that the present order of things is transitory. As Eddington puts it, "the stars are in their first innings." If things go on as they are, in less than a hundred billion years the spiral nebulae will have receded out of sight, the radioactive atoms will have run down, all but the fainter stars will be going-out—and the universe will be thoroughly uninteresting.

Of course by that time—or perhaps later—the expansion of the universe may give place to a contraction, which continues till everything—including the radiation now in remote depths—has been crowded together again in small compass; and the universe may start afresh.

Whether this may be so or not we have no knowledge; but it is surprising to me how strong an aesthetic hold this conception has on many people. (I say deliberately aesthetic and not religious, for religion has never concerned itself much about the fate of material things.)

With this wide-spread desire to believe in some cyclical restoration of activity at however great intervals, I admit frankly that I am not in sympathy. I agree with Eddington, "I am an evolutionist, not a multiplicationist. It seems so tiresome to be doing the same things over and over again." But it is in other words that I would leave the expression of this attitude with you—Rupert Brooke's:

There are waters blown by changing winds to laughter
And lit by the rich skies, all day. And after
Frost, with a gesture, stays the waves that dance
And wandering loveliness. He leaves a white
Unbroken glory, a gathered radiance,
A width, a shining peace, under the night.

SCIENTIFIC EVENTS

THE NEW CHEMICAL LABORATORY BUILDING OF THE UNIVERSITY OF PENNSYLVANIA

PLANS to begin construction during the bicentennial year of the University of Pennsylvania of the first of three units of the new Chemical Laboratory Building have been announced.

Dr. Paul P. Cret, professor emeritus of design, architect and alumnus, has been authorized to draw complete specifications for the first unit and plans for the two additional units to be added as funds become available. For construction and endowment of the entire building the sum of $2,000,000 is required.

The present John Harrison Laboratory of the university was established by gifts from the late Provost Charles Custis Harrison and his brothers as a memorial to their grandfather, who founded in Philadelphia, in 1792, the first permanent chemical plant in this country. The laboratory was first occupied in the fall of 1894, the department of chemistry having previously been quartered in College Hall.

In 1894 the registration of students in the department of chemistry was 57. Now there are 450 students. This number represents an increase during the past seven years of more than a hundred per cent.

Including students enrolled in other schools or departments and not majoring in chemistry, there are now more than 3,000 in the courses in chemistry and chemical engineering.

The building is one of many advances made possible by the more than 15,000 alumni and friends who have given to the Bicentennial Fund the sum of more than $4,300,000. There will be presented to the university on September 20 a Bicentennial Honor Roll containing the names of all alumni, alumnae, students, friends, firms and corporations, foundations and other organizations contributing to the fund up to that time. It will be placed with other memorabilia of the times in a sealed packet, to be preserved unopened until the year 2040, which will be the three-hundredth anniversary of the university.

THE VIRGINIA JUNIOR ACADEMY OF SCIENCE

ACCORDING to Dr. E. C. L. Miller, secretary-treasurer of the Virginia Academy of Science, there are now fifty-three organized science clubs in the secondary schools of the state of Virginia, sponsored by teachers in the various schools. Some forty-five more are in the formation period. Steps have been taken to organize these clubs into a Junior Academy of Science. At a meeting on June 5 two committees were appointed for this purpose; the members of the first committee to function as officers of the Junior Academy for the rest of this year, the second committee to function as an advisory committee from the senior academy, with final organization plans to be made at the Richmond meeting of the academy next spring.

Members of these committees are:

VIRGINIA JUNIOR ACADEMY OF SCIENCE

H. J. Davis, *chairman*, Pocahontas.
W. W. Nofsinger, *vice-chairman*, Jefferson Senior High School, Roanoke.
Miss J. Frances Allen, *secretary*, Alfred Belle Apartments, Pulaski.
J. T. Christopher, George Washington High School, Danville.
C. G. Gibbs, Floyd High School, Floyd.
Miss E. Gillespie, Maury High School, Norfolk.
Wm. T. Hall, Clarksville High School, Clarksville.

H. S. Holmes, Petersburg High School, Petersburg.
Miss Martha Lipscomb, Thomas Jefferson High School, Richmond.
W. I. Nickels, Jr., Lane High School, Charlottesville.

