render the service, is a part of the new educational creed. This conception of the responsibility of state institutions has led to an especially wide-reaching organization for extension teaching in certain states, notably Wisconsin, Nebraska, Texas, Minnesota and some others.

It has been seen that the principles underlying university extension are as old as the oldest educational institutions and that many features of the work in its present development are merely adaptations of forms introduced in the past. A superficial view of these facts may provoke some degree of discouragement in the believer in university extension as a permanent partial solution of the American problem of further education for the masses. It is my desire to point out wherein modifications in the present forms would seem to promise remedies for the defects of earlier experiments and why, therefore, we may believe that in America as in England, new applications of tried methods will succeed where old ones were ineffective.

THE BOTANICAL CONGRESS AT BRUSSELS

The third International Botanical Congress was held at Brussels, Belgium, May 14–22, 1910. Saturday, the fourteenth, was the day for registration. On Sunday, the fifteenth, the members of the congress assisted at a session of the Royal Botanical Society of Belgium, held in the "dome" of the large building connected with the Jardin Botanique, at which several interesting papers were presented by members of the society. Two general sessions of the congress were held in the same room; the opening session Monday morning, the sixteenth, and the closing on Sunday, the twenty-second. No regular sessions of the congress were held in the evening, but during the week several interesting papers on phytogeographical subjects, economic botany, etc., were given in the evening.

Of the three sections into which the congress was divided for the special work of the week, perhaps the most important was the "Section on Nomenclature." The meetings of this section were held on the exposition grounds in Festival Hall.

As is well known, the Vienna Congress in 1905 selected Linnæus's "Species Plantarum," 1753, as the starting point for the nomenclature of the seed plants (Spermatophytes) and vascular cryptogams (Pteridophytes). It also established the general principles and codified the rules which form the *rules of nomenclature for plants*. In dealing with the "cellular cryptogams" certain problems were presented which the Vienna Congress decided should have special consideration, viz., the question of different, later starting points for the nomenclature of different groups of the "cellular cryptogams," and the problems connected with the nomenclature of the fungi possessing a pleomorphic life cycle.

As to the starting point for the nomenclature of plants it is well known that there were two opinions, as follows:

1. That there should be a single date recognized for the beginning of the nomenclature of all plants. This opinion was based on the principle of uniformity in time or date as the starting point.

2. That there might be several different (multiple) dates or starting points for the nomenclature of different groups. This opinion was based on the principle that *uniformity in the selection of the earliest comprehensive work treating a group, large or small, in a somewhat modern sense,* was of more importance than the principle of uniformity of date. Therefore, the Vienna Congress wisely decided to refer the consideration of the nomenclature of the "cellular cryptogams" to the Brussels Congress in 1910 in order that these problems might be studied in the meantime.

Since it will be several months before the complete proceedings of the Brussels Congress can be published, we present here, for the benefit of American botanists, a brief statement of the most important legislation enacted by the Section on Nomenclature.

On Tuesday the section began the consideration of the motions relating to the nomenclature of the "cellular cryptogams," and, with the exception of Thursday, which was devoted wholly to excursions, the work, together with the motions relating to paleobotany and phytogeography, was continued throughout the week. The different groups were taken up in the order in which they were presented in the preliminary publication, including the various motions, the result of the preliminary voting by the special commissions, the comments of the rapporteur général, and the provisional drafts of rules. In general session of the section it was voted to postpone the consideration of the bacteria diatoms and flagellates, and to take "Linnæus's Species Plantarum," 1753, as the starting point for the nomenclature of the Myxomycetes.

At the opening of the session after the noon recess it was suggested that an adjournment of the session be taken for an hour in order to allow all the specialists in the different groups of cryptogams who were present to hold informal conferences for the purpose of agreeing upon recommendations as to dates for the starting points of nomenclature which would be acceptable to them. These recommendations were presented to the section on Tuesday afternoon and Wednesday morning, and were adopted as rules without further discussion, no one expressing a desire to discuss them in general session. The majorities[1] in favor of the different votes were very large, in the case of fungi for instance 130 to 4. The dates adopted, therefore, by the Brussels Congress for the starting points for the nomenclature of the "cellular cryptogams" are as follows:

MYXOMYCETES

Linnæus, Spec. Plant., 1753.

