

use of unfamiliar terms. If I may without offense take a concrete instance, I would suggest that the author of the interesting note, 'Ecological Problems connected with Alpine Vegetation' (p. 459), might find it to the advantage of his subject, his audience and himself if he would rewrite his paper without using the words ecology (or œcology), phytogeography, morphology, floristic, edaphic, and xerophyte, or their derivatives.

F. A. BATHER.

BOTANICAL NOMENCLATURE.

TO THE EDITOR OF SCIENCE: It occurs to me after reading Dr. Cook's truly melancholy account of the condition of nomenclature in botany, to point out that the vast majority of the tribulations from which that nomenclature is suffering would be nonexistent if botanists had simply been willing to stand by the rules accepted by practically all zoologists. All the terrible examples he cites from Hernandez drop out of sight at once on the application of the rule that vernacular names are not to be accepted. Ninety-nine hundredths of the rest disappear with the fixation of 1758 ('Systema Naturæ,' Ed. X.) as the date beyond which resurrectionists shall not disturb the tombs.

It is true that all bodies of men contain a certain proportion of freaks and that some may be cited among zoologists, and a certain number of persons who have not made a study of nomenclature as an art, persist in injecting sentimental considerations into their argument and practice.

But these as a rule have not succeeded, in this country, in disturbing systematic work or diverting attention from the goal of stability which most zoologists aim at.

With an international committee to decide the fate of the residue of preposterous names which no rules can eliminate, I think a comparatively few years would put zoological nomenclature on a solid and permanent basis. And if botanists would 'hark back' to De Candolle and rigorously apply his rules, they also might see the dawn of a better day.

WM. H. DALL.

SMITHSONIAN INSTITUTION,
April 26, 1902.

THE WILL OF THE PEOPLE, NOT OF AN OLIGARCHY.

PROFESSOR WILLIAM T. SEDGWICK, of Boston, in an address published in SCIENCE, January 10, 1902, 'confesses with sorrow' the lack of success of efforts to prevent the study of 'temperance physiology' as now required in the public schools of this country.

He first offers in defense of his opposition the fact that Horace Mann, in 1842, did not include temperance physiology in his essay on 'The Study of Physiology in the Schools,' but he omits to add the significant accompanying fact of history, namely, that the recommendations of Horace Mann's essay that 'physiology should be taught in the schools,' aroused in Massachusetts such a storm of bitter opposition from the doctors and men of official science, that the existence of the Massachusetts State Board of Education and its secretary, Horace Mann, were saved by only a hair's breadth from being entirely legislated out of office. But time has vindicated Horace Mann's recommendations, while his opponents are forgotten.

Sixty years have passed and Massachusetts, as well as every state in the United States and the National Congress, has made physiology and hygiene, which latter includes the nature and effects of alcoholic drinks and other narcotics, a mandatory public school study. Professor Sedgwick is now objecting, not to this study, he says, but to the legal specifications which have made it a success. First he objects to its being taught 'to all pupils.' He does not tell when or by what class of pupils he would have it omitted. In our country 'all pupils' of to-day are destined to be the sovereign people of to-morrow. Hence, looked at from the standpoint of the state, it can not afford that one single pupil should not receive the utmost instruction on this subject needed to fit that pupil for a future sovereignty of intelligent sobriety.

From the standpoint of the individual, we ask, From whose child shall this educational method for the prevention of intemperance be withheld? Shall it be from the children of the poor, the rich, the foreign-born or the home-born? We are answered by the command of the greatest of all teachers that the supreme

message for the prevention of evil and the establishment of right should be given 'to every creature' in 'all the world.' That inclusive command and precedent not only justify all pupils getting this education, but imply neglect of duty if it is excluded from any.

If Professor Sedgwick's objection is to the requirement of the study through specified grades, as his reference to the Illinois law implies, we answer:

The formation of right habits is the object sought. The child's habits are rapidly formed, new ones each year. It is therefore self-evident that progressive instruction which will guide in the formation of right habits should be given, especially during the primary and grammar years and the first year of the high school, in order to keep pace with and guide the child's development. The boy or girl who leaves school at any point in the school course with as much knowledge as he can comprehend of the laws of health, including those which warn against the use of alcoholic drinks and other narcotics, has thereby a most valuable equipment for the battle of life.

