were a commercial undertaking it would be in a position to declare a good dividend, although it has to pay many thousands of pounds in rent, rates and taxes. But it is debarred by tradition and by its charter from distributing "profits" and devotes any surplus to improvements in the gardens and the collection and to further scientific work.

The report states that out of the surplus from 1924, after discharging the remaining capital expenditure on the aquarium, a scheme of improvements which will occupy several years has been begun. The first stage was the construction of a large out-door enclosure for hardy monkeys, consisting of rockwork with caves, separated from the public by a deep ditch, on the principle adopted in the Mappin Terraces. Adjoining this there is a small experimental house, in which more delicate monkeys will be given constant access to fresh air, radiant heat and ultra-violet rays from quartz electric globes. It is expected that these installations, which are placed on the ground to the west of the Mappin Terraces, will be complete and in occupation before Whitsuntide.

The next stage is the construction of a new reptile house on the site now occupied by the old ape house and the summer aviaries. This building must be elaborate and costly, but it is hoped that when completed it will be as beautiful and efficient as the aquarium and much in advance of any arrangements for housing reptiles that have yet been constructed. When the reptile house has been completed the present reptile house will be completely transformed to make it suitable for small birds, and extensive open-air aviaries will be attached to it. The final stage of the present scheme will be the construction of a large new monkey house on the site of the present monkey house and small birds' house. It will provide for all the apes and monkeys in the collection, except those sufficiently hardy to live on the monkey hill. In designing it the devices found successful in the experimental house will be adopted.

The report contains a list of the chief kinds of food and the quantities used in feeding the animals. In 1924 the walrus alone consumed 4 tons 15 cwt. of cod. The carnivores used 440 horses, weighing approximately 220 tons. Over 35 tons of herrings and whiting, 1,590 pints of shrimps, 343 gallons of fresh milk and over 14,000 tins of condensed milk, 128 lbs. of honey, 258 lbs. of ants' "eggs," 77 lbs. of mealworms, 150 bunches of onions, 108 heads of celery, 1 ton 17 cwt. of grapes and 213,085 bananas are items which show the variety of the feeding substances required. The total cost of food for the year was £11,637, fuel cost £2,014 and water £1,291.

RIVER SURVEY OF THE UNITED STATES

IT is stated in the *Electrical World* that to comply with the provisions of the new river and harbor act the corps of engineers and the Federal Trade Commission are gathering data as to the cost of a comprehensive survey of the rivers of the country and information which is expected to establish the need for such a study.

There was reason to believe the survey itself would be authorized in this act, but differences of opinion among those most interested in obtaining the legislation prevented that action. The law does provide, however, for a report setting forth the needs for and the expense of such a study. It is known definitely that a very strong report favoring these surveys can be written. While the need has been apparent for a generation, no exhaustive argument supporting such an endeavor ever has been prepared.

General Harry Taylor, chief of engineers, states that his first step in carrying out the mandate of congress will be to call for a report from each of his district officers which will cover the needs of that particular section. This preliminary report will set forth the data obtainable in the files of each office. When these reports have been examined such additional information as may be needed then will be called for.

The Federal Power Commission will confine its work to material which will bring out clearly the need for a nation-wide survey of rivers and streams. Because of lack of engineering data the Power Commission now is compelled to give rights for fifty years without knowing whether or not the proposed power development will fit into the maximum utilization of the stream's resources or the best plan to aid flood control and navigation.

It is not the object of these proposed surveys to go into such detail or to make so careful an economic study as now is in progress on the Tennessee River. That survey alone will cost in excess of $500,000. The idea now proposed is to get an accurate picture of the whole river, the detail to be worked out later as actual development is undertaken.

Congress already has specified its intention to use license fees and rental receipts for these studies. A simple enabling paragraph is all that is needed to make available $250,000 annually for this work. The report which now is being prepared is expected to be so convincing that little further delay will result in securing the necessary legislation.

