

THE AMERICAN CHEMICAL SOCIETY.
NORTHEASTERN SECTION.

THE fifty-fifth regular meeting of the section was held Friday evening, November 18, at the 'Tech Union,' Massachusetts Institute of Technology, with President W. H. Walker in the chair. About 150 members and guests were present. The following officers were elected for 1904-5:

President—James F. Norris.

Vice-President—Walter L. Jennings.

Secretary—Arthur M. Comey.

Treasurer—John W. Brown.

Executive Committee—Gregory P. Baxter, Edgar F. Billings, Robert S. Weston, Carl O. Weber, Lyman C. Newell.

Councillors—Charles R. Sanger, Charles L. Parsons, Albert E. Leach.

The annual reports of the secretary and treasurer were read.

President W. H. Walker opened the discussion of the subject of the 'Future Supply of Available Nitrogen,' by giving a résumé of the methods, by which the nitrogen, taken up by plants, is replaced by a fresh supply obtained from the air by chemical and electrical processes, describing the formation of calcium and barium carbamides, and the process and apparatus used for the direct conversion of nitrogen into nitric acid by using an electric arc.

Dr. George T. Moore, Director of the Laboratory of Plant Physiology of the U. S. Department of Agriculture, described the recent work carried on under his direction on the fixation of atmospheric nitrogen by means of bacteria, in which he described how the nodules formed on the roots of leguminous plants have been found to contain bacteria, which are able to fix the nitrogen of the air, and make it available for the use of the plants. These nodules are not formed naturally in all soils, owing to the lack of the presence of bacteria, and in order to make up for this deficiency, pure cultures of the bacteria in the nodules have been made and added to the soil. It was found if this was done, using the ordinary media containing nitrogen, that the bacteria were weakened, and no longer possessed the power of forming nodules, but if no nitrogen was pres-

ent in the media used, the new organisms possessed the power of forming nodules to a high degree, when the seed or ground in which it was sown was inoculated with the cultures. These cultures have been dried on cotton, and distributed with the necessary food and directions for their development to about 10,000 farmers during the past year. The results so far sent in have been very satisfactory, the crop being increased in almost all instances by the use of the cultures, in some cases as high as 1,000 per cent. The lecture was fully illustrated with lantern slides, showing sections of the nodules, specimen plants, etc.

ARTHUR M. COMEY,
Secretary.

THE ELISHA MITCHELL SCIENTIFIC SOCIETY.

THE 156th meeting of the Elisha Mitchell Scientific Society of the University of North Carolina was held in the chemical lecture room, Tuesday, November 8, 7:30 p. m., the following program being rendered:

PROFESSOR J. E. MILLS: 'Molecular Attraction.'

PROFESSOR H. V. WILSON: 'Experiments on the Development of the Skeleton in Sponge Larvæ.'

PROFESSOR A. S. WHEELER: 'The Theories of Dyeing with Special Reference to the Constitution of Cellulose.'

ALVIN S. WHEELER,
Recording Secretary.

DISCUSSION AND CORRESPONDENCE.

STYLE IN SCIENTIFIC COMPOSITION.

THE employment of a direct and perspicuous style is of immense advantage in scientific writing, perhaps more so than in other forms of literature. In scientific composition, as elsewhere, the art of writing well depends primarily upon *right thinking*, this being, as was said by Horace centuries ago, 'the beginning and fount of excellence'; and in scarcely inferior degree it depends upon *correct expression*. Concede with Pope that 'expression is the dress of thought,' and it follows that careless or faulty expression detracts as much from our appreciation of an author as slovenliness of apparel.

Superelegance of style is neither necessary nor desirable in every-day science, any more

than is fastidiousness as to the cut of working-clothes; but we have at least a right to expect accuracy of expression on the part of an author, and conformity to good literary usage, which means simply the 'consent of the learned.' Faults of beginners can be overlooked; but practised writers who plead haste as an excuse for uncomeliness are a reproach to the patricians of science, one of whom formulated the famous aphorism, '*Le style, c'est l'homme.*'

Any one can cultivate a fair style by taking sufficient pains, despising not the counsel of good masters, and, above all, by intimate association with the best authors. The classics are within reach of us all, in translated form at least, and one amongst them has never been surpassed for brevity, vividness and virility. We refer to Tacitus, of whom Senator Hoar ventures the opinion in his 'Autobiography,' that he is 'the best gymnastic training of the intellect, both in vigor and style, which the resources of all literature can supply.' His portrayal of Tigellinus, Nero's favorite, has been called 'the most damning epitaph ever penned by the hand of man'; its cold scorn is unsurpassed even by Byron's anathemas, such as make the 'Curse of Minerva' one of the most annihilating of poems.

