the factors of evolution as biologists were a generation ago—a few biologists may still be—I am quite certain that even a moderately full knowledge of them is still far beyond. Even were the only outstanding difficulty the existence of non-adaptive qualities in organisms we should be still far from finality; but this I regard as the heaviest task before us. The alternative of this task, which has sometimes been proposed, namely, a denial that any evolution is non-adaptive, is not to be considered until every other possibility has been thoroughly explored. For most of us a time which is ripe for such denial will never come, for the necessary explorations of other leads can not possibly be made in many times ten years.

SCIENTIFIC EVENTS

THE TWENTY-FIFTH ANNIVERSARY OF THE BROOKLYN BOTANIC GARDEN

INVITATIONS and announcements have been issued for the celebration of the twenty-fifth anniversary of the Brooklyn Botanic Garden from Monday to Thursday, May 13 to 16. The programs fall under four headings—civic, social, scientific and educational.

On Monday evening the president of the board of trustees, Edward C. Blum, will preside. The speakers include the president of the borough of Brooklyn, the Honorable Raymond V. Ingersoll; the commissioner of parks, the Honorable Robert Moses; the president of the board of education, the Honorable George J. Ryan, and the chairman of the Botanic Garden governing committee, Miss Hilda Loines. The principal address will be given by Dr. Albert F. Woods, director of the Graduate School, U. S. Department of Agriculture. The program will be followed by a reception and inspection of exhibits illustrating the progress of development of the Botanic Garden since 1910. A feature of this exhibit of special scientific interest will be a selection of some of the incunabula and other rare books and manuscripts in the Botanic Garden lbrary.

On Tuesday afternoon the twenty-first annual spring inspection of the garden, with the Honorable Fiorello H. La Guardia, mayor of New York, as guest of honor, will be held. This will be in charge of the woman's auxiliary of the garden.

The scientific programs deal with the progress of various aspects of botanical science during the past twenty-five years, as follows:

Wednesday Morning: Presiding, Professor R. A. Harper, Columbia University.

(1) "Virus Diseases of Plants: Twenty-five Years of Progress, 1910–1935." Dr. L. O. Kunkel, Rockefeller Institute.

(2) "Twenty-five Years of Cytology, 1910–1935." Professor Charles E. Allen, University of Wisconsin.

(3) "Twenty-five Years of Genetics, 1910–1935." Dr. Albert F. Blakeslee, Carnegie Institution of Washington.

Wednesday Afternoon: Presiding, Professor Edmund W. Sinnott, Barnard College.

(1) "Twenty-five Years of Plant Physiology, 1910–1935." Professor Rodney H. True, University of Pennsylvania.

(2) "Light on Vegetation, 1910–1935." Dr. John M. Arthur, Boyce Thompson Institute for Plant Research.

(3) "Twenty-five Years of Ecology, 1910–1935." Dr. H. A. Gleason, New York Botanical Garden.

(4) "Twenty-five Years of Forestry, 1910–1935." Dean Samuel N. Spring, New York State College of Forestry, Syracuse University.

Wednesday Evening: Presiding, Dr. William Crocker, Boyce Thompson Institute for Plant Research.

(1) "Twenty-five Years of Plant Pathology, 1910–1935." Professor L. R. Jones, University of Wisconsin.

(2) "Twenty-five Years of Systematic Botany, 1910–1935." Dr. Elmer D. Merrill, New York Botanical Garden.

(3) "Twenty-five Years of Paleobotany, 1910–1935." Dr. G. R. Wieland, Carnegie Institution of Washington.

(4) Motion picture (silent)—"The Life Cycle of a Fern." Harvard film. Premier showing.

Thursday morning will be devoted to a horticultural program, with John C. Wister, director of the Arthur Hoyt Scott Horticultural Foundation, Philadelphia, presiding. The papers are as follows:

(1) "Twenty-five Years of Horticultural Progress, with Special Reference to Foreign Plant Introduction, 1910–1935." Dr. W. E. Whitehouse, U. S. Department of Agriculture.

(2) "Opportunities for Women in Horticulture, 1910–1935." Dr. Kate Barratt, the Swanley (England) Horticultural College.

(3) "Growing Plants in Sand with the Aid of Nutrient Solutions: With Special Reference to Practical Applications." Professor C. H. Connors, Rutgers University.

(4) "Modern Methods of Plant Propagation." Dr. P. W. Zimmerman, Boyce Thompson Institute for Plant Research.

(5) "Plant Patents." Colonel Robert Starr Allyn, deputy commissioner of sanitation, New York City.

(6) Motion picture—"Naturalized Plant Immigrants." U. S. Department of Agriculture, Bureau of Plant Industry.