FUNGI

Fries, Syst. Myc. 1821–1832, except for the Uredinales, Ustilaginales and Gasteromycetes, which date from Persoon's Synopsis, 1801.

LICHENS

Linnæus, Spec. Plant., 1753.

ALGÆ

Gomont, Nostocaceæ homocysteæ, 1892–1893.
Bornet & Flahault, Nostocaceæ heterocysteæ, 1886–1888.
Ralfs, British Desmidiaceæ, 1848.
Hirn, Œdogoniaceæ, 1900.
Linnæus, Spec. Plant., 1753, for all other algæ except the Chroöcoccaceæ.

BRYOPHYTES

Hedwig, Spec. Musc., 1801–1830, for the Mosses.
Linnæus, Spec. Plant., 1753, for the Liverworts.

The general position taken by the congress is well shown in the case of Bryophytes in which the fundamental species Muscorum of Hedwig was adopted for mosses while for liverworts on which there exists no work corresponding to the species Muscorum it was decided to go back to Linnæus.

Action upon the Chroöcoccaceæ, Bacteria, Diatoms and Flagellates was postponed for future discussion, partly for the reason that it was difficult to select satisfactory works to serve as a basis of nomenclature and partly because those groups have been studied also by zoologists and it is therefore necessary to take into consideration zoological as well as botanical treatises.

With regard to the nomenclature of the imperfect fungi the following rule was adopted:

Fungi with pleomorphic life cycle.

1. The different successive stages of the fungi with pleomorphic life cycle (anamorphoses, status) can bear only a single generic and specific name (binome); that is to say, the oldest, from the starting point of the nomenclature of the fungi, which has been

[1] The voting on these questions was taken by a count of the number of votes to which each delegate was entitled and the number of votes cast was therefore larger than the actual number of delegates present. On certain general questions the voting proceeded by simply a show of hands.

applied to the perfect stage, provided that in other respects it conforms to the rules.

2. For the purposes of nomenclature it is agreed that the perfect stage of fungi with pleomorphic life cycle is that which bears the ascus in the Ascomycetes, the basidium in the Basidiomycetes, the teleutospore in the Uredinales and the spore in the Ustilaginales.

3. Generic or specific names applied to imperfect stages may not be used to replace a name applied to one or more species, any one of which contains the perfect stage. *Rule.*

Citations of pre-Friesian or pre-Persoonian names follow the rule. Examples, *Boletus edulis* Fries, not *B. edulis* Bull.; *Polyporus ovinus* Fries, not *P. ovinus* (Schaeff.) Fries. Writers who prefer, however, may write *Boletus edulis* Fries ex. Bull., *Polyporus ovinus* Fries ex. Schaeff., etc.

It is recommended in case of biological species (formes speciales) among the rusts that authors who prefer to employ double names take them from the names of the host plants. A recommendation which was offered as applying to the fungi, that when a new genus is published, if there are more than one species the author should cite one as the type species, or if but one species, that one is to be regarded as the type of the genus, was adopted as a recommendation and made to apply to all plants.

On one point, viz., the desirability of having extensive lists of genera conservanda, the expression of the opinion of those present was so strong that it was practically unanimous and commissions were appointed to prepare lists of genera conservanda in the fungi, lichens, algæ, mosses and liverworts.

The following action was taken in regard to the genera conservanda in the pteridophytes and additional ones in the spermatophytes presented for consideration at Brussels. *Selaginella* was placed among the genera conservanda, while the remaining genera in the proposed list of pteridophytes were rejected.

A commission, which had been appointed for the purpose in advance of the congress, carefully considered the additional genera conservanda among the spermatophytes in the list proposed by Janchen, and recommended that 21 or 22 names be stricken out. The list, as amended, with the addition of the name *Welwitschia,* was adopted.

