THE trustees of the estate of the late John W. Sterling, to whom the residue of the estate was left in the interest of Yale University, have established two additional Sterling professorships at Yale; one of these is to be assigned for the present to mathematics, one to physiological chemistry. Professor Ernest W. Brown, of the department of mathematics, has been assigned to one of these professorships, and Professor Lafayette B. Mendel, professor of physiological chemistry has been assigned to the other. Four Sterling professorships have now been established, the other two being the new professorship of education recently filled by the appointment of Frank E. Spaulding, formerly superintendent of public schools in Cleveland, Ohio, and the new professorship of chemistry recently filled by the appointment of Professor John Johnston, formerly secretary of the National Research Council. Each of these professorships has an endowment of about $225,000. After meeting the salary of the professor, "the university shall have the right to use any surplus income of these funds in advancing the work of the said professorship through the appointment of assistants, aid in publication, opportunity for study or investigation in New Haven or elsewhere, or in other ways."

PROFESSOR PAUL H. M.-P. BRINTON, head of the department of chemistry at the University of Arizona, has accepted appointment as professor of analytical chemistry in the school of chemistry at the University of Minnesota.

PROFESSOR HALE HOUSTON, head of the department of civil engineering at Clemson College, S. C., has been elected associate professor of engineering at Washington and Lee University, the appointment being effective on September 1.

AT Stanford University associate professors have been promoted to be professors as follows: William A. Manning in applied mathematics; Leroy Abrams in botany; Jesse B. Sears in education; Thomas Addis in medicine. Assistant professors to be associate professors: Edwin W. Schultz and William L. Holman in bacteriology; William M. Proctor in education; Charles N. Cross in mechanical engineering; Frank W. Weymouth in physiology; John E. Coover in psychology. Assistant clinical professor to be assistant professor: Henry G. Mehrtens, in medicine. Instructors to be assistant professors: Elizabeth L. Buckingham, and Edith R. Mirrielees in English; Edward B. Towne in surgery; James P. Baumberger in physiology; Gordon F. Ferris in entomology (zoology).

PROFESSOR BRAUS, of Heidelberg, has been proposed as the successor to Professor O. Hertwig, of Berlin, who has sent in his resignation.

DISCUSSION AND CORRESPONDENCE

GENETICS OF THE "CHINCHILLA" RABBIT

A CONSIDERABLE interest exists in the raising of rabbits for fur, stimulated no doubt by the extensive use and high price of fur garments in recent years, and by the fact that wild fur-bearing animals are on the decrease. Rabbit fur has long been used as a substitute for other furs and sold misbranded but is coming to be used under its own name and on its own merits. One impetus to such use comes from the development chiefly in France of breeds whose fur is attractive in its natural colors. Among such breeds are the chocolate or "Havana," the French silver of "champagne d'argent," and the "Chinchilla." This last is an especially pleasing color variety of a pearl gray color. The coat is similar to that of a wild gray rabbit except that (1) it contains no yellow whatever, the yellow ticking of gray rabbit fur being replaced with white, and (2) the black portions of the gray fur are toned down to a slaty blue. Both these differences appear to follow from a single genetic change, a mutation in the color factor less extreme than that which has occurred in the white or albino variety, yet affecting the same genetic factor or "gene."

If a chinchilla rabbit is crossed with any of the common color varieties other than white, the chinchilla character behaves as a reces-

sive in heredity, in which it agrees with the behavior of the albino character. But if it is crossed with the albino variety itself, offspring are produced all of which are chinchillas, and in later generations both chinchilla and white young are to be expected. These facts indicate that it is an alternative form or allelomorph of albinism. It constitutes the fourth recorded albino allelomorph in rabbits, the series in the order of decreasing pigmentation being (1) ordinary pigmentation, (2) chinchilla, (3) Himalayan albinism, (4) ordinary albinism (snow white). A similar but not identical series of albino allelomorphs was described for the guinea pig several years ago by Sewall Wright.[1] Chinchilla seems to be substantially equivalent to the guinea-pig albino allelomorph seen in the red-eyed silver agouti variety. A homologous albino allelomorph in the rat has been described by Whiting and King,[2] under the name of ruby-eyed dilute gray.

One defect of the new fur varieties of rabbits is their relatively small size. Furriers desire larger, stronger pelts, such as can be obtained only from large-sized animals. In the case of the chinchilla variety the desired improvement can be obtained easily and speedily. The desired size is found in varieties raised chiefly for meat, such as the Flemish Giant. Various color varieties occur in this breed including the albino, known as "white Flemish." By mating a pure chinchilla with white Flemish rabbits, young will be obtained all of which will be chinchillas in color yet will have increased size, intermediate or a little greater than intermediate between the sizes of the respective parents. By further crossing of the improved chinchillas with white Flemish, still larger chinchillas may be obtained, and in a very short time the full size of the Flemish breed may be substantially secured in a rabbit having the chinchilla coat. In this process of improvement there will be no wasters, unless the fifty per cent. of whites are so regarded, for the peculiar method of inheritance renders all other young valuable, since all will be chinchillas.

W. E. Castle
Bussey Institution

[1] Carnegie Institution of Washington, Publication No. 241, 1916.

[2] *Jour. Exp. Zool.*, 26, 1918.

THE EARLY HISTORY OF LITMUS IN BACTERIOLOGY

The writer is indebted to Professor F. G. Novy, of the University of Michigan, for the correction of a statement in a recent article entitled "Chemical Criteria of Anaerobiosis with Special Reference to Methylene Blue," published in the *Journal of Bacteriology*, January, 1921, Volume 6, page 1.

The statement in question is as follows:

> "The earliest authentic reference to the bacteriological use of litmus appears to be that of Wurtz (1892) who introduced litmus lactose agar as a differential medium for *Bact. coli* and *Bact. typhosum*. It was impossible to confirm Novy's (1893) allusion (copied by Hunziker, 1902) to Buchner (1885) and Cohen (?) as first to use litmus acid and reduction changes respectively, the last reference apparently being altogether erroneous."

Professor Novy points out in a letter, which is quoted by permission, that many of the workers of that period, including himself, had used litmus for several years prior to the date of Wurtz's paper. As Professor Novy says, "Wurtz was a late comer." My reference to Wurtz as apparently the first can be defended only upon the admittedly uncertain grounds that having attempted in vain to find a reference to litmus in Buchner's article as quoted by Novy and Hunziker, and having failed to find even an article by Cohen, I took what seemed at the time the earliest authentic reference.

The following is quoted verbatim from Professor Novy's letter:

> It is true that the references are not correct; whether it be due to failure to send me proof, or to my own carelessness I am unable to say.
>
> The only reference which I give to Buchner is to E. Buchner, the chemist, and concerns his hydrogen culture work. My text (p. 597) mentioned Buchner (unqualified) and, as was more or less the custom of the day, it meant the bacteriologist, Hans Buchner. Unfortunately, through some slip no reference to his work is given.