

DISCUSSION AND CORRESPONDENCE.

THE TITLES OF PAPERS.

THE writer is quite at one with Professor H. H. Wilder in his interesting protest, which appeared in *SCIENCE*, March 18. No doubt all in their younger days have indulged in the same pleasure of lengthy titles. Masters in rejuvenated science did the same; *vide* Humphry Davy's papers at the beginning of the nineteenth century. Descriptive titles appear to have good reason for their use. Mere verbiage is objectionable in the presentation of any scientific fact or principle, be it in the title or in the body of the paper. Excusing limitative prolix titles, not strictly descriptive, on the plea of modesty, will not answer, as the writers of papers realize as well as the readers that no science is complete.

Perhaps my experience is not very different from that of others. Scientific literature probably keeps pace in the rate of production with modern novels. One neither cares nor is able to read all, but he would like to know what is going on. Some forty or fifty scientific journals are placed on my desk every thirty days. All deal more or less with that division of science, chemistry, to which I have the honor and pleasure of devoting my humble labors. Even a specialist in the narrowest sense can do better work if he know something of other fields of activity. The undersigned finds it literally impossible to read all the articles in his own branch, much less labor through those of cognate subjects; consequently he must depend upon the title or the attached author's name in order to make a wise selection. An exceedingly interesting and valuable paper is published by an author whom the reader happens not to know, the title does not tell enough, the article is long, life is short and one passes it by. Numerous other causes preventing the reading of papers come to mind, but do not require enumeration.

Those journals which consist solely of abstracts, not opinionated reviews, come near offering a solution to the problem. This brings out another tale of woe. Numerous complaints have been made of the failure on the part of abstractors, however conscientious they may have been, to give really what

the author meant to emphasize. Therefore, the suggestion is pertinent that we have distinctive titles followed immediately by a condensed '*synopsis*' made by the author.

I am quite well aware that many papers in some journals have a '*conclusion*,' which one must hunt for, and such an arrangement is in accord with strict logic; but below is an explanatory paragraph the writer recently placed at the beginning of a series of some two dozen papers on work in a narrow field.

We shall adopt in reporting investigations upon the rare earths the plan of succinctly stating in an introductory paragraph the facts observed and conclusions arrived at. Those desirous of familiarizing themselves with the details may peruse what follows at leisure. Perhaps others may care to pursue a similar course. No doubt a wider dissemination of the actual results arrived at will come about and the labors of abstractors be lessened and more accurate. Expediency influenced literary style before the twentieth century.

The writer believes such practice will accomplish the objects aimed at by Mr. Wilder and himself, and is independent enough to continue it alone, unless the various editors are too strenuous in their objections.

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TO THE EDITOR OF *SCIENCE*: It is curious that Mr. H. H. Wilder's article (*SCIENCE*, March 18, 1904) should follow immediately on Mr. F. H. Knowlton's protest against a particular solecism. The two represent different sides of the same subject. Theoretically we must all support Mr. Wilder's plea for brevity, and the broad principle governing Mr. Knowlton's warning against ambiguity should also find general acceptance. These two principles are combined in recommendation (4) of the British Association Committee on Zoological Bibliography and Publication, namely, 'that it is desirable to express the subject of one's paper in its title, while keeping the title as concise as possible.' The difficulty, of course, is to be both precise and concise.

Brevity.—Mr. Wilder's longest example contains only thirty-seven words, and is excused

by its date (1665) and by the fact that all except the first word really constitutes a subtitle. The British Association committee alludes to a title of recent date containing ninety-one words. Mr. Wilder's precepts are admirable, but the heading of this letter shows how even his example may be bettered. A certain leading society persists in prefixing the useless 'on,' and forces an author to entitle his paper 'On the Tears of the Crocodile' instead of 'Crocodile's Tears.'

Clearness.—Modesty, Mr. Wilder would suggest, made an author say, 'Some Contributions to our Knowledge of the Morphology of the Guyascutidæ,' instead of 'Guyascutid Morphology,' and that same modesty, presumably, forbade him to suppose that the casual biologist might not know what a guyascutid was, and made him keep to himself the precise nature of his contributions. The enormous number of generic names and their synonyms often makes it impossible for a reader to tell the subject of a paper from its title. A specialist on echinoderms turned out at night to hear a paper 'On the Structure of *Apiocystis*,' only to find that it was an alga (if my memory serves) and not the Silurian fossil of that name. When a paper was published on the fluid of the body cavity in a certain animal the whole staff of the largest natural-history museum was unable to say what kind of animal was meant. In such cases the explanatory word may lengthen the title, but it is fully worth the space. Mr. Knowlton's examples of ambiguity are not so bad as these, but bad enough. Even the best of them is not really free from doubt; for example, what would an American botanist understand by 'The Flora of the Coal Measures. An Ecological Study'? This reminds me that a geological bibliographer innocently placed in his slip-catalogue the title of a work on 'Anthracite Coal Communities.' He has since learned that this too is an 'Ecological' study, neither geological, nor paleontological, nor zoological, nor botanical.

In fine, let the man of words, whether modest or 'intoxicated with the exuberance of his own verbosity,' remember that 'Brevity is the soul of wit,' and let the epigrammatist

make for himself no occasion to say, 'Brevis esse laboro, obscurus fio.' F. A. B.

MARGINAL AND RIDGE SCALES IN CEPHALASPIS AND DREPANASPIS.

IN two or three of his recent articles on *Tremataspis*, Dr. William Patten has affirmed his belief, contrary to that of all other writers, in the existence of 'numerous pairs of jointed oar-like appendages' in certain fossil ostracophores. His latest paper, in the December number of the *American Naturalist*,* is noteworthy for its development of the thesis previously advanced by him to the effect that *Cephalaspis* is provided with a 'fringe of jointed and movable appendages (25-30 pairs) along the ventral margin of the trunk.'

Happily, the author does not postulate the existence of imaginary organs, as was done in the case of *Tremataspis*; but this time actual, definite structures are pointed out, familiar to every one as marginal scales, and these receive the new name of 'fringing processes,' and are interpreted as appendages. Regarding these structures Dr. Patten states that 'there is little doubt that they are the antecedents of the lateral fold of vertebrates,' although in another paragraph it is remarked that 'whatever their significance may be, there is apparently nothing known in true fishes that is exactly comparable with them.'

The present writer can not agree with his esteemed friend that these marginal scales, as they are commonly called, are not precisely what their name implies, and fails to see anything remarkable about them, either in form, in attachment or in position. Dr. Patten is quite right in observing that they are marked with the same surface ornamentation as trunk scales, nor do they differ from the latter in any other respect except that their extremities are free. The identical structures, if occurring in the median line above or below, would be pronounced *ridge scales*; if along the fin margins, they would pass for *fulcra*; if along the angles of modern flat-bottomed fishes, for *marginal* or *lateral scutes*. It may be, in fact, regarded as a general

* 'On the Structure of the Pteraspidae and Cephalaspidae,' pp. 827-865.