cause of the wide range in the size of the fish, 10¾ to 54 inches, this material will prove of unusual value.

THE British government has decided to proceed at once with certain preliminary investigations in order to ascertain the feasibility of the scheme for using the tidal power of the River Severn for the production of electrical energy by the erection of a barrage across the river. The work has been entrusted to the Department of Scientific and Industrial Research, and the president has appointed a committee, constituted as follows, to control the operations: Mr. G. S. Albright, *chairman*; Professor A. H. Gibson, Mr. G. W. Lamplugh, Mr. Maurice Wilson and Dr. J. S. Flett, director of the Geological Survey and Museum. The feasibility of the Severn scheme depends upon the possibility of finding satisfactory foundations for a barrage. Accordingly the first stage of the investigation will involve: (*a*) The study by the Geological Survey of the stratigraphical formations in the neighborhood of the sites suggested for the erection of the barrage; (*b*) preliminary soundings with a view to determining the contour of the river bed at the sites; and (*c*) preliminary measurements of the flow of water at different states of the tide. The cost of the investigations is estimated at £95,000. Sir Maurice Fitzmaurice and Sir John Purser Griffith have been invited to submit a joint report before the end of this year as to the possibility of constructing a barrage on one or more of the sites suggested on the assumption that safe foundations exist. The data which will be provided as a result of the geological and hydrographical investigations will be placed at their disposal. The staff of the Geological Survey has already begun the inquiry.

THE complete investigation of personal health records extending back through several generations and covering a whole nation has been undertaken by the Swedish Institute of Racial Biology, which, according to the *Medical Journal and Record,* has turned in the report of the second year of its work. Under Professor H. Lundberg, who organized the institute, anthropological statistics have now been gathered concerning 83,427 persons. Stature, head measurements, colors of eyes and hair, diseases, especially hereditary diseases, causes of death, etc., are among the things observed by the investigators. In the northern provinces of Sweden, where Lapps, Finns and Swedes have intermarried, the death rate is relatively high. Special genealogical studies have, therefore, been undertaken in this region in order to ascertain, if possible, what effect race mixture has on longevity. In three villages, for example, genealogical histories have been drawn up for the entire population covering a period of 125 years. In another community the histories of 1,200 families have been traced during the period of 1781–1851. The accumulation of data regarding hereditary disease, the development of criminal instincts and other traits is only a part of the program of the Swedish Institute of Racial Biology. It is also conducting research work into the elimination of racial taints through eugenic measures. Research is also being directed into the field of eugenics and the development of individual talent and genius.

ONE of the largest research organizations ever developed for the study of synthetic resins will be housed in the new laboratory of the Bakelite Corporation now nearing completion at Bloomfield, N. J. The building is two stories high and approximately 50 feet by 110 feet in size. Present plans are for accommodations to take care of twenty-five research workers. Major problems of raw material production, improvement and modification of synthetic resin compounds and of general commercial development will be handled.

UNIVERSITY AND EDUCATIONAL NOTES

JOHN D. ROCKEFELLER, JR., has donated the sum of $1,600,000 to the Imperial University of Tokio, Japan, to restore the library which was destroyed in the earthquake and fire of 1923.

COLGATE UNIVERSITY has received a gift of $400,000 from Austen Colgate, of Orange, N. J., which brings its alumni fund to $945,000.

DARTMOUTH COLLEGE has received from George F. Baker, of New York, a gift of $100,000 for the establishment of a special endowment fund in memory of his uncle.

THE will of Mary P. C. Nash, widow of Bennett Hubbard Nash, for many years professor of modern languages at Harvard University, leaves her residence and $30,000 to the university to establish three trusts.

ROSCOE POUND, dean of the Harvard Law School, has been elected president of the University of Wisconsin, in the place of President E. A. Birge, who will retire at the end of the present academic year.

PROFESSOR CHARLES A. HOLDEN has resigned as director of the Thayer School of Civil Engineering at Dartmouth College, to take effect at the close of the present academic year.

DR. LAWRENCE LA FORGE, of the United States Geological Survey, has been chosen to conduct two courses in geology at Harvard University, during the second half year, owing to the absence of Professor J. B. Woodworth.

DR. CHARLES PHILLIPS, formerly professor of

pathology at Wake Forest College School of Medicine, has been appointed professor of pathology at the Medical College of Virginia, Richmond.

