

GENERAL SCIENCE

Brussels Fair and Science

Emphasis of the first world's fair in almost two decades will be on science and its peaceful uses. The United States will display many of its latest scientific achievements.

By HOWARD SIMONS

► ON APRIL 17, 1958, the first World's Fair in nearly 20 years will open in Brussels, Belgium.

Its emphasis, reflecting both the times and the great changes that have taken place in the world since before World War II, will be on science. Specifically, the peaceful uses of man's inventions, developments, discoveries and improvements.

Dominating the fair grounds will be a giant, 360-foot structure called the Atomium. Shaped to resemble the arrangement of atoms in an elementary crystal of metal, the Atomium promises to symbolize the Brussels' Fair in much the same way the still familiar Trylon and Perisphere came to symbolize the last great World's Fair held in New York in 1939.

Atomium: Symbol of Faith

The atomic structure is made up of nine spheres, each 59 feet in diameter and each connected to the other by tubes 10 feet in diameter and housing escalators or traveling belts. Some of the spheres, sound-proofed and air-conditioned, will be used to display the peaceful uses of the atom.

The silvery spheres will reflect the sun, sky and clouds during the day. At night, playing lights will cause them to simulate the rotations of electrons around the nucleus of the atom.

The Fair's theme, as symbolized by the Atomium, has been set as "a declaration of faith in man's ability to mold the atomic age to the ultimate advantage of all nations and people."

Those responsible for the Brussels event have been very careful to weave this theme into every aspect of the Fair's design, construction and purpose, from the individual buildings of each group to the International Gardens, musical events, film festival and International Science Pavilion. They have insisted on stressing peace and lessening the display of national interests or having the Fair used as a propaganda area.

In all, 48 nations, seven international or supra-national organizations such as the Red Cross, the European Coal and Steel Community and the Vatican, and private industry will be represented on the 500 acres of Heysel Park, four miles from the heart of Brussels.

There will be big exhibits, like the two and one-half acre International Science Pavilion, and there will be small exhibits, like the American-made machine for answering historical questions in any one of 10 languages by dialing a phone-like device. In keeping with the international

flavor of the Fair, this same device will also employ as one of its languages Interlingua, an international language based on the words and grammar of the predominant European languages. Interlingua, a function of SCIENCE SERVICE, can be read without study or preparation by most visitors.

Science Museum

Sixteen nations are collaborating in the exhibits making up the International Science Pavilion whose guiding principle is that "at the level of pure science there are no confines; scientists speak the same language; they are objective and disinterested. Science belongs to man."

The Pavilion will be a museum created to show the progress which has been accomplished within the last 25 years. To do this, it has been divided into four divisions—the atom, the molecule, the crystal, the

living cell—representing physics, chemistry, solid state physics and biology.

Upon entering the Pavilion, a visitor will first see a 20-minute movie ranging in its scope from human biology to atomic physics. It may be heard in English, Spanish, French or Dutch as desired through the use of multilingual earphones. After the film, the visitor is free to wander about the exhibit divisions, to see the displays contributed by each of the 16 nations.

The United States' effort for the Pavilion has been arranged by a brilliant array of our top scientists, including several Nobel Prize winners. In the atom class, for example, we will show exhibits demonstrating solar energy, particle accelerators, anti-protons and anti-neutrons, as well as showing a swimming pool reactor. In the molecule class we will demonstrate the recombination of atoms, organo-metallics and antibiotics. In the crystal class will be shown energy levels of atoms in condensed matter, nucleation of snow crystals and solar batteries, together with transistors, to name a few. In the living cell class, U. S. exhibits will show cell nutrition, photosynthesis, genetics of simple organisms such as bac-



THE ATOMIUM—Dominating the Brussels World's Fair will be this 360-foot Atomium designed to represent the peaceful uses of the atom. The 59-foot spheres are inter-connected by escalators and some of them will house displays.

teria and yeasts, and cell-to-cell relations.

These exhibits, together with the others, have not been made particularly simple.

"The aim in view," Baron Moens de Fernig, commissioner-general of the Belgian Government, said, "is to compare rather than to popularize. While it is desirable that simple minds should be given a less complicated idea of the significance of various phenomena, it is essential that specialists, scientists and scholars who visit the 'International Science Pavilion' shall find there the means to enrich their knowledge . . ."

The Pavilion and the Atomium are not the only Fair areas that will have science exhibits, although it is at these two places that science will be featured exclusively. Each of the national and international buildings will touch upon scientific aspects in displaying their national life and culture.

The Fair will consist of four major areas for displays by participating nations and organizations: the Belgian section depicting Belgian national life; the Congo and Ruanda-Urundi Section presenting a panorama of life in Belgium's African possessions; the Foreign sections containing the national pavilions; and the international exhibitions devoted to science and the arts.

Rivalry at the Fair

It is rather unfortunate that the Brussels' World's Fair should take place in as war-jittery an atmosphere as did the New York World's Fair in 1939. Although its aims and ambitions are to lessen national rivalry, it is impossible to erase it completely. Both the U.S. and U.S.S.R. will be exhibiting at the Fair. It is inevitable, therefore, that the displays of the two will be compared by many. This is especially true in the light of the science rivalry generated by the launching of the sputniks.

It is particularly unfortunate for the U.S. scientific effort because the funds to support it were granted by the Congress in pre-sputnik days. This fact has had its consequences. The American scientific exhibits will be as good as they possibly can be with the funds granted.

As it now stands, a good share of our exhibits will be well-constructed wall charts. Many of the working models planned as exhibits had to be scrapped when the appropriations asked for by the National Science Foundation were turned down.

One criticism appearing as an editorial in *Science* points out that there are still some salvage possibilities. The science exhibits could be supplemented with a two-hour program of top-quality science motion pictures. The wall charts could be replaced by the originally planned operating models.

American industry has jumped into the picture to help the U. S. science effort, knowing that the Fair regulations "exclude any presentation having a purely national character or commercial or advertising aspect of any kind." Drug firms, for example, have designed, built and contributed the exhibit on antibiotics.

In this respect, the U. S. participation has a lead on the Russians, for it will be impossible for the Russians to boast the same—where there is no private industry to help.

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