seminating of practical instruction regarding improved methods, and their demonstration upon the estate, which will be conducted as a model farm, and also on demonstration fields in adjoining sections. It is estimated that about $48,000 for buildings and equipment, and $21,000 annually for maintenance, will be required.

THE William Rainey Harper Memorial Library at the University of Chicago is to be dedicated on June 10 and 11, 1912. A special effort will be made to have the alumni attend the dedicatory exercises, which will be held in Harper Court, bounded on the south by the Library, on the west by Haskell Oriental Museum, and on the east by the Law Building. For the next few years the first floor of the new building will be used for class-rooms and will also contain the Harper Assembly room. Eventually, however, the entire floor is to be utilized as a stack-room.

THE trustees of Cornell University have voted to approve the recommendation of the faculty of the College of Agriculture and the university faculty to grant hereafter the degree of bachelor of science, instead of bachelor of science in agriculture, for the completion of the course in the College of Agriculture.

AT Princeton University, William F. Magie, Henry professor of physics, has been elected dean of the faculty to succeed Professor H. B. Fine. Professor Fine retains the deanship of the department of science. He will spend the coming academic year in Europe.

DR. M. E. WADSWORTH, for the past five years dean of the School of Mines of the University of Pittsburgh, has resigned, his resignation to take effect on June 30. Mr. S. A. Taylor, C.E., an alumnus of the university, has been appointed dean.

PROFESSOR H. P. BAKER, of the Pennsylvania State College, has accepted a position at Syracuse University as dean of the State College of Forestry, established in 1911 by the New York legislature with an initial appropriation of $55,000.

PROFESSOR RICHARD S. CURTIS, of the University of Illinois, has resigned to become professor of organic chemistry at the Throop Polytechnic Institute, Pasadena, California, and L. L. Burgess, associate in chemistry, has resigned to become assistant professor of analytical chemistry at the University of Saskatchewan, Canada.

THOMAS C. BROWN, Ph.D. (Columbia, '09), assistant professor of geology in the Pennsylvania State College, has been appointed associate in geology at Bryn Mawr College.

MR. R. J. S. PIGOTT has been appointed assistant professor of steam engineering in Columbia University, a newly established position in the School of Engineering.

H. LEE WARD, of Swarthmore College, has been appointed instructor in chemistry in Wesleyan University.

THE following new appointments to instructorships have been made in the department of chemistry of Columbia University: Andrew Bender, Columbia University; R. H. Lombard, Columbia University; Arthur Edgar, Massachusetts Institute of Technology; Dr. Frederick Barry, Harvard University; R. F. McCrackan, Columbia University; Harry L. Fisher, Cornell Medical School; Robert M. Isham, Columbia University.

PROFESSOR FRIEDRICH CZAPEK, of the University of Prague, has been appointed to the chair of plant physiology and pathology in the Imperial College of Science and Technology, London.

DISCUSSION AND CORRESPONDENCE

A PROTEST AGAINST CHANGING THE INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE

IT is well known to all who have had to deal with questions of nomenclature that much of the confusion in the application of generic names in the past has been due to the lack of system in determining the type of a genus.

It is a matter of small importance just how the type is determined so long as every one uses the same method and the method is sufficiently clear and definite to yield uniform results in the hands of different investigators.

The method of elimination which was for some time in use was unsatisfactory in this respect. It proved impossible to formulate rules by which the type of a composite genus could be "eliminated" by several investigators with the same result.[1]

Systematists naturally demanded a simpler method which would give uniform results in the hands of different persons, and the "first species" method met with very general support when the question of a change was raised. The matter came before the International Commission on Zoological Nomenclature at Boston in 1907 and resulted in the adoption, as a compromise, of the method now incorporated in the Code, whereby the action of the first author who designates a type for a polytypic genus is held as binding in all cases where the type is not settled by original designation, tautonymy, etc., as enumerated in Art. 30, rules "*a*" to "*d*."

This method is definite and has been accepted by all zoologists who follow the International Code. The types of thousands of genera have been recently determined by this method and many complicated questions of nomenclature have been settled in accordance with its rules. The Commission, with the cooperation of subcommittees, has even begun to prepare lists of authoritative names for genera in various departments of zoology, based upon the rules now in use.

Zoologists began to feel that stability and uniformity were at last in sight—but no! We are recently in receipt of a circular signed by a number of European zoologists advocating a return to the method of elimination and urging that the proposition be brought, not before the Commission on Nomenclature, but before the entire Zoological Congress!

It is hard to see how any zoologist can seriously support such a proposition, especially at the present time, when such satisfactory progress toward stability was being made. It is of course permissible to change the Code of Nomenclature where the rules are obscure or indefinite; but if we are to shift back and forth to accommodate the views of now one coterie of investigators, now another, we might as well abolish all codes and lapse into nomenclatural chaos.