The diffusion of this knowledge in our country is now as universal as the schools. It does not, we grant, add to the value of brewing stock, but evidence is not lacking that it is proving of great value to the human stock in the increase of health due to better knowledge of sanitary laws, consequent lengthening of life, increased sobriety of the American workman, which sobriety is acknowledged to be one cause of the commercial supremacy of this country in the markets of the world, etc.

Professor Sedgwick says he was 'shocked,' 'much disturbed to find that an author had actually felt bound to weave in a lesson on alcohol with his discussion of the physiology of muscle, of nerve, of digestion, of vision and each of several other sections of the subject.'

Why should not the deleterious effects of alcohol on muscles be taught in connection with the study of the physiology and hygiene of the muscles? Professor E. Destrée, M.D., University of Brussels, by actual experimentation proved that the 'total work product

obtained from the muscle with the use of alcohol is less than that obtained without it.' Our boys and girls need to know this fact. Why should not the fallacy of the idea that alcohol is an aid to digestion be pointed out in connection with the hygiene of digestion, when Professor Chittenden (one of the Committee of Fifty) distinctly says of his experiments, 'The results obtained suggest a tendency toward prolongation of the period during which the meat remains in the stomach when alcohol fluids are present'? Why is not the treatment of the physiology and hygiene of the nerves the proper place for pointing out the effects of alcohol upon them when H. J. Berkeley, M.D., of Johns Hopkins University, reported as a result of the experiments he performed for the Committee of Fifty that alcohol 'possesses the quality of destroying the protoplasm of the nerve cells and annulling its functions'? Why not, in teaching the care of the eyes, mention the danger from the use of alcohol when the senior surgeon of the New York Ophthalmic Hospital, editor of the *Journal of Ophthalmology*, says, 'The respectable moderate drinker who never takes too much or oversteps the boundary line of decency, but goes round half full all the time, exposes himself to the risk of losing his eyesight, which in this case is incurable'?

To Professor Sedgwick's complaint that some laws require text-books on this subject for pupils' use and specify the amount of temperance matter they shall contain, etc., we reply:

The tendency of careless, unsympathetic school boards to fail in providing well-graded text-books on this subject, books that contain the matter the law requires taught as one source of information for pupils sufficiently advanced to use text-books on other subjects, induced the National Congress and many states legally to require that such text-books shall be provided. This requirement has led to the preparation of a valuable school literature by men of acknowledged scientific standing and to the revision of nearly all the imperfect books. Why should Professor Sedgwick complain? No one has proved these books inaccurate, nor that their use in the schools

has not contributed to individual and public good. The old, unrevised, ungraded, and therefore unindorsed books contain such teaching as the following, for children in primary grades: 'The tendon of Achilles is the tendon of the gastrocnemius and soleus muscle,' a statement as clear as mud to the primary child. The people want better books for their children and hence have so legislated that better books are produced.

Professor Sedgwick further charges me with being a follower of the teachings of Sir Benjamin Ward Richardson, M.D., of London (whom he styles an 'able but erratic physician') and with being 'the creator of this astonishing movement' for temperance education. The late Dr. Richardson was not only a Doctor of Medicine, but a Doctor of Laws and Fellow of the Royal Society and held many offices of distinction. I happened to have had enough previous study in chemistry to enable me to appreciate the reports of his experimental work on alcohol, and no one has proved his findings inaccurate. Although I never saw Dr. Richardson, he taught me much which I have tried to pass on.

As to being the 'creator' of this movement, I do not deny nor apologize for having tried to serve my country through helping to get this education for its children. But I hasten to say that without the aid of the hundreds of thousands of consecrated women in the Woman's Christian Temperance Union, the organized motherhood of this and other lands, whom it is my fortune to represent in this matter, without the cooperation of the good men in this and other countries, in the National Congress, state legislatures and parliaments, every state in the United States would not now have a temperance education law nor would the movement have become, as Professor Sedgwick admits, world-wide.

