DISCUSSION

ARBITRARY EDITORIAL CHANGES IN SCIENTIFIC PAPERS

THE value of proper editing of scientific papers can hardly be questioned. The present writer would be the last to deny that many of his papers have been notably improved by judicious changes requested by the editorial staff of the journals in which they were published. Editors have in general the advantage of age, experience, impartiality and a knowledge of the audience the journal is designed to reach. I have no intention of attacking the procedures of scientific editors in general. However, when nearly every manuscript accepted by a certain journal has its style completely reworked, often without obvious improvement in clarity, there is evidently more room for question. I refer to the changes which are made in two journals in this country which carry many papers dealing with immunology and related subjects. Accepted manuscripts are altered, without consulting the authors, to conform to certain unpublished stylistic preferences of certain of the editors. Among these preferences there evidently figure prominently the addition of an adjectival ending to any word used as an adjective, or if this is not possible, putting a hyphen between the adjectival noun and the noun it modifies, and a ban on words derived from a Latin and a Greek root simultaneously, except in the case of very common words such as automobile. Thus "horse serum" will be changed to "equine serum," or perhaps occasionally "horse-serum," and "monovalent" will be changed to "univalent."

In many cases, no doubt, these changes do not have any particular effect on the sense, and are neither good nor bad. However, cases do occur in which it is open to question whether the meaning remains unimpaired by the change. The flavor of "proteic molecule" is not quite the same as that of "protein molecule," and few, certainly, speak of "proteic chemistry." It may be doubted if a "microscopic slide" is exactly the same as a "microscope slide." In some cases the change definitely seems to be at the expense of clarity. To cite a personal instance, whenever I see "viral antigen" I am irresistibly reminded of "spiral antigen," and thus of protein chains coiling and uncoiling, and the resulting train of thought completely distracts my attention from what the author was trying to say. The difficulties of precise scientific writing seem to be quite great enough without needlessly putting additional mental hurdles in the reader's way in the shape of novel adjectival forms. "Virus antigen" is traditional, it is understood, and I fail to see why it is not good enough.

Sometimes the change to an adjective would clearly modify the author's meaning disastrously. I need only mention "nitrogenous factor," "antigenic extract," "mortal curve," "chesty specialist," and "bloody group." A colleague has inquired what would become of "toothache." Would it be changed to "dental ache," or, to avoid mixing Latin and Anglo-Saxon, to "toothic ache"? The editors would doubtless reply that "toothache" is already one word. All right, but is not "horse serum" really just as much one word, even though we write it as two?

When it is clearly impossible to change to an adjectival form, the editors I am referring to generally insert a hyphen, as "microscope-slide," "phage-antibody," but it is not easy to see how the mere insertion of a hyphen, which has no effect on the pronunciation, is of any value except as a sop to the editorial conscience. Whatever the language may look like when written, it essentially consists of a series of sounds in the mouths of those who speak it, and no number of diacritical marks will change this fact. Some visual aids, such as capital letters and quotation marks, have their value, but one could hardly say the same of that extra hyphen.

If we wish to be really impartial in this problem, there are perhaps two main questions we should try to answer. One is to consider what kind of a language English essentially is and what are the probable trends in regard to the use of endings, and the other is, what are the preferences of those who are actually writing scientific English to-day? If a majority of immunologists are opposed to changing nouns to adjectives, then it would hardly seem justified for the editors of one or two journals to make such changes without authorization.

In so far as the first point is concerned, there can be hardly any doubt that English is a language which tends to use words in different grammatical connections without always changing their forms, and that this tendency has in the past few centuries been on the increase. Our language is descended from the highly inflected Anglo-Saxon. While the impact of French may have had something to do with the change, the theory of some students is that the complexity of case endings, conjugations, etc., eventually became too much for even the Anglo-Saxons themselves, and finding themselves unable to keep track of the multitude of endings, they gradually dropped most of them. Whatever the reason, English is one of the least inflected languages of Europe, but few

will maintain it has suffered as a result. Another great language, Chinese, has totally lost all inflections, but still seems to be able to cope with the task of expressing complicated ideas precisely.