The return to the elimination method would not only reestablish the chaos in generic names from which we are just emerging, but would undo all the careful work in type determination which has been accomplished in the past five years as well as shake our faith in the permanency of any action of the Commission.

The proposition, moreover, to bring such questions before the entire Congress instead of the Commission on Nomenclature is preposterous. The determination of questions of nomenclature can only be effected by men who have had long experience in this line of work and many members of the Congress who are not systematists have little or nothing to do with nomenclature. For this very reason the Commission was appointed by the Congress and now to propose to ignore it is little short of insult.

One can not but suspect that some of the signers of this petition have been influenced by the entirely erroneous plea that the changes in well-known generic names are all due to the present method of type determination and that the return to elimination would restore the familiar names. Nothing is farther from the truth. Every method of type determination will involve changes in generic names and probably in about equal numbers, but the greatest number of changes is due not to the method type designation nor yet to priority, but to excessive generic subdivision. There would probably be a great protest were it proposed to overthrow the genus *Picus*, the classic name for woodpeckers, but, as a matter of fact, such action would affect the name of but one species of bird, as all other woodpeckers have been removed from this genus!

It is to be hoped that zoologists attending the Zoological Congress at Monaco in 1913 will realize the seriousness of this matter and not permit a technical question of this kind to be taken outside of the Commission on Nomenclature expressly established for its

[1] Cf. Science, Vol. XXIV., p. 560.

consideration; and further that the members of the Commission will not countenance a change in the Code which is both uncalled for and unnecessary, and which will render void much valuable work and threaten the success of the whole movement toward uniformity in zoological nomenclature.[2]

WITMER STONE
THE ACADEMY OF NATURAL SCIENCES,
PHILADELPHIA,
May 7, 1912

"GENES" OR "GENS"?

AFTER discussing the significance of the word "phenotype" in SCIENCE for April 26, Dr. O. F. Cook states that

> Pluralizing the word "gen" is another difficulty encountered by geneticists. Johannsen used the term mostly in its German plural form, *Gene*. Our writers have added another letter making a double plural, "genes," something like "memorandas."

This statement does not correctly represent the origin of the English word "gene" and its plural "genes," now generally used by writers of English papers on genetics. In Darwin's word "pangen" English usage renders the last syllable short, though the two halves of the word contribute equally to its meaning. When the word is transferred to the German, as has been freely done, a law of the German language makes both syllables long. On this account the German word *"Pangen"* better expresses the meaning involved than does the English word "pangen." Johannsen's word *"Gen,"* like the last syllable of the German word *"Pangen,"* from which it was directly derived, is long in quantity. On transferring this happily chosen word to English it was desired to maintain the long quantity of the German word, and the addition of a final *e*, following a general law of English philology, was made simply for this purpose. The English word "gene" (pronounced gēn) is thus seen to bear no direct genetic relation to the German plural *"Gene,"* and their likeness in spelling is purely a coincidence. The word "genes" is consequently not a double plural and not at all like "memorandas."

There is a further reason why the word "gene" should be preferred. This word must be used commonly in the plural form, but there is already a word "gens" in rather common literary use and having, at least sometimes, a genetic meaning.

Regarding the definition of "phenotype," few who carefully read the passage translated by Dr. Cook from Johannsen's book will agree with the translator that "phenotype" as used by its author was ever anything but an abstraction. "Centers among series of variations around which the variants are grouped" must always be abstractions, and yet they are, as Johannsen rightly says, "measurable realities." Every individual organism possesses an external appearance and a fundamental constitution, and is therefore a representative of some phenotype and of some genotype. The words "phenotype" and "genotype" were never intended to be limited to *statistically investigated* organisms. Statistical investigation may *discover, measure* and *describe* phenotypes, but it does not *create* them. Phenotypes and genotypes exist among Mendelian hybrids just as among all other organisms, and my use of the Mendelian categories to illustrate the proper use of these two words involves no "new version of phenotype."

G. H. SHULL
COLD SPRING HARBOR, L. I.,
April 29, 1912

CRYSTALLOGRAPHIC TABLES

TO THE EDITOR OF SCIENCE: The letter of Professor Oliver Bowles, of the University

[2] Since the above was written I have read Professor Nutting's article in SCIENCE criticizing the powers of the commission and the difficulty of bringing a question of nomenclature before the congress for discussion. He fails to realize that these very facts give the code its strength and establish confidence in the permanency of nomenclature based upon it. We do not desire rules that appeal to this man or that, but rules that shall be *permanent* and the International Congress was perfectly right in making it as difficult as possible to change the code.—W. S.