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 per centages, 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* (leat), 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 set[2]; 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 authority[3] 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.

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

[1] With *folium: Alismae, apii, alni, bellidi, delphini-ilici. myrti, parnassi, primulæ, rosmarini*, etc., etc.; with *phyllon: tricho, argo, chryso, lepto, rhizo, lepido*, etc., etc.; with *oides*: *anemon-lunarin, scirp, hesperid, cheiranth, melilot*, etc., etc.

[2] Such as, *Vulgaris, officinalis, vulgata, 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: arabisans, advensis, 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-

cession of iron to bronze, but even historical evidence supports their testimony.

The study of this subject necessarily involves an investigation relating to the date when man first became acquainted with the methods of working the various metals, and the reader will find in this work a carefully prepared synopsis of all the evidences bearing on their disputed points. The introductory chapter describing this controversy will be found one of the most interesting and instructive in the book.

The great body of the work is devoted to an examination and description of the various forms of Bronze weapons and instruments which have been found in the British Isles, treating separately the different classes of instruments, intended each for special purpose, and at the same time pointing out their analogies with instruments of the same character found in other parts of Europe. To bring this department within the comprehension of all readers, Dr. Evans has presented five hundred and fifty superb wood engravings of specimens; thus the archæologist who possesses this work, finds himself, as it were, passing through a museum of Bronze antiquities, aided by the friendly guidance of one who is a master of the subject, and capable of pointing out important details and characteristics, even in the most ordinary implements, which, to the cursory observation of a student, would appear devoid of meaning.

Dr. Evans concludes this interesting work with a chapter on the chronological arrangements of the various types of bronze, and an examination of the various means at our command for fixing the *approximate* date and duration of the period. On the latter point, after what we have stated on the subject, no surprise need be expressed when we state, that Dr. Evans offers an opinion only with great reserve. Subject to this reservation, we find that he attributes eight or ten centuries as the total duration of the Bronze Period, placing the beginning some 1200 or 1400 years before the Christian era. It is questionable whether such an antiquity will meet all the necessities of the case, for as Professor Evans himself points out, it is difficult to believe that the Phœnicians, or those who traded with them, landed in Britain and spontaneously discovered tin.

This work will prove to be of the highest value to archæologists and to all who would trace the course of human progress to its earliest phases. Its general arrangement is most excellent, and adapted for practical work. In addition to a general index, a geographical and topographical index is presented, which greatly adds to the value of the work. The publishers have performed their part of the work most efficiently, and have produced a handsome volume, illustrated in the highest style of the engravers' art, which will in future be held as an authoritative work of reference, and a store-house of facts from which the student and specialist may draw material of the highest value.

IT has been resolved to invite the British Association to meet in Aberdeen in 1883. The invitation will be presented at the forthcoming meeting of the Association at York. The Association will meet in Southampton in 1882, and an influential local committee has already been appointed.

THE Government of India has declined for the present to award the prize of £100 offered for the best "manual of hygiene" for the use of the British soldier.

METEOROLOGICAL REPORT FOR NEW YORK CITY FOR THE WEEK ENDING SEPT. 3, 1881.

Latitude 40° 45′ 58″ N.; Longitude 73° 57′ 58″ W.; height of instruments above the ground, 53 feet; above the sea, 97 feet; by self-recording instruments.

