speculators. Independ science from politics and religion. Condemn rivalry between scientists living in hostile countries. Constitute a court of arbitrament where consults be answered, contentions for priority settled, and complaints of subservients nullified by their superiors attended to.

2d. *To protect investigators settled in countries where proper means be wanting.*

Afford them money, laboratories, books and instruments. Establish illustrated publications and print the works of any solicitor, whatever his nationality may be, provided that his writings be important. Scientists are generally obliged to waste their money in order to satisfy editors. Erect libraries and found agencies where scientific books and instruments be sold at the very lowest prices. Science must not remain within the grip of speculators (trading editors and book-sellers).

The Carnegie Institution must not benefit the United States only. Its views must be more absolute; it must protect also those who sacrifice themselves for truth in poor or ignorant countries. Genius is not the exclusive property of the inhabitants of a nation. Establish *international* competitions, rewards, explorations, laboratories, museums, observatories.

3d. *To depurate science. How to facilitate that.*

Make science more popular. Translate many books. Attack the abuse of the nomenclature of natural history (excess of newly discovered species, subspecies, varieties, upper families; unnecessary innovations, an exaggerate dedication to nomenclature *with a view to satisfy vanity*). Study such nomenclatures as to enable everybody to understand technicisms.* Attack the abuse of useless neologisms and their duplication. Unify as much as possible the languages, measures, unities and conventional signs. Publish bibliographies and distribute them freely and *gratuitously* through the world.

4th. *To advance science by a selection of studies.*

Point out the more general and important topics. Set degrees to the value of investigations, repealing that propensity to an isolated and invariable consideration of details (newly discovered subspecies, histological cuts, new stars, lower specialties).

In short, the Carnegie Institution shall not devote itself to discover, but to facilitate the means of discovering to genuine scientists, whatever their nationality may be, constituting itself supporter of the often abused rights of the disinterested investigator or wanting inventor.

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* A. L. Herrera, 'Nouvelle nomenclature des êtres organisés et des minéraux,' *Mém. Soc. 'Antonio Alzate,'* 1900–1902.

SHORTER ARTICLES.

THE FIRST USE OF MAMMALS AND MAMMALIANS.

In the *Popular Science Monthly* for September, 1902, I have stated that 'the first writer to use the English word mammals to any extent was Doctor John Mason Good,' but could not refer to any of his works earlier than 'The Book of Nature' (1826). His 'Pantologia' was not accessible at the time, but since has been put on the shelves of the library of the U. S. National Museum and on reference to Volume VIII. (1813), I find he formally introduced the English name then, under *Mammalia,* in the following words: "In English we have no direct synonym for this term; quadruped or four-footed, which has usually been employed for this purpose, is truly absurd, since one of the orders have [*sic!*] no feet whatever, and another offers one or two genera, that cannot with propriety be said to have more than two feet. We have hence thought ourselves justified in vernacularizing the Latin term, and translating mammalia, mammals, or breasted-animals."

In Volume XII., in the articles Quadruped and Zoology, Good also used the word *'Mammals' apropos* of the classification of Linnæus and in other places* and, also, in

* The volumes of the 'Pantologia' are not paged, the alphabetical arrangement having been thought to supersede pagination.

the article on 'Quadruped,' the adjective 'mammalian.'

I have already indicated that mammalians had been used in translation of mammifères. The Rev. William Kirby, in 1835, in the once famous Bridgenater treatise 'On the Power, Wisdom and Goodness of God as manifested in the Creation of Animals and in their History, Habits and Instincts,' declined to use the form mammals, but invariably used, as the English equivalent of Mammalia, 'MAMMALIANS.' Chapter XXIV. is entitled 'Functions and Instincts. Mammalians'; in this, it is explained, 'the whole body, constituting the Class, though sometimes varying in the manner, are all distinguished by *giving suck* to their young, on which account they were denominated by the Swedish naturalist, *Mammalians*' (II., p. 476). In a footnote to this statement Kirby adds, 'Cuvier calls them *Mammifers,* but there seems no reason for altering the original term.'

We may cordially endorse the sentiment of Kirby and, doing so, refuse to follow him in action and to adopt his modification of 'the original term,' and revert to the genuine original—mammals or, in the singular, mammal.

No instance of the use of the singular—mammalian—has been found in Kirby's work or in any of his successors', nor does the singular form mammal occur in the 'Pantologia.'

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THE STARTING POINT FOR GENERIC NOMENCLATURE IN BOTANY.

As the subject of generic nomenclature has been considerably discussed of late, perhaps it may not be inappropriate to call particular attention to this phase of it.

The uniformity and permanence of any system of nomenclature must depend largely upon the selection of a proper starting point. The result of the application of any system of fixing genera must vary as the initial date varies. Hence it is of the utmost importance whether we start with Tournefort, Linnæus' 'Genera Plantarum,' 'Species Plantarum,' 'Systema Naturæ' ed. 1, or ed. 10, as one zoological friend has suggested. The starting point must, of course, be fixed more or less arbitrarily, but we believe there are several rational considerations which should influence the selection. Judging from past experience, no date is likely to meet with universal approval at present; but if the date be chosen with proper regard for principles of justice, rationality, and practicability it will stand a reasonable chance of being generally accepted in the future and of leading to that uniformity and stability which are the great desiderata at present. Some one has suggested that to be in accord with these principles we must simply begin at the beginning. To this opinion we heartily subscribe. It is necessary, however, to define just what we mean by 'beginning' and to inquire whether there is anywhere in the course of the development of the conception of genera a point at which genera in anything like a modern sense can be said to have originated. We cannot agree with those who would attribute this 'beginning' to the ancient Greeks or Romans, or even to the mediæval and later herbalists, though they contributed much to the development of the subject and in many instances had rather well-defined ideas of genera. There is, however, no one of them that has defined and illustrated the genera of the vegetable kingdom in general in such a manner as to deserve the title of 'founder of genera,' or as to furnish a practical basis for generic nomenclature. This honor, we believe, is reserved for Tournefort, who in 1700, in his great work 'Institutiones Rei Herbariæ,' described and illustrated in a most admirable manner nearly 700 genera, including members of all the groups of the vegetable kingdom. Here we have, I believe, the earliest practical starting point for generic nomenclature. Many of the systematists of the past have tacitly recognized this fact by crediting Tournefort and his prelinnæan successors, Vailliant, Micheli, and Dillenius with genera established by them. This practice has, however, followed no particular or consistent method.

Let us consider for a moment the claims to recognition of the different initial dates