to provide a joint effort.

Belgium, France and Italy have already offered to help finance the proposed nuclear physics laboratory. In addition, Sweden, Belgium, Norway, Great Britain, the Netherlands and Switzerland have participated in the discussion to lay the foundation of the new organization.

The new European Nuclear Physics Laboratory would be devoted to non-secret and non-military investigations that will be of value to all the peoples of the world, especially those of Europe.

To establish the laboratory \$20,000,000 to \$25,000,000 would be needed, \$12,000,000

of which would be needed to build the giant accelerator of 6 billion electron volt energy, similar to the biggest one now under construction at Berkeley, Calif.

To support the European Nuclear Physics Laboratory, the participating nations would need to contribute about twice as much annually as they allot to UNESCO itself.

Those in Paris planning the new laboratory argue that the powerful particle accelerator is necessary for any program of investigation of the constitution of matter and fundamental research in chemistry, biology, medicine and the other sciences.

Research workers from different countries would work together using the same apparatus, helping each other with their problems and the bonds thus established would grow into a permanent collaboration between scientific institutions and industries of the participating countries. Specialists, of whom European countries are very short, would be trained. The construction and the activities of the new laboratory would stimulate industries in the participating countries.

The initiative for the inauguration of the new combined laboratory will need to come from the countries that will participate. UNESCO in Paris is acting as a stimulating organization and the laboratory when established would be an independent international organization.

Science News Letter, October 20, 1951

PHYSICS

700 Mile An Hour Winds

► WINDS MOVING at terrific speeds blow around the earth far above the highest mountains.

These winds in the upper atmosphere sometimes reach speeds of almost 700 miles an hour. They are believed to exist some 65 miles above sea level, Reynold Greenstone of the National Bureau of Standards told the joint meeting of the International Scientific Radio Union and the Institute of Radio Engineers at Cornell University in Ithaca.

Clouds shining faintly in the night sky and long-enduring meteor trails in the past have indicated the presence of these winds in the ionosphere. But rather than rely on visual observations, Mr. Greenstone used radar-like equipment to discover which direction they were going and how fast.

The winds blow with an average speed of around 150 miles an hour, the radio

fading method indicated. During November and December, however, the speeds are higher, averaging around 225 miles an hour.

The ionospheric winds probably encircle the whole world, Mr. Greenstone suggested. For the same local time in Cambridge, England, and Washington, D. C., the winds are often very much the same. When G. J. Phillips of Cavendish Laboratory, Cambridge, finds that the winds are changing direction, Mr. Greenstone discovered that within that same hour the winds likewise usually change here above the United States.

Throughout the year, the winds will blow in every possible direction. There are, however, definite seasonal and daily trends.

In the summer months as a rule the winds move toward the east during the daytime and toward the west at night. In the winter, the winds blow predominantly toward the west.

In the fall and in the spring, the direction of the winds rotates from north to east to south to west and back to north again. Two complete rotations are made each day during the equinoctial months.

At sunrise and sunset these winds high in the atmosphere usually change direction abruptly. In the small hours of the morning they frequently blow south or southwest.

This world-wide system of winds is believed to be caused by solar gravitational forces and solar heating. But they are magnified many times by resonance effects.

Science News Letter, October 20, 1951

GENERAL SCIENCE

Uncle Sam Tells How To Pick Baby Sitter

► NINTH EDITION of Uncle Sam's baby book, the best seller that has had a distribution of more than 28 million copies since 1914, is now ready for parents and prospective parents.

Called "Infant Care," this 145-page illustrated publication of the U. S. Children's Bureau gives information and advice based on the latest scientific findings. Besides details on baths, diapers and diets, there is a section on baby sitters and a reminder to be sure to have baby's birth registered.

Copies may be obtained from the Government Printing Office in Washington for 20 cents. (See p. 254.)

Science News Letter, October 20, 1951

NUTRITION

More Protein Found in Pasteurized Fresh Milk

► PASTEURIZED FRESH milk is still slightly higher in protein content than evaporated or dried skim milk, experiments at the University of California College of Agriculture in Berkeley have shown.

Over a 16-month period, pasteurized fresh, evaporated and dried skim milk were fed to rats by Dr. Bessie B. Cook of the department of home economics.

The rats fed fresh milk gained slightly more in weight and size than those fed the other two forms, she said. This indicated a slight superiority of the fresh milk protein over that found in the other two forms.

If carefully handled, however, evaporated and powdered milks are still an excellent source of protein, Dr. Cook pointed out.

The more heat applied to milk in processing the lower the protein quality. Too much heat in processing milk was also responsible for the brownish color and off flavor sometimes found. In baking foods containing any form of milk carefully controlled temperatures prevented lowering of protein quality.

Some heat must be applied to milk, however, to kill certain disease organisms and to prevent rapid spoilage, Dr. Cook said.

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