Professor Sedgwick, in referring to Commissioner Harris' connection with the advisory board of this department, says: 'As to the propriety of the commissioner's connection with this movement I make no comment.' The advisory board of this department consists of eleven members, six of them physicians, three of whom are professors in medical colleges,

three men eminent in education and two in ethics. The committee from this advisory board, whose duty it is to examine and pass on text-books, consists of five of the physicians mentioned above, one of the educators, two representatives of ethics, and the Superintendent of Scientific Temperance Instruction of the World's and National Woman's Christian Temperance Union. Dr. Harris, the National Commissioner of Education, and Dr. Barrows, President of Oberlin College, members of the advisory board, are not on its text-book committee. Hence there is no occasion for Professor Sedgwick's subtle reference to Dr. Harris' position on this board. The American people will feel it just and right that their national commissioner of education should be an adviser of a department of education which has been legally adopted by the whole people.

If Professor Sedgwick had quoted entire the recommendations passed by the Superintendents of Schools at their national meeting in Chicago last year, the readers of SCIENCE would have seen that their action was positively on the side of temperance instruction, and not mere 'guarded paragraphs' as he claimed. They repudiated Professor Atwater's teachings of the year before as to alcohol being a food, and put themselves squarely on record on the whole subject as the following paragraphs from their report, not quoted by Professor Sedgwick, show:

"The department of superintendence agrees cordially with the special advocates of the temperance cause in holding that everything which public instruction can do in the battle against intemperance ought to be done, and that both physiology and hygiene should be so taught as to leave in the minds of children and youths an adequate and proper knowledge of the effects of alcoholic drinks, stimulants, and narcotics on the human system.

"Since the last meeting of this department there has been considerable discussion of the question as to whether alcohol under any conditions is properly to be defined as an article of food. Medical authorities are quoted in support of both sides of this question, but no authority has been found to maintain that

alcohol is a food in the ordinary sense of that term. The question of the supposed food value of alcohol is a technical one for medical experts to determine, and not one which needs to concern the men and women who are engaged in the work of public instruction of children and youth. For them it is enough to know that its use as a beverage is injurious, and that all authorities agree in deprecating the formation of the drinking habit and in commending all practicable efforts through public instruction to promote the cause of temperance."

Professor Sedgwick appears to have fears that a writer who desires to publish an elementary text-book on physiology and hygiene, before he can obtain a publisher or a market may have to secure the indorsement of Mrs. Mary H. Hunt, etc.

Anybody can write a text-book on this subject as far as the Scientific Department of the Woman's Christian Temperance Union is concerned, but the mothers in any community have a perfect right to oppose their children studying that book, if, in their judgment, it fails to teach the whole truth against the most destructive of human habits. They have a right through organization to secure and protect this form of education for their children, and to appoint one of their number to act with them in searching for truth, and, aided by men of science, to refuse indorsement to books that do not contain the truth. I make no apology for its being my fortune to have been thus officially appointed, and woe is me if in this I fail in aught of my utmost duty, for history will show that organized motherhood in securing and protecting this education for all the children of this nation has prevented the greatest peril to our government of the people, namely, the lack of capacity for self-government resulting from the use of alcoholic drinks and other narcotics.

As to the publisher's part, I would say in this connection: The publisher is a business man who knows that his success depends upon his supplies meeting the demands of the market. If the condition prevails which Professor Sedgwick describes, it is good evidence that publishers have found that the American people do not want their children to study what the

publishers themselves call 'rum books,' and that the indorsement of this department is a guarantee to the public that the books bearing that indorsement are not of that character, but instead contain the truths the people want taught their children. Therefore, the writer who wishes to put a 'rum book' upon the market must find publishers who will ignore the law of supply and demand; or he must persuade the people to allow their children to be sacrificed to the Moloch of intemperance, either for his personal gain or to avoid shocking the sensibilities of scientific gentlemen who see no place in physiology and hygiene for warning against that disobedience of hygienic law which causes, as Gladstone said, more havoc to the human race than war, pestilence and famine.