The motion to amend the Vienna rules by striking out the clause requiring a Latin diagnosis of new genera and species was voted down Monday afternoon along with several other motions of a general nature. The question was discussed, however, at a later time when considering a motion by the paleobotanists to the effect that a diagnosis be required only in one of the following languages: French, English, German or Italian. This discussion broadened into a general one, and although it was defeated the discussion showed that there was a strong sentiment against the Latin requirement, especially on the part of the American botanists, and the subject will probably be brought up again for discussion at the next congress.

With reference to the question of nomenclature in phytogeography the following principles were adopted:

1. Nomenclature is to be avoided and the expression *terminology* is rather to be employed.

2. When technical words are employed a clear definition of them should be given in the sense in which the writer uses them, and also when a term is used in a sense different from that in which it has formerly been employed.

3. It is recommended to use terms taken from living (vulgar) languages to denote associations, etc., and reserve expressions of Greek or Latin origin for higher units where there are rarely equivalents in the living tongues (examples, mesophytic, hydrophytic, etc.).

4. The principle of priority has no legal value in phytography. Terminology is very different from nomenclature, and must be subject to change in order to bring it in harmony with the change of ideas in the interpretation of facts.

5. A recommendation for the establishment of clear phytogeographical maps was adopted.

6. Definition of ecology: phytogeographical

ecology is the study of plants and plant associations in their relations with the medium (surrounding medium, or environmental conditions).

7. Without giving a definition of the following words, *formation* and *association,* the section recommends the use of "formation" in a wider ecological sense, and "association" in a more restricted, floristic sense. Examples: meadow, prairie, etc., are "formations"; but an alpine meadow on granitic soil in central Switzerland would be an "association."

8. *The decision to publish a dictionary of phytogeographic terminology* containing all the pertinent expressions used in phytogeographic and floristic works with original definitions and bibliographical references, and their equivalents in English, French and German.

9. It is proposed that where such words as *zone* and *region* are used in different senses in different countries to employ new and clear expressions. Examples: étage (level, or floor) = Höherenregion, Tieferenregion of the Germans = Zone altière zone abyssale of the French.

10. A commission was named for the above purpose consisting of the members of the present commission with many others added, giving the committee power to add still others.

In the publication of the proceedings of the congress the rules and recommendations adopted at Brussels will be incorporated in their proper place with those adopted at Vienna, the latter being reprinted, so that the rules of nomenclature for plants will be presented in a single and convenient brochure.

The members of the commission on the nomenclature of the cryptogams are greatly indebted to Dr. Briquet for summarizing in a comprehensive manner the many different and often conflicting views expressed by the specialists of the commission in their preliminary correspondence. Dr. Briquet also rendered a most important service in interpreting the remarks made by different speakers in French, English and German so that they were understood by all those present. Professor Flahault, Professor Mangin and Professor Engler, who presided over the different sessions, performed their duties in such a way as to deserve the hearty thanks of all the members, combining a courteous and affable manner with a strictly business management.

W. G. FARLOW
GEO. F. ATKINSON

PARIS,
May 28, 1910

PRESENTATION TO PROFESSOR BOLZA

WHEN it became generally known that Professor Bolza was to leave the University of Chicago and return to Germany, a movement was inaugurated among his former students to present to him some suitable memorial indicative of their sorrow at his loss and their affection for him as a friend and teacher. The response was spontaneous and generous, making it possible to procure a beautiful and costly loving cup, which was presented to Professor Bolza at a dinner held in his honor on Friday, June 11, 1910, at the University Club of Chicago, where were gathered the members of the faculty in the departments of mathematics, astronomy and physics, together with Professor I. U. Nef, Dean Rollin T. Salisbury and President Harry Pratt Judson, representing the University of Chicago, and Dean Thomas F. Holgate, of Northwestern University, representing the American Mathematical Society.

After appropriate addresses by President Judson, Professor Moore and Dean Holgate relative to Professor Bolza's brilliant service at the university since its organization, the student committee represented by Dr. Arnold Dresden, of the University of Wisconsin, in a most touching tribute to Professor Bolza, presented to him the loving cup. Along with the cup was given a beautifully illuminated and bound dedicatory statement with the names of more than one hundred masters, fellows, doctors and other advanced students, including eight present members of the university faculty and representing twenty-six different states and as many colleges and universities in which they are now located.