UNIVERSITY AND EDUCATIONAL NOTES

HARVARD UNIVERSITY has been appointed residuary legatee of the estate of the late Augustus Coe Gurney, a former member of the Paris bankers, Morgan, Harjes and Company, who died on July 5. It is reported that the share of Harvard University will amount to two million dollars.

AT the University of Chicago, Dr. J Harlen Bretz has been promoted to a full professorship of geology, and Dr. I. S. Falk, of hygiene and bacteriology; E. P. Lane, mathematics, and C. R. Moore, zoology, have been made associate professors.

DR. THOMAS A. STOREY, of New York University, who for ten years after his graduation served as director of the gymnasium of Stanford University, has been recalled to Stanford as professor of hygiene and physical education for men.

DR. DON M. GRISWOLD, who has been on a year's leave of absence from the University of Iowa, has resigned his position as state health commissioner of Iowa, effective on July 1, and will return to his post at the university. The governor has appointed Dr. Henry Albert, director of laboratories, University of Nevada, to succeed Dr. Griswold. Dr. Albert is a graduate of the University of Iowa, where for many years he was head of the department of bacteriology.

DR. J. KIMBALL YOUNG joined the faculty of the University of Wisconsin on July 1 as associate professor of economics.

AT Western Reserve University, the following announcements were recently made regarding the department of biology: Dr. C. H. Otis has been given leave of absence for the coming year; Dr. J. P. Visscher has been appointed associate professor; Dr. Lloyd Ackerman has been appointed assistant dean, and Mr. J. M. Odiorne and Mr. R. C. Gilmore have been appointed instructors.

GEORGE PATCHIN has been appointed principal of the Sir John Cass Technical Institute, London, in succession to Dr. C. A. Keane, who has retired.

DISCUSSION

LOGARITHMS AND PRECISION

IN SCIENCE[1] Professor Karl Pearson is quoted as follows: "In a certain sense the day of logarithmic tables to 4, 5, 6 or 7 figures is past . . . What are used and are often badly needed are logarithmic tables to 10, 15 or 20 figures." A couple of weeks later Professor Satterly, in SCIENCE, wrote under the heading, "How many Figures are Significant?": "The research worker trained without a course in this subject (theory of measurements), often wearies the patience of his readers with an absurd number of 'significant figures' in his numerical work."

In view of these statements it may be of service to consider the precision of measurements corresponding to different numbers of significant figures. Starting with one of the simplest cases, "good linear measurement" may be taken as requiring six digits, indicating a precision of one part in a million. With ten digits the population of the earth may be stated to the last individual, but since our knowledge of that number for a given date probably does not exceed seven significant digits, that marks an upper limit to the accuracy of the data of eugenics.

The volume of the earth to the nearest cubic yard requires only about twenty-one digits, while two more digits will express the distance to the Large Magellanic Cloud in feet; the latter number being also the approximate number of electrons in one gram of matter, quoting Dr. W. R. Whitney, of the General Electric Company.

In comparison with what is probably the longest string of significant digits ever computed, *viz.*, William Shank's value of π to 707 decimal places, the number of cubic centimeters in space-time of the Einstein Theory is relatively small, requiring much less than one hundred digits. But the radius of space-time and the number of electrons in a gram have the common property of being unknown beyond the first digit so are not accurate within ten per cent., thus illustrating the difference between results of observation and computation. For these observational results the humble slide rule, accurate to three digits, is much too refined for use, while measurements of any sort are relatively few where the ten place logarithm table is not far beyond the utmost attainable precision of the observers.

A few years ago a geometry teacher computing the length of tether of a donkey at the edge of a circular pond grazing over a given area gave the result to eighteen digits. Recently a reporter, learning of the discovery of a fifteen million year old lizard, announced that it was born in 14,998,074 B. C.

It is not an accident that decimal points are not mentioned above, since precision of measurement from the viewpoint of fractional precision is independent of size of the quantity measured, whether it be the radius of space-time or the distance between electrons within the atoms.

[1] Vol. LXI, No. 1568, p. 59.

A careful examination of the observation errors in a given problem ought to yield in general a fair estimate of the precision, even if the problem is the prosaic task of counting individuals, and the more imposing the array of significant figures, the greater the obligations of the computer to defend his results.

