was always for the noblest and best in human effort. While too engrossed in his scientific and philosophic writings to take the initiative in University or public affairs, he was ever in touch with the progress of the time, and ever sympathetic and healthful in advance movements. He was of an exceptionally cheerful and happy disposition and was possessed of a fund of humor that made him a sparkling and entertaining conversationalist. He had the graces and manner and speech and chivalric instincts of a gentleman of the old southern school. He was beloved by the whole University, and with increasing years this love became a sort of veneration, so that he was in the later years of his life the veritable idol of the University community.

His death, without lingering pain, in the midst of the grand Sierra that he loved so well, surrounded by many of his friends, was a fitting close to his long life. His kindly presence and benign influence will long live in the memory of the University, and in the world of science he has certainly established for himself a monument more lasting than brass.

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AN AMERICAN SENATE OF SCIENCE.

WHEN in the course of human events the most vigorous colonies of the New World deemed it necessary to found a nation, they cast aside tradition and example and invented a system of government based on the theory of human equality. The movement opened a new chapter in the history of nations; earlier governments grew into form much as the primitive implement takes shape by continued use, but this was a distinct creation, like the complex tool invented and made for a purpose; and the fundamental theory was new in application if not in thought. The invention of the colonists was applied experimentally, and worked well; minor changes were found needful here and there in the adjustment of the mechanism to its work, yet remarkably enough the most sweeping changes led directly toward the fundamental theory of equality; and for a century and a quarter the world's first invented government has proved the world's most successful government. The device of governing by the people for the people was adopted by the component organizations with equally satisfactory results. The colonies, and after them the states, rested on the fundamental theory; the municipalities followed; counties and townships and villages adopted practice and theory together; and political organizations sprang from the theory to shape the practice of governmentation. In the smaller organizations as in the larger the governmental mechanism has worked well; difficulties have arisen, yet remarkably enough most of these have resulted from the opposition of one-man power to the theory of equal rights; and the world's most striking examples of growth in cities and States are found in numbers in the nation invented by its founders.

The essential mechanism of the invented government was that of control by equitably selected representatives. Provision for keeping the control adjusted to current needs was made by limiting tenure of office and excluding hereditary privilege; while provision against undue instability was made by arranging for the equitable selection of representatives of a second order, *i. e.*, representatives of representatives. In that branch of the government performing legislative (or constructive) functions, these representatives of representatives are organized in senates, whose powers are coordinate with those of the primary representative bodies. In general terms, the representative body is the progressive factor, the senate the conservative factor, of the body-politic; and it is the special function of the

senate to coordinate spontaneous movements, and thus to perpetuate the integrity and vitality of the organization. To borrow analogy from planetary assemblages, the representative body is as the centrifugal force, the senate as the centripetal force, combined in orbital progression. The important fact is that political organization of the modern and successful sort is incomplete without provision for the maintenance of internal harmony, of stability, of vitality —as in the senates of the invented nation and its constituent states.

Now America has become a nation of science. An unequaled proportion of her citizens are engaged in scientific research, while it is not too much to say that the masses of the people recognize the principles as well as the applications of science in their everyday avocations; the scientific spirit is fostered and diffused by a number of voluntary associations of scientific character probably larger in proportion to population than can be found in any other country; and our statesmen are guided by the conclusions of science, while our federal and State governments support science, in unequaled degree. Yet despite their activity and numbers, despite the extent and strength of their voluntary associations, American scientists have not profited by the example of the nation's founders, and have taken no steps toward shaping the further progress of science by representative organization. Many, if not most, of the voluntary associations indeed have executive bodies to exercise appropriate administrative and judicative functions, and perhaps to propose legislative action; but this mechanism merely simplifies the transaction of business, the powers of the elected representatives are limited to the affairs of a particular association of which the body is a part, and there are no representatives of the second order—no representatives of representatives—empowered to act in the interests of science in general. It is not, of course, the function of science to govern, so that governmental organization *per se* is not required on the part of scientific men or their associations; but collective action for common interests demands organization—and one of the surprising features of American science (especially in view of the example set by statecraft) is its unorganized condition. True, each special science is fostered by one or more voluntary associations, sometimes of national character; true, general science is represented in each principal city by one or more voluntary associations, perhaps loosely confederated, as in New York and Washington; true, some fields of research have been preempted by the federal government in the public interest; true, different sciences are cultivated by the aid of special journals; yet the great fact remains that the scientists and scientific interests of America are not well coordinated, much less unified in a symmetric whole. The centrifugal tendency is strong; the centripetal factor requisite for independent character is lacking.

An effective mode of organizing American science is suggested by the constructive organization of the nation in which scientific progress has been most rapid—it is that of organizing the voluntary associations in what might be called a Senate of American Science. The successful example of American nationality would suggest that such a senate should be made up of delegates chosen by the voluntary scientific associations of the country, for limited terms, in numbers equitably proportionate to the size of the representative associations. The functions of the general body would naturally include (1) coordinating scientific interests and progress; (2) representing science in its broader aspects on behalf of the country; (3) forming a nucleus for scientific congresses, national and international; (4) fixing the bases of represen-

tation of the primary associations; and fulfilling any other duties connected with scientific interests and its own maintenance.

