

would result from this course, which, like the others, cannot wisely be adopted.

There remains then but one suggestion. That is to use the old and established genera, which will work in perhaps ninety-five per cent. of the cases, and frankly call attention to the intergradations so that no one will be misled.

In this way we can heed the pleading of our friends to 'deal gently with established genera,' and not bring disastrous confusion into the already overworked synonymy.

Of course this solution is far from ideal, and will doubtless meet with no little criticism, but it is an honest one, and it is hoped will meet with the gratitude of those who plead with us to 'deal gently with established genera.'

It is to be feared that we have been too lenient with those who have been heedless in the matter of overturning existing classifications before they are certain that they have something better to offer. The old proverb, 'Be sure you are off with the old love before you are on with the new' is one all too apt to be forgotten by the enthusiasts who are unable to distinguish the difference between becoming great and becoming notorious. A little wholesome conservatism is by no means to be despised. A system of classification is not necessarily better because it is new, and we need to redeem ourselves from the charge, all too well founded, that we are capricious in tinkering with matters that need the most careful pondering, and an application of Davy Crockett's motto, 'Be sure you're right, and then go ahead.'

Of course all real progress must be encouraged, and it will never do to allow considerations regarding public, or even scientific, opinion to deter us after we are sure we *are* right. Conservatism by no means means stagnation, but it does mean deliberation.

But I have already trespassed too long upon your time without even touching on several questions of vital importance, such as the 'A. O. U. Code,' the best medium of publication, an authoritative tribunal for the settlement of such questions of nomenclature as could rightly be submitted to such a body, and other matters that I had hoped to discuss.

In conclusion, let me urge the necessity of hearty cooperation and a good understanding between systematists and other workers in the field of biological research. None of us can afford a contemptuous attitude toward any other who is honestly striving to extend the limits of knowledge, even though his faults are many. In early days out West there hung in a popular dance hall the suggestive notice: 'Don't shoot the orchestra. He's doing the best he knows how'! The same plea in thought, if not in language, we would enter in behalf of the systematist.

C. C. NUTTING.

SCIENTIFIC BOOKS.

Geschichte der Chemie und der auf chemischer Grundlage beruhenden Betriebe in Böhmen bis zur Mitte des 19 Jahrhunderts. Von ADALB. WRANY. Prag. 1902. 8vo. Pp. vii + 397.

Dr. Wrany's volume deals with the progress of chemical science and its allied industries in the kingdom of Bohemia from the earliest times to a comparatively recent period, in an exhaustive manner. The first section considers the development of alchemy, it being a part of the history of civilization; it records that the first Archbishop of Prague, Arnest von Pardubie, who became chancellor of the newly founded University of Prague, attended universities in Italy to study chemistry and alchemy; he died in 1364, being a century later than Roger Bacon, Albertus Magnus, and the noted physician Arnold de Villanova, but preceding Paracelsus by an equal number of years. The first Bohemian writer on alchemy was Johann von Tetzen, whose verses

on the philosopher's stone are dated 1412. The first person of high rank to practice alchemy was the Empress Barbara (wife of Emperor Sigismund, 1451) who acquired a high reputation.

The second section deals with the beginnings of pharmacy in Bohemia. Up to the end of the fifteenth century the art of the apothecary was chiefly connected with the merely mechanical preparation of drugs, but when iatro-medicine began to develop, chemical processes and medicaments acquired an important place in pharmacy; a certain Master Bandinus de Aretio (Aretino = Arezzo) is named as apothecary to Prague in a manuscript of the early part of the fourteenth century.

This second section contains an interesting and useful table giving the names by which a large number of pharmaceutical preparations were commonly known in the years 1585, 1699, 1750 and modern times (besides several intermediate years), which shows that Bohemia was little behind other nations in introducing chemistry and chemical nomenclature into pharmacy.

In the succeeding sections the author treats of the metallurgy and the technological industries of the sixteenth, seventeenth and eighteenth centuries (III.); of chemistry in educational institutions (IV.); of scientific researches and publications in the past one hundred and fifty years (V.), and progress made in all branches of chemistry up to the middle of the nineteenth century (VI.).

At the University of Prague the professor of botany gave the instruction in chemistry in accordance with the statute of 1654, and it was not until 1745 that a committee appointed to reorganize the curriculum reported in favor of establishing an independent chair, which was done the following year by the installation of Johannes Antonius Scrinci, the first professor of chemistry and physics in Bohemia. Scrinci at once gathered a quantity of apparatus, etc., at his own expense, and opened public lectures which attracted students from all parts of Bohemia as well as from adjoining nations. Among his successors should be named Josef von Freysmuth,

who was the first professor of general and pharmaceutical chemistry in 1812; under him modern rooms and fittings were introduced, but he died at the early age of thirty-three. Among the Bohemians who became eminent in chemistry may be named Plischl, Lerch, Balling (1805-1868), noted for his treatise on fermentation and his work on sugar, and lastly Ammerling (1807-1884).

A comment of the author is true of other nations than Bohemia; he writes: 'Analyses made in the eighteenth century, as late as the second half, have only historical value.' This remark is made apropos of examinations of the many mineral springs, whose healing qualities early attracted attention.

In the last section of this comprehensive and carefully arranged work Dr. Wrany discusses the introduction and growth of the coal industry, of assaying, of iron smelting, of the extraction and refining of the precious metals (especially in Joachimsthal), as well as the metallurgy of lead, mercury and other heavy metals. Nor does he neglect the historical aspects of the industries peculiarly connected with chemistry, as the manufacture of ink, of matches, of dyestuffs, of glass, ceramics, sugar and of the brewing of beer.

The volume is full of details not found elsewhere, and made accessible by an author and a subject index separately (why divided?).

Dr. Wrany is already known by his work on mineralogy in Bohemia, from a historical point of view (1896), but he has not survived the publication of the book under review. This book is clearly printed on good paper, but so wretchedly sewn (two stitches placed close together) that only with the greatest care in handling has it survived the examination made for this review, and it goes immediately to a bookbinder.

HENRY CARRINGTON BOLTON.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES.

THE annual meeting of the New York Academy of Sciences was held at the American Museum of Natural History on Monday, December 15, at 8:15 p.m., President J. McKeen Cattell presiding.