Old Ben Jonson defines 'a strict and succinct' style as one 'where you can take away nothing without loss, and that loss to be manifest.' We learn from Ben how the best authors progressed in their beginnings: "They imposed upon themselves care and industry; they did nothing rashly; they obtained first to write well, and then custom made it easy and a habit. By little and little their matter showed itself to them more plentifully; their words answered, their composition followed; and all, as in a well-ordered family, presented itself in the place. So that the sum of all is, ready writing makes not good writing, but good writing brings on ready writing."

In geology, one of the most graceful of 'ready writers' was Hugh Miller, at whose style Agassiz marveled. Humboldt, Lyell, Darwin, all excelled in composition, as did our own Newberry; and the writings of many

well-known contemporaries are models of neatness and precision. In paleontology, Cope's fecundity was at the expense of good form, his most brilliant contributions being marred, as Osborn has pointed out, by confusion of terms. This serious fault is of frequent occurrence elsewhere, and we may be permitted in what follows to devote some attention to it.

Inaccuracy in the use of terms, employment of inappropriate methods of illustration, anything in short which tends to impair the vocabulary of science and render it less efficient, are grave errors; for it is an axiom that the advancement of science depends as much upon expression as upon investigation. Yet there is one class of writers who apparently hold the matter of terminology in light esteem, the whole 'business' of technical expressions and methods of illustration being conducted contrary to the principles of good usage. Physiographers are the class of writers referred to, and we hope to accomplish some good by remonstrating mildly against certain of their improprieties.

First, as to descriptive terms. It is evident that the physiographic articles of faith include a firm belief in the penury of the English language, and unsuitability of Saxon epithets; otherwise it is impossible to explain their construction of a technical vocabulary out of a rabble of words recruited from the uttermost regions—part alien, part hybrid, part argot,—

'Scotch, English and slang, in promiscuous alliance,

Something bad they must mean, though we can't make it out;—

That they're all *anti-English* no Christian can doubt.'

When a foreign author can be found like Reclus, who gives in one of his works no fewer than seventy-five dialect designations for mountains, or a compatriot like Mr. Hill, who has imported whole cargos of choice Castilian (not all of the saponaceous variety)—the entire assortment is appropriated with glee. Other departments of science that can boast of but few barbarisms, such as *Gegenschcin* for counter-glow in astronomy, *Dreikanter* for

faceted pebbles in geology, together with *Reibungsbreccia*, *roches moutonnées*, and the like, are put to shame for their poverty. Time was when none but the untutored savage called hills 'ispatinows' and 'pahas,' and the Brahmin was left in undisputed possession of 'doabs.' In those artless days we were wont to say 'hillside' and 'pot-hole' when needful, without blushing for the uncouthness of our mother-tongue, and in blissful ignorance of such refinements as 'cuesta' and 'remolino.' But now that physiographers, like Sganarelle, 'have changed all that,' we are overcome at the thought of our unletteredness.

Sometimes, however, even Chinook and Hottentot fail, and in such plight it becomes necessary to improvise new terms on the spot. Recent coinage from a strenuous mint has enriched us with 'can't bes' and 'not yetts'; may we not hope for 'has beens,' 'izzers' and 'come ons' (out west they have them already) to complete the sequence? Another bright medallion is 'inglenook,' though had the choice been left to us we would have preferred 'tiddledywick'; and there are similar jeweled expressions too numerous to mention.

Whether this sort of a polyglot-colloquial nomenclature accords well with the dignity of science we leave others to judge. But before physiographers can claim the authority of good usage they must get the majority of the people to agree with them. Ere that time comes, however, we may be permitted to set some store upon Spencer's 'Philosophy of Style,' upon Pope's great neo-classic essay, and upon the raillery of that master of satire, who says:

'Nor slight applause will candid pens afford
To him who furnishes a wanting word.
Then fear not, if 'tis needful, to produce
Some term unknown, or obsolete in use,
* * * * *
New words find credit in these latter days,
If neatly grafted on a Gallic phrase.'

In the second place, as to methods of illustration. Readers of SCIENCE, and of John Burroughs's articles in the *Century* and *Atlantic Monthly*, are familiar with the attitude displayed by our best critics toward the popular fetich of humanizing the animal kingdom.

The physiographic cult, *mirabile dictu*, aims at nothing short of humanizing the universe. The earth, to them, is a sentient being; land and sea are considered as alive; moral character an attribute of the elemental forces of nature.

Modern physiographic literature appears to be chiefly concerned with the working out of these and similar ideas *in extenso*. Everywhere is the aim to impart instruction by means of false analogy. The method of indirectness is exalted, the method of allegory, of wrong metaphor; the method that seeks to flatter minds that are quick to act on suggestion, that appeals chiefly to childish and savage intelligence. For the enlightened understanding resents having truth served up to it in spurious form. We tire of having things depicted not as they are, but grossly caricatured. In the end we lose all patience, as did old Ben when he complained that 'barbarous phrases often made him out of love with good sense, and wrong sense wracked him beyond endurance.' Then it is we wish writers would take Burroughs's advice to heart, who bids us to 'humanize facts to the extent of making them interesting, if you have the art to do it, but leave a dog a dog, and a straddlebug a straddlebug.'

