

“Artificial Skies” for Science Museum

Astronomy

People in Philadelphia will soon have the opportunity of seeing stars of any place or time just as do the residents of Berlin, Vienna, Rome and a dozen other European cities. This is made possible with the Zeiss planetarium which has just been presented to the Franklin Institute by Samuel S. Fels, Philadelphia philanthropist. It will be installed in the first section of a great science museum which the Institute will erect as a memorial to Benjamin Franklin, with the aid of the Benjamin Franklin Memorial, Inc., made up of leaders in public life and affairs in Philadelphia. The site chosen was leased by the City of Philadelphia, and consists of a large city block on the Parkway, facing Logan Circle, adjacent to both the new Public Library and the Academy of Natural Sciences.

As the planetarium instrument is expected to be delivered during the coming winter, the south wing of the building, to be devoted to astronomy, will be erected immediately, and will probably be ready for visitors next spring, said Dr. Howard McClenahan, secretary of the Institute.

The preliminary plans for this section of the building call for the planetarium dome, about 65 feet in diameter, on the ground floor. In the space between it and the outer walls will be a series of rooms devoted to various astronomical exhibits, such as the spectra of the sun and stars. On the top floor will be an observatory with

both a reflecting and refracting telescope through which visitors can look at the heavenly objects. The rest of the top floor will also be devoted to astronomical exhibits. In the northeast corner of the building will be hung a Foucault pendulum. Visitors on the ground floor will be able to watch this change the direction of its swing as it oscillates back and forth, and so see a proof of the earth's rotation.

The planetarium, which will be the chief feature of the astronomical wing, is a glorified stereopticon, or magic lantern. One hundred and nineteen separate lenses project the images of all the naked-eye stars and planets, the sun and the moon on the inside of a white cloth-lined dome. It is equipped with motors that turn it to simulate the apparent daily motion of the heavenly bodies across the sky because of the earth's rotation. Other motors turn the instrument so that the slow conical swing of the earth's axis over a period of 26,000 years can be shown. These celestial motions, and those of the planets in their orbits, can be speeded up so that the changes that normally take place in hundreds or even thousands of years, are shown to the planetarium observer in a few minutes. The operator can also show the stars as they appear from the north pole, or from the southern hemisphere, where constellations appear that never rise above the horizon in northern countries. And when he

wishes, by pressing a button, he can turn on a set of auxiliary projectors, which show the names of the constellations in the sky in their proper places. So realistic is the planetarium that the visitor, when he has been in the dome for some minutes, and his eyes are adapted to the darkness, seems to be under an open night sky, but a sky far clearer than any visible from a large city.

The famous Carl Zeiss optical works of Jena, Germany, are the originators of the planetarium. The first one was made for the German Museum at Munich, which, with nine miles of aisles for exhibits, is the greatest science museum of the world. So popular did it prove that an improved model was made which was installed by a number of other German cities, including Berlin. Another was erected in Vienna, then one was installed in Rome. Still another is being completed in Moscow, and it has recently been announced that one has been ordered for Milan by a newspaper owner.

Two have been ordered for the United States. Besides the one ordered by Mr. Fels, one has been ordered for Chicago by Max Adler. A building to house this and an astronomical museum is being erected on an island in Lake Michigan, near the Field Museum, and will probably be completed next spring also.

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“Rheumatic” Weather Prophecies

Meteorology

The popular notion that people suffering from “rheumatism” are good weather prophets has received scientific confirmation in a study just reported to the American Medical Association by the investigators, Drs. Edwin B. Rentschler and Francis Vanzant of the Mayo Foundation, and Dr. Leonard G. Rowntree.

“We now feel certain that many of our patients with arthritis can, through an increase in the severity of their pain, sense the approach or presence of storms,” reported the scientists. They studied 367 patients suffering with arthritis, the scientific name for common “rheumatism”, for a period of a year. For more than 90 per cent. of the time the records showed a relation between the pres-

ence of storms and the increase of pain.

The investigators stated that, of course, it is hard to interpret and put a quantitative value on a subjective symptom like pain. So while the measurements of atmospheric pressure changes, humidity, temperature and the like could be accurately made, measurements of increase in pain were not necessarily so exact.

“For 72 per cent. of the time the patients appeared to suffer more pain as the barometric pressure fell, and with a rise they experienced relief. . . . For 21 per cent. of the time the curve of the pain went up when the barometric curve went down and vice versa,” stated the report. “Observations on humidity, temperature, and

atmospheric electricity were inconclusive, although it is possible that these agents working together have some effect.”

The study was undertaken not to prove that the “rheumatic” weather prophets are right, but to determine whether a relationship actually exists between arthritic pain and weather change. Just how the change acts to produce the pain is not yet known, although it may act by affecting the blood supply to the joints. Investigations with a pressure chamber would throw some light on this problem, and perhaps on the more general problem of the relation between weather changes and other ailments, the three physicians thought.

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