DR. ALBERT BACHEM has been appointed professor of radiology and director of the laboratory at the University of Illinois College of Medicine, Chicago.

DR. HOMER G. BISHOP, instructor in psychology at Cornell University, has been appointed assistant professor of psychology at Smith College.

PROFESSOR HANS SPEMANN, of the University of Freiberg, has been called to the chair of zoology at the University of Berlin, to take the place of Professor Heider, who has been made professor emeritus.

DISCUSSION AND CORRESPONDENCE

A NOTE ON THE SURFACE VISCOSITY OF COLLOIDAL SOLUTIONS[1]

THE excellent paper by R. E. Wilson and E. D. Ries on "Surface films and plastic solids" (Colloid Symposium Monographs, 1923) encourages me to publish the results of preliminary experiments made in 1922, before I had heard of Messrs. Wilson's and Ries's work, which are in complete accordance with their results.

The method I used differed from theirs. They employed a torsion pendulum, the polar moment of inertia of which was equal to 485 gr cm^2, and a circular glass plate, 3.8 cm in diameter, in contact with the liquid. I used a slightly more elaborate but, I believe, more sensitive instrument. A small glass rod, 0.4 mm in diameter and 10 mm long, was suspended to a galvanometer wire (Leeds and Northrup rolled phosphor bronze, 0.000125 cm thick = 0.002 inch); a mirror permitted the readings on a scale, and a light damping device provided a steady spot. The instrument itself was the micro-viscometer described previously.[2] Instead of having the liquid rotated continuously by means of the constant speed motor, it was only rotated by one twelfth of one revolution (30 degrees), or even one thirty-sixth of one revolution (10 degrees), in one minute exactly. The shearing stress was thus very small, and could be decreased at will. The first measurement was made as soon as the solution was poured into the rotating vessel. The other measurements were made with the same solution after a certain number of minutes had elapsed. Hence, the slow building up of the adsorbed layer could be followed. Unfortunately, I had no time to continue this work, and made only a few experiments, one of which follows:

[1] From the laboratories of The Rockefeller Institute for Medical Research.

[2] du Noüy, P. L., *J. Gen. Physiol.*, 1919, i, 521.

VARIATIONS IN FUNCTION OF THE TIME OF THE SURFACE VISCOSITY OF A SERUM SOLUTION AT 1/10,000
TEMPERATURE = 22° C.

Time in minutes.	0	7	10	15	30	50	90
Readings (proportional to the viscosity).	0	27	40	55	104	170	284

When plotted on paper, the curve shows a very slight upward convexity. After 1½ hours, the surface rigidity is considerable, despite the fact that the thickness of the adsorbed layer is only 41 x 10^{-8} cm, as I have shown in a preceding paper,[2] and that this is probably the mean value of the length of the individual protein molecules present in a serum solution.

P. LECOMTE DU NOÜY
THE ROCKEFELLER INSTITUTE
FOR MEDICAL RESEARCH

NUMBER OF UNITED STATES SCIENTISTS WHEN THE SIGMA XI SOCIETY WAS FOUNDED

THE question has arisen as to what need there was in 1886, when the Sigma Xi Society was founded, for this organization of "companions in zealous research." Was the United States not contributing at that time its full share to the advancement of science?

To find an approximate answer to this question, a brief analytical study was undertaken, based upon the third volume of Poggendorff's Handwörterbuch, which gives the names of research men and the titles of their papers in the exact sciences throughout the world for the 25 years from 1858 to 1883. This is the period immediately preceding the founding of the Sigma Xi. I classified the scientists listed in Poggendorff by countries. As the volume covers over 1,400 pages, I took only part of the volume, namely, the first 15 pages of every 100 pages, and then multiplied the figures thus obtained by 6⅔.

On the basis of the data thus secured, the distribution of scientists over the ten leading countries, for the period 1858 to 1883, was as follows: Austria-Hungary 560, England 633, France 707, Germany, 1,927, Holland 207, Italy 280, Russia 340, Sweden 193, Switzerland 220, the United States 447. In this list Germany stands first with 1,927, and the United States fifth with 447 scientists.

But this mode of comparison is not quite fair; the populations of the various countries should receive consideration. Accordingly, we computed the number of scientists (for the period 1858–1883) for every million of population based on statistics of 1870. Per million of population, Austria-Hungary had 15¾ scientists, England 20, France 19½, Germany 47, Hol-

[3] du Noüy, P. L., *J. Exp. Med.*, 1924, xl, 133.