F. H. SAFFORD

UNIVERSITY OF PENNSYLVANIA

THE NAMES SIMIA, S. SATYRUS AND PITHECUS

THE attention of the zoological profession is invited to the fact that the proposition is before the International Commission on Zoological Nomenclature to reopen the case of *Simia*. In its present form the proposition is for the commission: (a) absolutely to suppress the generic names *Simia* and *Pithecus* and the specific name *Simia satyrus*, on the ground that retention of these names and the application of the rules to them will produce greater confusion than uniformity; (b) to insert into the Official List of Generic Names, *Chimpansee* Voigt, 1831, 76, for the chimpanzees, *Pongo* Lacépède, 1799, type *pygmaeus* 1760, for the orang-utans and *Macaca* Lacépède, 1799, type *sylvana* 1758, for the Barbary ape.

The argument before the commission gives an extensive historical review of the subject; this will be published in Bulletin 145, Hygienic Laboratory.

Briefly summarized, the argument maintains: (1) that because of the importance of the Primates in connection with investigations on infectious diseases, the nomenclature of certain genera has passed far beyond a status in which this subject is of importance only to zoologists in general and to mammalogists in particular; (2) that it is absolutely essential that unambiguous names be adopted internationally for experimental animals used for studies dealing with problems involving the life and death of human beings; (3) that the names *Simia, Simia satyrus* and *Pithecus* are so confused in zoological literature as to preclude hope of reasonable uniformity in their use in zoological, bacteriological, serological and public health work; (4) that the safest solution is to suppress these names entirely; (5) and that the International Commission should select thoroughly unambiguous and suitable substitutes which will preclude possibility of confusion in interpreting results as reported by bacteriologists and others in different countries—results which deal with human life.

The secretary will delay announcement of final vote until about September 1, 1927, in order to give to zoologists, bacteriologists and others who may be interested time to consult the premises formulated in Bulletin 145, and to express their views to the commission. Application for copies of Bulletin 145, Hygienic Laboratory, should be addressed to "Surgeon General, U. S. Public Health Service, Washington, D. C."

C. W. STILES,
Secretary to Commission
HYGIENIC LABORATORY, WASHINGTON, D. C.

SAND FLOTATION ON LAKES

IN connection with the articles on sand flotation which appeared in SCIENCE on April 16 and June 4, 1926, it may be stated that this phenomenon has been observed on two lakes in northern Wisconsin; it was noted on Trout Lake on July 2, 1925, and again on May 9, 1926, and on Tomahawk Lake on May 15, 1926. On July 2, 1925, some biological observations covering an area about four hundred meters long and one hundred meters wide were made along the shore of Trout Lake, and patches of floating sand were found over this entire area; no attempt was made, however, to ascertain the full extent of the water thus affected. On May 15, 1926, patches of floating sand were found along the shore of Tomahawk Lake, covering an area about two hundred meters long and fifteen to twenty meters wide; it was estimated that the floating sand covered between five and ten per cent. of the surface of the water within this area. The patches ranged from one centimeter to about five centimeters in diameter. Sand grains of various sizes were found in this material, the largest measuring 2 x 1.2 x 1 millimeter.

In both lakes the floating sand was found along sandy shores and beaches, and there was a moderate offshore wind in each instance, to which agent the phenomenon was attributed.

C. JUDAY

UNIVERSITY OF WISCONSIN

SCIENTIFIC BOOKS

An Introduction to Cytology. 2d edition. By LESTER W. SHARP. New York, McGraw-Hill Book Co., 1926. Pp. xiv + 581.

A NEW edition of this widely used work will be heartily welcomed. The book has been largely rewritten and its scope has been in some respects materially extended. Especially noteworthy are the fuller consideration given to discussions of the physico-chemical structure of protoplasm and of cytoplasmic inclusions in the light of recent studies; the author's modified attitude toward the achromatic mechanism concerned in mitosis; the illuminating discussion and summary of meiosis and the more extensive review of our knowledge of animal cytology. As in the former edition, the illustrations are admirably chosen and technically excellent. An important improvement is the inclusion of the bibliography in one alphabetic list.