The Thursday afternoon program will be given to

botanical education, including elementary education. The papers are as follows:

Presiding: Dr. John S. Roberts, associate superintendent of schools, New York City.

(1) "Botanical Education for Young People." Dr. D. W. O'Brien, the School Committee of the City of Boston.

(2) "Twenty-five Years of Botanical Education, 1910–1935." Professor Otis W. Caldwell, Columbia University.

(3) Motion picture—"How Seeds Germinate." U. S. Department of Agriculture, Bureau of Plant Industry.

The first program on Thursday evening will be devoted to adult education in botany and the newer techniques of education developed since the Botanic Garden was established.

Presiding: Julius M. Johnson, president, the New York Association of Biology Teachers.

(1) "Adult Education in Botany." Dr. Loren C. Petry, Cornell University.

(2) "Radio in Botanical Education." Morse Salisbury, U. S. Department of Agriculture.

(3) Motion pictures—"Their Part in American Education." Dr. Clarence E. Partch, Rutgers University.

(4) Demonstration of silent "movies" and "talkies": (a) "Time-Lapse Studies in Plant Growth"—1 reel, U. S. Department of Agriculture film; (b) "Plant Life" (a sound film)—1 reel, Harvard film service.

There will be an invitation buffet luncheon on both Wednesday and Thursday, a tea on Thursday afternoon in charge of the Junior League of Brooklyn and informal receptions with inspection of the exhibits on both Wednesday and Thursday evenings. The hostess on Thursday evening will be the Garden Teachers Association of the Botanic Garden. Members of the Boys and Girls Club of the Botanic Garden will also assist throughout the week.

On all days there will be opportunity to inspect the plantations and collections under guidance. All persons interested in botanical science and education are invited to attend the Wednesday and Thursday programs.

EXPEDITIONS OF THE SMITHSONIAN INSTITUTION

THE results of twenty expeditions sent out last year by the Smithsonian Institution are described in a report recently issued. Collections of biological, geological and anthropological specimens for the U. S. National Museum were made in China, Siam, Mexico, South America and the Galapagos Islands, as well as in the United States and its territories.

Dr. Charles G. Abbot, secretary of the institution, and L. B. Aldrich, of the Astrophysical Observatory, conducted an expedition of two and a half months' duration to Mount Wilson, Calif., where extensive astrophysical work was conducted. Throughout the year daily observations of solar radiation were made at the stations at Table Mountain, Calif., Mount Montezuma, Chile, and Mount St. Katherine in the Sinai Peninsula.

The Rev. David C. Graham, in the high mountain regions of the Szechwan Province of China, made natural history collections, obtaining such rare animals as the golden-haired monkey, the giant panda, the blue sheep, the horse-tailed deer and the Chinese red wolf. Dr. Hugh M. Smith, associate of the institution, formerly fisheries adviser to the Siamese Government, penetrated the wild country at the head of the Pasak River. He made there collections of rare birds and several new species of fishes. Dr. W. F. Foshag hunted rare minerals in the Sierra Madre Mountains of Chihuahua, Mexico, and in other Mexican mining districts. Dr. C. Lewis Gazin sought the bones of extinct animals in the Snake River basin of Idaho and in one place obtained the skulls of about sixty-five ancient horses. Studies of ancient fauna in southwestern Ontario and in Michigan were carried on by Dr. G. A. Cooper, assistant curator of paleontology, who was associated with Dr. A. S. Warthin, of Vassar College. Their researches enabled them to construct a partial, tentative picture of the country during the Devonian period.

Dr. Waldo L. Schmitt, curator of marine invertebrates, represented the institution on the Galapagos Island expedition of Captain G. Allan Hancock. An exceptionally rich natural history collection was obtained, including ten species of poisonous sea snakes. A study of the butterflies of Virginia was undertaken by Austin H. Clark, curator of echinoderms. About 8,000 specimens of grass, including some rare species, were obtained by Jason R. Swallen in the mountains of Brazil. C. W. Bishop, assistant curator of the Freer Gallery of Art, carried out an archeological reconnaissance in China over an area approximately 500 miles in length by nearly 200 in breadth. Dr. Aleš Hrdlička, curator of physical anthropology, continued his excavations on Kodiak Island, Alaska, where he found evidence of a great prehistoric massacre.

Archeological projects were conducted in the valley of the lower Columbia River by Herbert W. Krieger, curator of ethnology; in Florida by CWA workers under the direction of Matthew W. Stirling, chief of the Bureau of American Ethnology; on the Shiloh battlefield by Frank H. H. Roberts, Jr., and in California by William D. Strong and Winslow M. Walker. Dr. John R. Swanton reports progress in tracing the