As the opinion of an authority, we may quote the words of the great Danish philologist, Otto Jespersen, close student and lover of the English language, who stated:

> Besides, in a great many cases it is really contrary to the genius of the language to use an adjective at all. . . . *Birthday* is much more English than *natal day* . . . and *eyeball* than *ocular globe*. . . . Mere position before another noun is really the most English way of turning a noun into an adjective, *e.g.*, the *London* market, a *Wessex* man . . . a *Japan* table . . . a *Gladstone* bag, *imitation* Astrakhan. . . . The unnaturalness of forming Latin adjectives is, perhaps, also shown by the vacillation often found between different endings, as in *feudatary* and *feudatory, festal* and *festive*.[1]

If we examine the usage of great writers, we can find plenty of evidence that the use of nouns as adjectives is not foreign to the English language. Words like violet, marble, iron, etc., uncompromising as they sound, are all used as adjectives, and forms such as violaceous, marbly, ferrous, etc., have either been dropped, or retained in technical parlance only. Shakespeare says: "the Carthage queen," "Rome gates," "Tiber banks," "through faire Verona streets," "For canker vice the sweetest buds doth love," and Tennyson writes, "Every tiger madness muzzled, every serpent passion kill'd."

That this usage is not confined to poets may be seen by consulting Darwin, who says in the Origin of Species " . . . jackals and species of the cat genus. . . ."

The preference of present-day scientific writers can be studied directly. When I was writing a book on immunology, I took the opportunity of sending out questionnaires to about 30 persons who are either engaged in editing journals in which immunological papers often appear, or who have in the last few years published a number of papers on this subject. Each individual was asked to choose the form he preferred out of a choice of two or three. Not all replied, but the majority did, some with the addition of pencilled notes of encouragement. The pertinent data are shown in Table 1, where the numbers in parentheses show the number of replies favoring the form in question.

TABLE 1

pneumococcus polysaccharide(14), pneumococcal polysaccharide(5)
horse serum(22), equine serum(1), serum of the horse(1)
precipitin test(18), precipitative test(2), precipitation-test(5)
agglutination reaction(20), agglutinative reaction(3)
protein molecule(20), proteic molecule(2), molecule of protein(2)
diphtheria toxin(19), diphtheric toxin(3), diphtherial toxin(3)
inhibition reaction(14), inhibitive reaction(13)
inhibition zone(10), inhibitive zone(2)
antibody formation(14), antibody-formation(9), formation of antibody(6)
antibody specificity(18), antibody-specificity(6), anticorporeal specificity (0)
antigen molecule(14), antigenic molecule(7), antigen-molecule(3)
flocculation reaction(20), flocculative reaction(3).

It is clear that in most cases the majority were decidedly not in favor of adjectival forms. In regard to "pneumococcus" and "pneumococcal" the percentages run 74 against and only 26 for, but in other cases the verdict is even more conclusive. It will be noted that only one person interrogated preferred "equine serum" to "horse serum," and it may be definitely suspected that this was one of the editors responsible for the recent adjectival rash!

In view of the arguments based upon the obvious tendencies in the evolution of English as a language, the examples from classical authors and the clear indication of preference of those who are actually engaged in publishing the results of immunological research, may we venture to hope that in future the use of adjectives will be left to the authors as a purely personal matter? Surely, in this matter, as in others, we shall progress fastest, not by totalitarian compulsion, but by democratic cooperation.

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[1] "Growth and Structure of the English Language," p. 131, 3rd ed. Teubner, Leipzig, 1919.

GEOLOGY TEXTS FOR LATIN AMERICA

IN SCIENCE for July 2, E. Raymond Hall suggested that advanced scientific texts of North American origin be placed within financial reach of Latin American students. To every one interested in improved relations among Portuguese, English and Spanish-speaking Americans the suggestion is worthy not only of consideration but of immediate action.

A considerable proportion of Latin American colleges are the equivalent of North American junior colleges and in these only introductory courses are offered in many sciences. Among fields usually so treated is geology. The demand, both actual and potential, for English texts in geology is small, due both to small enrolments in such courses and to the prohibitive price of English texts. Frequently the text used is either Italian, German or French in origin. There is no reason why the study should be neglected, nor any reason why the attention of the beginning Latin American student should be turned toward the east, when it could be directed northward.