

SOME NEEDED REFORMS IN THE USE OF BOTANICAL TERMS.*

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I.

Seventy per cent of 700 examined species and varieties of "flowering plants," and 65 per cent of all the "flowerless plants," as given in Mann's Catalogue, have different names; 3646 "flowering plants" and 178 "flowerless" are given in the list. If to these percentages, the names of the genera and orders be added, there will be a total of more than 4000 different ones to be remembered, east of the Mississippi; and if collections are made elsewhere, the number becomes appalling. Only 14 names are used five times or more, and over 50 per cent are used but once; that is, among the flowering plants every other name is new, and among the flowerless two out of every three are new.

Many of the specific names describe the plants as being "like" some other plant or thing, and both Latin and Greek terms are employed to do this. Thus, over a hundred different specific names were found ending in *folium* or *phyllon* (leaf), and *oides* (like)¹. Among some other things noted are the following: Adjectives are frequently used in their different degrees of comparison without any meaning whatever; there is a great diversity in the use of proper names of persons, countries and States; specific words are frequently found differing only in their endings and not in their roots; one English word is often described by several Latin, with only a slight difference in meaning, and the question is whether one word might not be used in place of several given in a set²; Greek and Latin names exist with the same meaning; Greek and Latin terms are used to describe the same plant; double specific names, and similar specific and generic terms are common; occasionally a term is employed which denotes a specific difference far more common than it is used; and many compound and coined words of doubtful authority³ are scattered throughout the list—in all of which there is a great need of reform. The plan is suggested, at least in this country, and especially for use in the school-room, of having in the study of botany nothing but English words for the English-speaking race. If Greek and Latin, however, are to be retained, they should be kept in their purity. These reforms in the use of botanical nomenclature are urged for the great mass of tired students of both sexes, and their teachers, in the United States, rather than for the eminent botanists and horticulturists, who may remonstrate against any change which will rob the science of its choicest literature.

THE *Révue Industrielle*, in a recent number, gives a curious instance of the spontaneous galvanization of an engine piston, which took place at Cette, Hérault. The boiler having become much encrusted, some scraps of zinc were introduced to loosen the coating. Several days afterwards, the piston began to work with difficulty; when it was taken out, it was found to be covered with a thick coating of copper. This is supposed to have occurred from the particles of zinc carried with the steam into the copper steam-pipes forming a number of minute galvanic elements in combination with the copper; the vibration of the piston then attracted the copper molecules to itself, whilst the heat and the electric properties of the steam are considered to have facilitated their attachment to it.

* Read before the A. A. A. S., Cincinnati, 1881.

¹ With *folium*: *Alismæ, apii, alni, bellidi, delphinii-ilici, myrti, parnassi, primule, rosmarini*, etc., etc.; with *phyllon*: *tricho, argo, chryso, lepto, rhizo, lepto*, etc., etc.; with *oides*: *anemon-lunarin, scirp, hesperid, cheiranth, melilot*, etc., etc.

² Such as, *Vulgaris, officinalis, vulgaris, media, communis* (common); *sylvestris, nemorosa, sylvatica* and the like.

³ The paper gave a long list of words used by botanists which cannot be found in the lexicon, such as *grandiflora*, and other compounds of *flos*; *arabians, adveniens, cucullaria, variolaris, cataria, asprellum, lateri-folia* and other compounds of *folia*; *salina, atro-purpurea*, and others.

BOOKS RECEIVED.

THE ANCIENT BRONZE IMPLEMENTS, WEAPONS AND ORNAMENTS OF GREAT BRITAIN AND IRELAND, by JOHN EVANS, D. C. L., LL. D., F. R. S., &c. D. Appleton and Company, 1, 3, and 5 Bond street, New York, 1881.

As Dr. Evans admits, the period covered by the Bronze age cannot be fixed within a precise limit, especially for any particular country. Through the successive stages of civilization, when the Stone period gave way to that of the bronze period, and was succeeded by the Iron, a long course of years must have passed, and even in any particular district the change could not have been sudden.

There must, therefore, have been a time when in each district the new phase of civilization was introduced, and the old conditions had not been changed; the three stages of progress represented by the Stone, Bronze and Iron periods, like the three principal colors of the rainbow, overlapping and intermingling one with the other, through their succession.

In discussing the chronological position of the bronze-using period, the possible use of copper unalloyed with tin, cannot be overlooked; in fact the probability that native copper may have continued for a lengthened period before it was discovered that the addition of a small portion of tin rendered it not only more fusible but added to its elasticity and hardness, must be apparent to all. While dwelling on this point Dr. Evans points out that even after the advantages of the alloy over the purer metal were known, the local scarcity may at times have caused so small a quantity of that metal to be employed, that the resulting mixture could hardly be recognized as bronze; or at times the dearth may have necessitated the use of copper alone, either native or as smelted from the ore.

Of this Copper Age, however, but feeble traces are to be found in Europe, if, indeed, any can be said to exist, but in India important discoveries have been made of copper instruments; these, however, were accompanied with ornaments of silver, which appeared to mitigate against their extreme antiquity, as the production of silver involves a considerable amount of metallurgical skill, and probably an acquaintance with lead and other metals.

The most instructive instance of a Copper Age, as distinct from one of Bronze, is that which has been discovered in our own country, where we find good evidence of a period when, in addition to stone as a material from which tools and weapons were made, copper also, was employed, and used in its pure native condition without the addition of any alloy. The State of Wisconsin alone, has furnished upwards of a hundred axes, spear heads and knives formed of copper, and to judge from some extracts from the writings of the early travellers given by the Rev. E. F. Slafter, that part of America would seem to have entered on its Copper Age long before it was first brought into contact with European civilization, towards the middle of the sixteenth century. On some parts of the shores of Lake Superior native copper occurs in great abundance, and no doubt attracted the attention of the early occupants of the country, who undoubtedly availed themselves of its ductile property to produce spear-heads and other weapons.

To those who have supposed that iron, which is a simple substance and easily produced from its ores, may have been in use before copper; the author replies, that without denying the abstract possibility that in some parts of the globe such might have been the case, he considers that among the nations occupying the shores of the Mediterranean—a part of the world which may be regarded as the cradle of European civilization—not only are all archæological discoveries in favor of the suc-