Two methods of procedure toward the organization of such a Senate of Science present themselves: The first suggestion is that of creation *de novo*, on the initiation of a few leaders in scientific thought. The chief advantage of this method would seem to lie in the freedom from entangling alliances; the chief obstacle would seem to grow out of the large initial energy required to set the mechanism in effective operation. The second suggestion is that of utilizing some existing organization, naturally of national character, as a nucleus. The chief advantage of this method would be that of economy in initial energy; while a serious obstacle might grow out of the indisposition of any existing association of national character to undertake the necessary reorganization. As between the two methods suggested, the sum of theoretical advantages would seem to favor the independent organization; though it might easily be that practical considerations would turn the advantage toward the method of reorganization of an existing society.

On reviewing the societies which might yield a nucleus for a national Senate of Science, several would seem worthy of consideration on various grounds; yet such consideration would seem to eliminate all but two or three from final review. These are (1) the American Association for the Advancement of Science, the oldest of our national scientific societies of general character, and the one most completely in touch with the scientists of the entire country; (2) the National Academy of Sciences, the most dignified and exclusive of our voluntary associations of scientific character; and perhaps (3) the Washington Academy of Sciences, one of the youngest and most vigorous of our scientific organizations, and one already possessing (at least in inchoate form) a confederate character.

The availability of the last-named organization would seem questionable, primarily on the ground of its local character, partly because of its youth and the consequent uncertainty as to its real character and actual prospects. Although apparently available on casual consideration, the National Academy would seem on closer scrutiny to be fundamentally unsuitable as a nucleus for a coordinative super-organization; for it is based largely on foreign models, is out of accord with the theory and the practice of popular government, and has developed functions diametrically antagonistic to the limited tenure and representative character which would seem requisite for the success of a working senate. True, its membership comprises the most honored names in American science, men whose prestige and support would doubtless be essential to the success of a more general organization; but it would appear probable that most of the working members of this dignified body would enter in due course, by virtue of their standing, into a representative organization. The remaining society (the American Association for the Advancement of Science) would seem to offer an available nucleus through its Council, a body already representative in that it is made up largely of delegates nominated in the several nearly independent sections. It has the further advantage of serving already as a nucleus for other scientific organizations, a number of which meet with it annually, contributing materially to its standing and its influence on current thought concerning matters of scientific interest. This aspect of the Association and its Council was brought out clearly in a recent number of SCIENCE, and the exposition need not now be repeated; it suffices to note that the organization of the Association, its large and widely dis-

tributed membership, its strong hold on the sympathies of scientific men, the high appreciation in which it is held throughout the country, and the appropriate constitution of its Council, all point to the American Association for the Advancement of Science as a suitable nucleus for a Senate of Science—whenever the time arrives for establishing such an organization.

An obstacle in the way of instituting an American scientific body of general character may be noted: Our country is one of magnificent distances, so that the cost of attending meetings or sessions is necessarily large; and equitable representation in a general body would seem to require provision for meeting costs of travel incurred by delegates. Doubtless this could be effected through *pro rata* assessment on the constituent associations, if the central organization were once well under way; and it is possible that the burden might be measurably diminished by migratory meetings, after the fashion of the associations for the advancement of science in different countries. The difficulty might perhaps be overcome by securing a foundation through donation, bequest, or otherwise; certainly it is not insuperable in these days of unprecedented scientific prestige, and of rapid increase in material prosperity through the applications of science.

Summarily, it would seem appropriate for American scientists to draw inspiration and suggestion from American statecraft as to organization; it would seem timely to start a movement toward the more comprehensive organization of American science in connection with the first great assemblage of scientific men in the western half of the country; and it would seem especially fitting to initiate the movement at the approaching meeting in Denver of that organization which would most properly serve as a nucleus for an American Senate of Science.

W J M.

SOME STRANGE PRACTICES IN PLANT NAMING.

In a recent issue of the *Bulletin* of the Catholic University of Washington, the distinguished professor of botany in that institution, Dr. Edward L. Greene, presents what he announces to be the first of a series of papers entitled 'Some Literary Aspects of American Botany.' It should be a source of gratification to the whole scientific fraternity that public attention has been thus called to the philological abuses so prevalent among the latter-day writers. This first paper contains a trenchant and forcible criticism of the titles applied to many recent botanical serials; and the author's commentary on such examples as 'Contributions to the Myxogasters of Maine,' and 'Contributions from the Herbarium of Franklin and Marshall College' is scarcely less instructive than entertaining.

It is a significant fact that this article by Professor Greene has already elicited a paper on a kindred topic, written by Dr. P. A. Rydberg and published in *Torreya* for June. As the latter author confines himself, however, to a discussion of personal specific names and their mode of construction, I may be permitted to offer a brief commentary on the subject of plant names in general, from both the orthographical and etymological standpoint.

It has always been a widely accepted principle of scientific nomenclature that a specific once published cannot be subsequently altered in form except upon 'reasonable grounds'; but there has been, and still continues to be, a wide divergence of opinion as to what constitutes reasonable grounds for such alteration. The author of the name has usually been allowed more latitude in this respect than other writers; and in past botanical literature there are consequently many changes in orthography, corrections of typographical errors, etc., made either by the author himself, or more