VIRGINIA ACADEMY OF SCIENCE SPONSORING

Professor J. A. Rorer, *chairman,* director, Extension Division, University of Virginia.
Dr. George W. Jeffers, *vice-chairman,* State Teachers College, Farmville.
L. F. Addington, Wise.
L. C. Bird, president, Phipps and Bird, Inc., Richmond.
Francis S. Chase, *executive secretary,* Virginia Education Association, Richmond.
Dr. I. A. Updike, Randolph-Macon College, Ashland.

The junior academy will meet with the senior academy at the regular annual meeting, have a program of its own and present exhibits of the work done by members of the science clubs. It is hoped also to have exhibits at the Thanksgiving meeting of the Virginia Education Association in Richmond. The senior academy plans to foster and assist these science clubs in any way it can and to encourage the development of more clubs.

Members of the junior academy will eventually become members of the senior academy, and will gradually take their places as leaders in the scientific life of the state.

SUMMER WORK IN BOTANY OF THE UNIVERSITY OF MICHIGAN

THIS year, owing to international conditions, members of the faculty of the University of Michigan, according to the *Alumni Journal,* are confining their activities largely to work in the United States. The summer camps include the Biological Station, Douglas Lake; Camp Davis, Jackson Hole, Wyo., where work is being done in surveying, geology and botany; Camp Filibert Roth, the forestry station at Golden Lake, and the camp at Wilderness Park, near Mackinaw City, where a field course in geography is being offered.

Members of the department of botany are engaged in trips to areas from Alaska to Panama. Professor Harley H. Bartlett, department chairman, and Tobias Lasser have gone to the Chagres River, Panama, for malaria investigations; Professor D. V. Baxter will make a collecting trip to Alaska. Other collectors include Professor F. M. Pagan, who will collect in Mexico; Professor C. A. Arnold, in Colorado; Professor B. M. Davis, in Oregon; Dr. J. L. Baldwin, Jr., in the mountains of West Virginia, North Carolina, South Carolina and Georgia, and Dr. E. U. Clover, in the Havasupai Canyon, Ariz. Professor W. R. Taylor will be at the Woods Hole Marine Biological Laboratory. After spending the college year at the University of Puerto Rico, where he collected mosses and liverworts, Professor W. C. Steere will devote the summer to work at the Biological Station at Douglas Lake. Professor L. E. Wehmeyer will be at Camp Davis.

Members of the Forestry and Conservation School are doing experimental work at the Chase S. Osborn Preserve at Sugar Island and at "Ringwood," near St. Charles. Professors W. F. Ramsdell, L. J. Young and others are engaged in this study. In addition, Professors E. C. O'Roke and S. A. Graham are engaged in research at and near Camp Filibert Roth; Professor D. M. Matthews is carrying on research on the relation between logging costs and forest management on the Pacific coast and in the "Inland Empire" —Idaho, Washington and Montana; Professor S. W. Allen is leading two expeditions for the American Forestry Association in the Rocky Mountain region, and Professor D. V. Baxter is conducting a study and collection of fungi in Alaska.

From the University Herbarium, Dr. E. B. Mains is studying the fungi of the Colorado mountains; Dr. and Mrs. C. L. Lundell, the flora of Texas, and Dr. A. H. Smith, Michigan fungi.

THE BROWN UNIVERSITY ECLIPSE EXPEDITION

AN attempt to prove definitely that the zodiacal light of the sun can be photographed during a total eclipse will be made by an expedition to South America headed by Professor Charles H. Smiley, chairman of the department of astronomy of Brown University, to observe the eclipse of October 1.

The expedition, which is sponsored also by "the Skyscrapers," an amateur astronomical society of Providence, R. I., will set up high-speed cameras near the village of Quixeramobim, Brazil, at the eastern shoulder of South America about 100 miles northwest of Pernambuco. At this point the total eclipse will occur at 10 A.M., and will last for nearly five minutes.

Accompanying Professor Smiley will be Mrs. Smiley and Arthur A. Hoag, of Barrington, R. I., a junior at the university. Dr. Alice Farnsworth, head of the department of astronomy at Mount Holyoke College, may join the group in South America. Good weather is anticipated, since it seldom rains or is even cloudy in Quixeramobim in October.

Although only three other astronomers have reported seeing the zodiacal light during an eclipse of the sun, Professor Smiley photographed what he describes as "similar phenomena" during the total eclipse of June 8, 1937, when he took pictures from a vantage point high up in the Peruvian Andes. These showed a double wedge-shaped light area fanning out from above and below the sun, and extending at least 25 times the diameter of the sun into space. It was cen-