A COURT OF CHEMICAL ACHIEVEMENT

ACCORDING to an article in *Engineering Chemistry*, chemical products, equipment and processes, in fact, all new developments of American chemistry of the

past few years, will each receive unusual recognition at the Tenth Exposition of Chemical Industries to be held this year during the week of September 28 to October 3 at the Grand Central Palace, New York. Plans for the new "Court of Chemical Achievement," inaugurated at the recent meeting of the Advisory Committee of the Exposition, are rapidly taking shape. Outstanding achievements of American chemistry, whether in the research or industrial field, which have been completed during recent years, will be admitted to the court after they have passed a committee of approval of the American Chemical Society.

The new "Court of Achievement," which bids fair to be the outstanding feature of the Chemical Exposition this year, will be in the form of small unit exhibits together in one large specially arranged group. Among the new products which have been suggested for display are twenty-seven recent developments. This list will probably be increased several times by other new chemical products, instruments and explanation of new processes.

All exhibits will be passed upon and admission to the Court of Achievement will be granted by a committee of the American Chemical Society known as the committee of approval which is composed of Marston T. Bogert, chairman, C. M. Stine, E. R. Weidlein, F. W. Willard and John Johnston. A subcommittee of the Chemical Exposition Advisory Committee, composed of H. E. Howe, chairman, F. J. Metzger and T. B. Wagner, will act in an advisory capacity to the exposition management in the general conduct of the new project.

Entries for new products and processes for the Court of Achievement must be sent to Court of Achievement, Room 1102, Grand Central Palace, New York, prior to May 1, after which time applications will not be considered. A nominal fee will be charged for all exhibits in the court except those of institutions of learning and government bureaus or departments which will be accepted without charge if they pass the judges. A brochure will be printed and distributed from the Court of Achievement at the exposition. Full information can be secured by inquiring at the address indicated above.

THE NATIONAL ACADEMY OF SCIENCES

AT the spring meeting of the National Academy of Sciences held in Washington on April 28, the following members were elected:

Section of Mathematics:
Solomon Lefschetz, University of Kansas.
Section of Physics:
Frederick Albert Saunders, Harvard University.
William David Coolidge, Schenectady, New York.
Section of Engineering:
Ralph Modjeski, Chicago.
Elmer Ambrose Sperry, Manhattan Bridge Plaza, Brooklyn, New York.
Section of Chemistry:
Charles August Kraus, Clark University.
Section of Geology and Paleontology:
Reginald Aldworth Daly, Harvard University.
Section of Botany:
Edward Murray East, Harvard University.
Section of Physiology and Pathology:
Florence Rena Sabin, The Johns Hopkins Medical School.
Harry Gideon Wells, University of Chicago.
Section of Anthropology and Psychology:
Walter Bowers Pillsbury, University of Michigan.
Foreign members were elected, as follows:
Sir Charles Parsons, the British engineer.
Professor Arthur Stanley Eddington, Plumian professor of astronomy in the University of Cambridge.
Dr. Adolph Engler, professor of botany in the University of Berlin.
Dr. Niels Bohr, professor of physics in the University of Copenhagen.
Mr. Charles P. E. Schneider, the French engineer.
Dr. Hans Speman, professor of zoology, University of Freiburg, i. Br.

SCIENTIFIC NOTES AND NEWS

DR. CHARLES D. WALCOTT, secretary of the Smithsonian Institution, was elected president of the American Philosophical Society at the general meeting of the society held in Philadelphia from April 23 to 25.

AS a memorial to Dr. Charles P. Steinmetz, chief consulting engineer of the General Electric Company, the Schenectady Section of the American Institute of Electrical Engineers has initiated a series of annual lectures, to be known as the Steinmetz Lectures. The first will be given on May 8 by Professor M. I. Pupin, of Columbia University, president of the American Association for the Advancement of Science. His subject will be "Law, description and hypothesis in the electrical science."

THE seventieth birthday of Dean M. E. Cooley, of the University of Michigan, was recently celebrated at a general engineering assembly. A large silver loving cup was presented to him by the engineering and architectural students. Upon this cup was engraved the inscription, "An expression of the appreciation and affection of the students of the colleges of engineering and architecture for their dean, Mortimer Elwyn Cooley, March 28, 1925." L. W. Wallace, secretary of the American Engineering Council, of Washington, D. C., gave a eulogy of Dean Cooley and Acting President Alfred H. Lloyd congratulated him on behalf of the faculty and students.