professor of botany at Yale University was recently announced, made an address entitled "Science and our Modern Dilemma" on March 30, before the annual banquet of the Yale chapter of Sigma Xi. Dr. Sinnott will join the faculty of Yale University in the autumn at the opening of the college year.

DR. HERBERT M. EVANS, professor of biology and director of the Institute of Experimental Biology of the University of California, gave two lectures on April 1 under the auspices of the Research Council of the Graduate College on "The Relation of Vitamin E to the Neuromuscular System" and "The Historical Evolution of our Knowledge of the Anterior Pituitary."

DR. JOHN F. FULTON, Sterling professor of physiology at Yale University, was one of the lecturers last month in the annual national Sigma Xi series on "Science in Progress." He lectured on "Experimental Studies on the Functions of the Frontal Lobes in Monkeys, Chimpanzees and Man" at the University of Vermont, the University of Kansas, Stanford University, the University of Washington, the State College of Washington, the Mayo Foundation, Beloit College, the University of Illinois, the University of Illinois College of Medicine, Northwestern University and Swarthmore College.

DR. PETER DEBYE, director of the Physical Institute of the Kaiser Wilhelm Institute, Berlin, on April 1 addressed the North Jersey Section of the American Chemical Society. He spoke on "Molecular Structure Determined by Interference Methods." Dr. Debye is the George F. Baker lecturer at Cornell University during the present semester.

A DECISION was handed down on March 30 by Supreme Court Justice John E. McGeehan revoking the appointment of Bertrand Russell as professor of philosophy at the College of the City of New York. Justice McGeehan sustained the contention of a taxpayer that Professor Russell was not fit for the position because of his attitude toward sex, and was not legally qualified because he is not a citizen of this country. Earl Russell was appointed originally by a unanimous vote of the Board of Higher Education. After the appointment had been attacked by Bishop William T. Manning and others the board refused on March 19 by a vote of 11 to 7 to reconsider the appointment, which is for the term beginning February, 1941, and ending June, 1942. Earl Russell is now lecturing at the University of California at Los Angeles, and will lecture at Harvard University in the autumn.

THE office of the Royal Society was moved from Cambridge to the society's headquarters in Burlington House, London, on March 18. The library is to be reopened.

DISCUSSION

LABORATORY CHIMPANZEES[1]

QUARTERS have recently been completed at Yale Laboratories of Primate Biology, Orange Park, Florida, for an experimental nursery. Infants separated from their mothers at birth are to be reared under controlled conditions and used as subjects of a special program of research, of which Dr. Henry W. Nissen, assistant director, will be in charge. The Samuel S. Fels Fund has agreed to associate itself with the Laboratories in the support of this undertaking. Initially attention will be concentrated on the comparative study of problems of behavioral development and adjustment, growth and maturation. To date (March, 1940) 34 infants have been born in the laboratory colony, which now contains 27 individuals of known birth-date and recorded life history. The ape population on March 10, 1940, numbered 47,[2] with an age range from 4 days to 27 years. Several of these chimpanzees have been in use in the Laboratories for from 8 to 14 years. The normal life span of this great ape when in captivity has not been determined, but it is indicated that the reproductive life may exceed 30 years, and it would seem probable that under favorable nutritional, hygienic and social conditions the individual may live for 50 years.

The Laboratories can now announce a second generation (the third generation in captivity). Alpha, the first infant born in the colony,[3] gave birth on October 17, 1939, to a son, who has been named Alf. The maternal grandparents, Pan (1922)[4] and Dwina (1920),[4] were brought to the Laboratories from Africa by animal dealers in 1925. The paternal grandparents are unknown. Alf's parents are Frank (1930),[4] purchased by the Laboratories in 1933, and Alpha, born on September 11, 1930.

In this ancestral history the estimated interval between the first generation (Pan-Dwina) and the second generation is 9–10 years; that between the second (Frank-Alpha) and the third is almost exactly 9 years. Whatever the average interval in nature, it appears that in this breeding colony it is not less than 9 years.

[1] Acknowledgment is made by the author, for contributions to the observational records upon which this report is based, to Drs. H. W. Nissen, J. H. Elder and G. Finch.

[2] Of this number, 7 immature individuals were in the Northern Division of the Laboratories, New Haven.

[3] C. F. Jacobsen, M. M. Jacobsen and J. G. Yoshioka, *Comp. Psychol. Monogr.*, Vol. 9, no. 1, 1932.

[4] Hypothetical birth-date.