AUGUST. AND SEPTEMBER.	BAROMETER. MEAN FOR THE DAY. Reduced to Freezing.	BAROMETER. MAXIMUM. Reduced to Freezing.	BAROMETER. MAXIMUM. Time.	BAROMETER. MINIMUM. Reduced to Freezing.	BAROMETER. MINIMUM. Time.	THERMOMETERS. MEAN. Dry Bulb.	THERMOMETERS. MEAN. Wet Bulb.	THERMOMETERS. MAXIMUM. Dry Bulb.	THERMOMETERS. MAXIMUM. Time.	THERMOMETERS. MAXIMUM. Wet Bulb.	THERMOMETERS. MAXIMUM. Time.	THERMOMETERS. MINIMUM. Dry Bulb.	THERMOMETERS. MINIMUM. Time.	THERMOMETERS. MINIMUM. Wet Bulb.	THERMOMETERS. MINIMUM. Time.	MAXI'M In Sun.
Sunday, 28	30.020	30.088	0 a. m.	29.990	4 p. m.	76.3	69.0	89	4 p. m.	75	4 p. m.	67	6 a. m.	64	7 a. m.	139.
Monday, 29	30.102	30.128	12 p. m.	30 032	0 a. m.	76.0	70.0	86	3 p. m.	74	5 p. m.	67	5 a. m.	66	5 a. m.	139.
Tuesday, 30	30.129	30.190	9 a. m.	30.086	5 p. m.	77.6	72.0	85	4 p. m.	75	4 p. m.	70	5 a. m.	68	5 a. m.	135.
Wednesday, 31	29.988	30.100	0 a. m.	29.900	12 p. m.	82.7	73.3	93	4 p. m.	78	4 p. m.	72	6 a. m.	68	6 a. m.	140.
Thursday, 1	29.823	29.900	0 a. m.	29.780	12 p. m.	81.0	72.6	87	1 p. m.	76	1 p. m.	75	6 a. m.	70	6 a. m.	131.
Friday, 2	29.786	29.800	9 p. m.	29.748	4 p. m.	73.3	69.3	78	3 p. m.	71	3 p. m.	68	12 p. m.	66	12 p. m.	97.
Saturday, 3	29.864	29.966	11 p. m.	29.800	0 a. m.	69.6	65.3	74	3 p. m.	68	3 p. m.	66	7 a. m.	63	7 a. m.	128.

			Dry.	Wet.
Mean for the week	29.958 inches.	Mean for the week	76.6 degrees	70.2 degrees.
Maximum for the week at 9 a. m., August 30th	30.190 "	Maximum for the week, at 4 pm 31st	93. "	at 4 pm 31st, 78.. "
Minimum " at 4 p. m., Sept. 2d	29.748 "	Minimum " " 7 am. 3d	66. "	at 7 am 3d, 63 "
Range	.442 "	Range " "	27. "	15. "

AUGUST. AND SEPTEMBER	WIND. DIRECTION. 7 a. m.	2 p. m.	9 p. m.	VELOCITY IN MILES. Distance for the Day.	FORCE IN LBS. PER SQR. FEET. Max.	Time.	HYGROMETER. FORCE OF VAPOR. 7 a. m.	2 p. m.	9 p. m.	RELATIVE HUMIDITY. 7 a. m.	2 p. m.	9 p. m.	CLOUDS. CLEAR, 0 OVERCAST, 10. 7 a. m.	2 p. m.	9 p. m.	RAIN AND SNOW. DEPTH OF RAIN AND SNOW IN INCHES. Time of Beginning.	Time of Ending.	Duration. h. m.	Amount of water	OZONE. 0 10
Sunday, 28	w. s. w.	s.	e. s. e.	94	½	3.15 pm	.543	.623	.679	79	48	81	3 cir.	o	o	-----	-----	-----	--	o
Monday, 29	e. n. e.	s. s. e.	s. s. e.	102	1	2.30 pm	.622	.650	.693	85	54	85	o	1 cir.	5 cu.	-----	-----	-----	--	o
Tuesday, 30	s. s. e.	s. s. e.	s. s. w.	103	2¼	9.50 pm	.682	.746	.704	90	64	73	10	o	3 cir.	-----	-----	-----	--	o
Wednesday, 31	w. s. w.	s. s. w.	s. w.	187	2¾	2.00 am	.631	.724	.746	80	48	64	3 cir.	o	o	-----	-----	-----	--	1
Thursday, 1	w.	w.	s. w.	179	1½	9.50 pm	.666	.705	.703	77	55	66	o	9 cu.	10	-----	-----	-----	--	3
Friday, 2	n. n. w.	e.	e.	114	1	1.40 am	.668	.678	.644	85	73	85	10	10	10	4.40pm	5.30pm	0.50	.05	o
Saturday, 3	n. n. e.	e.	s. e.	104	¾	4.20 pm	.536	.604	.564	84	72	79	8 cu.	4 cu.	8 cu.	-----	-----	-----	--	1

Distance traveled during the week	883 miles.	Total amount of water for the week	.05 inch.
Maximum force	2¾ lbs.	Duration of rain	00 hours, 50 minutes.

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