No man has ever yet been able to present a reasonable argument for opposing the temperance education movement. The brewers and distillers of course can not imagine any other than a financial motive that could induce the devotion and labor that have brought this movement to its present position in this country and the world. Hence they charge, and have from the first, that it is a 'book job.' And in the absence of reasonable objection other opponents reiterate this liquor dealers' charge. Professor Sedgwick falls into line with them when he attempts to support his objection with a quotation from a letter written, he says, by a representative of a publishing house which charges that 'financial benefit' is the motive of the temperance physiology movement. On reading that, I at once wrote Professor Sedgwick asking for the name of his informant and whether that informant had submitted any evidence in support of his statement. Professor Sedgwick replied that he did not feel at liberty to give the name of his informant who, he says, 'did not submit any evidence bearing upon his opinion.' In other words, Professor Sedgwick makes this accusation public without examining the evidence for the same and without knowing, so far as he reports, whether any such evidence existed. If the man who made this charge is reliable, why should he be unwilling that Professor Sedgwick should

mention his name? As to the intimation of a mercenary motive, neither I, nor my advisory board, nor the constituency we represent are one penny richer for the sale of any text-book on this subject bearing our indorsement. Resort to such charges is evidence of conscious poverty of argument against this movement. As to the promoters of temperance education in the public schools being a 'self-constituted oligarchy,' as Professor Sedgwick says, we reply:

The Superintendent and Advisory Board of the Department of Scientific Temperance Instruction in Schools and College represent the World's and National Woman's Christian Temperance Union in their oversight of the study of temperance physiology in schools. Thus this department has for its constituency the largest organization of women in the world, who are banded together to secure, as one of their objects, the protection of this special education for their children. Hence, to call the work of this department that of a 'self-constituted oligarchy,' as Professor Sedgwick does, shows utter misapprehension of facts. 'A self-constituted oligarchy,' *i. e.*, 'power exercised by a few' who are self-appointed, could not write its ideas embodied in law on the federal statute books and those of all the states of this great republic. The laws requiring this study and whatever is necessary to its being taught represent the 75,000,000 American people who have decided that their children shall have this special education. It is simply futile to try to belittle this movement by efforts to make it appear as anything less than a national one which is rapidly becoming world-wide.

MARY H. HUNT.

World and National Superintendent of the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union.

TEMPERANCE PHYSIOLOGY IN THE PUBLIC SCHOOLS.

TO THE EDITOR OF SCIENCE: Mrs. Hunt apparently sees no impropriety in a law which requires temperance physiology, so called, to be taught to 'all pupils' in the public schools. If it does not seem to Mrs. Hunt, as it does

to me, obviously undesirable and improper to require such teaching of children in the primary and kindergarten grades, then I fear that nothing that I can do is likely to bring us into agreement.

Mrs. Hunt has much to say about 'organized motherhood,' by which she seems to mean the so-called 'consecrated women' in the Woman's Christian Temperance Union, and her letter may give the impression that it is not she but they, who have been chiefly instrumental in the text-book movement, etc., especially as she affirms, 'I make no apology for its being my good fortune to have been thus officially appointed.'

Although it is difficult to discover from the context to what exactly she was thus 'appointed,' a reference to Mrs. Hunt's quasi-historical documents cited in my Chicago address, and entitled 'An Epoch of the Nineteenth Century,' and 'A Brief History of the First Decade,' throws light upon this somewhat obscure statement; for upon page 6 of each of these documents Mrs. Hunt states that the 'Woman's Christian Temperance Union was organized in 1874,' and "In the autumn of 1879 I carried to the annual national convention of the Woman's Christian Temperance Union in session in Indianapolis, Indiana, what the Quakers would call 'my concern,' for thorough text-book study of scientific temperance in public schools as a preventive against intemperance. * * * A standing committee, of which I was made chairman, was chosen. * * *

"The idea of scientific temperance instruction as a part of the regular course of study in public schools was thus adopted by an organization [the Woman's Christian Temperance Union]. * * * Resolutions were passed and action taken which resulted in 1880 in the creation by that organization of a department to work for scientific temperance instruction in public schools and colleges, of which department I was made superintendent. * * *

"While this new affiliation brought neither help in methods nor the financial aid greatly needed for the execution of plans, it did furnish what was still more necessary, an earnest, enthusiastic clientage of active loyal Chris-