Alpha's weight at birth (2.26 kg) is the greatest thus far recorded in the colony. Her son's birth weight (2.14 kg) is the next in order. In motor development, Alf is approximating closely his mother's exceptionally rapid growth. Precocity is suggested also by Alpha's sexual development, since she first menstruated at 7 years, 11 months, and became pregnant at 8 years, 5 months. The infant Alf was delivered after a gestational period of approximately 235 days.

Neither Dwina[5] nor her daughter Alpha accepted and cared for her first-born infant. Instead, each of these primiparous mothers behaved as if surprised, bewildered and lacking suitable ready-to-hand patterns of behavior for the novel emergency. Neither consumed the afterbirth. By contrast, the multiparous or experienced chimpanzee mother usually eats at least a portion of the afterbirth, and she almost invariably treats the newborn infant as a familiar object, handling it freely, skillfully, and by proper treatment assuring its welfare. Only very exceptionally does she entirely ignore or refuse to take care of her baby.[6] The structurally determined maternal behavior of the primiparous chimpanzee is importantly supplemented by acquisitions resulting from individual reproductive experience and also by social tradition.

Baby Alf is an especially prized recruit to the experimental nursery group because the offspring of an extraordinarily gentle, intelligent and cooperative male and a docile female who, bred and reared in the Laboratories, throughout her life has been accustomed to handling and use as a subject of psychobiological experiments. In this mating a first step has been taken toward breeding the chimpanzee to specification as laboratory animal. Should the temperament of Alf resemble closely that of father, mother, or both, he will be peculiarly valuable as sire and as subject for experimental studies.

Robert M. Yerkes
Yale Laboratories of Primate Biology

THE RELATIONS OF SOILS AND SURFACE IN THE SOUTH CAROLINA PIEDMONT

Systematic studies of the physiographic factors of soil erosion in the South Carolina Piedmont, carried on for the past three years by the Climatic and Physiographic Division of the Soil Conservation Service, have led to a considerable revision of current ideas concerning the development of soils and have cast new light on the recent geomorphic history of the region.[1]

Exposed by gullies which have recently developed in the valley heads, dales and other natural drainageways, are deposits of organic material as much as twelve feet in thickness and buried under twenty feet or more of soil. Most of the deposits are rich in pollen and contain quantities of stem fragments, trunks, stumps and roots of trees as well as sedges and other herbaceous plants, usually well-preserved but compressed by the weight of the overlying deposits, although in some sites the material consists almost entirely of charcoal fragments.

A preliminary analysis of the pollen in some of the deposits by Dr. Stanley A. Cain, of the University of Tennessee, showed an abundance of fir and spruce, which indicates that the climate at the time the deposits were formed was considerably colder than the present-day climate. Further microbotanical study of the organic material is expected to show the relative abundance of the various plant species represented, their succession in the deposits, and hence, possibly, the age of the deposits and climatic conditions at the time they accumulated.

Most of the deposits examined are in Spartanburg County, South Carolina. A much wider distribution is indicated, however, by reports of similar deposits elsewhere in the Piedmont and in other physiographic provinces from Maryland to Alabama.

That the material which overlies the organic deposits has migrated down slope en masse as soil creep, earthflow and slumping, and perhaps to some extent as sheet wash, can not be questioned. Within the soil material itself are unmistakable evidences of migration. In many places the underlying saprolite with the original rock structure still well preserved is sharply truncated at the soil contact. In places, the soil contains unassorted masses of clay and sand mixed with boulders that can be traced up-slope to existing veins and dikes of resistant and only partially weathered rock, and near the base of the soil "stone lines" often occur. Horizontal laminations in partially assorted materials and lenses of sands and gravels in the lower soil horizons indicate soil movement in association with running water.

To supplement observations made in gully walls and to determine the areal distribution of the transported soil, more than 800 holes were bored at regular intervals through the entire soil profile from the surface to the underlying decayed rock. In one area studied in detail, typical of much of the South Carolina Piedmont, about 50 per cent. of the surface is underlain by soil materials definitely proved to have been transported.

Hitherto, most Piedmont soils were thought to have developed from material of residual origin. The discovery of organic material underlying many of the soils, including Cecil, Appling, Colfax and Worsham,

[5] O. L. Tinklepaugh, *Anat. Rec.*, 53: 193, 1932.
[6] R. M. Yerkes, Science, 81: 542, 1935.
[1] A publication by H. A. Ireland, C. F. S. Sharpe and D. H. Eargle, "Principles of Gully Erosion in the Piedmont of South Carolina," U. S. Dept. Agr. Tech. Bul. No. 633, 143 pp., illus., January, 1939, summarized the processes of gully formation, considered the interrelation of causal factors and described the successive stages in gully development.