Lest any suppose these strictures to be unduly severe, a few random illustrations may be offered in proof of the contrary. Certainly refined usage does not warrant the likening of topographic features to human nurslings, nor even to precocious infants,* as they have been likened. To refer a land surface to the 'puppy stage' would be ridiculous; but not one particle less so is the current series of technical terms taken from human infancy, adolescence, maturity and senility. The analogy is false, and therefore improper. Not less extravagant are the analogies taken from birth, rejuvenation and decease, including even violent death by 'drowning' or 'behead-

* The Grand Canyon of the Colorado is solemnly cited as an example of a 'precocious infant' in one of the best of modern text-books on physiography (Dryer's, 1901). Human growth-stages are even ascribed to heavenly bodies, as witness Professor Todd's account in 'The New Astronomy.'

ing,' a fate to which land and water forms are stated to fall prey. An example of a country that has apparently gone wading 'up to its knees' has been mentioned in a previous article (No. 498).

A favorite habit of physiographers is to represent rivers as wandering around with the intent of 'discovering' something, or 'attacking' or 'defending' themselves against a foe. 'Strategy' and 'tactics' are employed by a class of desperate characters known technically as 'pirates,' which, when successful, result in the 'decapitation' or 'capture' of the object of their 'assault.' The mysteries of 'sand-tactics' and 'island-tying' are revealed only to the initiated who have fully mastered this hierarchal language. We forbear to enumerate further examples, or to offer presumptuous comments on the nomenclature; but if any shall be so bold as to contend that it is dignified, and sanctioned by tradition and good taste, we may venture to entertain some doubt. C. R. EASTMAN.

HARVARD UNIVERSITY.

SPECIAL ARTICLES.

'BERYLLIUM' OR 'GLUCINUM.'

SINCE the Council of the American Chemical Society has requested the smaller International Committee on Atomic Weights to submit the question of choice between the two names 'beryllium' and 'glucinum' to the whole or larger committee in order that uniformity of usage may be secured it is evident that a considerable difference of opinion exists among American chemists as to the advisability of adopting the latter name.

The question is one of decided importance in indexing our chemical literature, and as I have had this matter brought continually to my attention during the preparation of a bibliography of the element, now complete in card form, I should like to present the very strong reasons for the universal use of 'beryllium,' at least as they appear to me. These reasons are two and may be summarized as (1) priority and (2) usage.

Priority.—It has been generally supposed by chemists who have not carefully looked into the matter that the name 'glucinum'

or at least 'glucine' originated with Vauquelin, the discoverer of the element, but this is not the case. In fact a distinction should be made between the terms 'glucinum' and 'glucine' for the former first came into use many years afterward when the metal itself was obtained and the real claim for priority must be a question between 'glucine' and 'berlyerde' from which the others were derived.

Vauquelin himself uses the clause 'la terre du Béril' exclusively in his first two articles on the subject in speaking of the new oxide he had discovered (*Annales de chim.*, 26, 155, and 26, 170). The term 'glucine' was proposed by the then editors of the *Annales*, Guyton and Fourcroy, in a note at the end of Vauquelin's first article and signed simply 'Redacteur.' Vauquelin evidently presented his results for the second time to the French Society of Mines, for they again appear in the *Journal des mines*, 8, 553. Here also Vauquelin uses only the clause 'la terre du Béril' but gives support to the term 'glucine' by a note at the end of his article as follows: "La propriété la plus caractéristique de cette terre étant de former du sels d'une saveur sucrée, les Cens. Guyton et Fourcroy m'ont conseillé de lui donne le nom de glucine de ($\gamma\lambda\upsilon\kappa\eta\varsigma$), doux, Cette denomination sera assez significative pour aider le mémoire; elle ne prendra pas dans son étymologie un sens trop strictement déterminé, et ne présentera pas d'ideas fausement exclusive, comme celles que l'on tire du nom de la pierre qui fourni le premier échantillon de la substance nouvelle, etc."

Vauquelin's adoption of 'glucine' appears from the character of the argument he puts forth to be at least half hearted. He first actually employs 'glucine' in his third article entitled 'Analyse de l'émeraude du Péron' (*Annales de chim.*, 26, 259), prefacing its use with 'on a donné le nom de glucine.'

The clause 'la terre du Béril' was translated into German as 'Berylerde' in the reprints of Vauquelin's articles and became the name used thereafter by all of the German and Swedish chemists who did much the larger portion of the work of developing the chemistry of the element.