

most courageous, the ducks were not to be denied, and daybreak found them still in possession. Yet, it was not until the sun was high in the sky that they felt it safe to leave their pool and rest on the edge of the ice.

These ducks serve as the center of attraction for the thousands that daily pass through the Fenway; and as one studies them there seems to be an air of triumph about them as if conscious of having successfully combated the first and most severe thrust of King Winter.

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WANTED—A WORD TO REPLACE "BELIEVE"

For some years the writer has avoided the use of the expression "I believe" feeling that it did not adequately express the scientific attitude of mind. Belief is a religious attitude of mind and implies something which the person considers precious and immutable, which he is ready to defend, and for which he is willing to sacrifice even his life. There is nothing in the scientific attitude of mind corresponding to this. Our hypotheses and assumptions and so-called facts are subject to change over night and no one sheds a tear.

Not only does the word "believe" fail to express the scientific attitude of mind, but it is particularly unfortunate to use it because of the effect produced on the non-scientific persons. One reason why the rabid fundamentalists fail to understand the scientist is that they have no adequate conception of our mental attitude in such matters. Their whole attitude of mind is one of belief and they naturally assume that our attitude is similar. They assume that we hold to the theory of evolution as they hold to the (theory of) atonement. Under these circumstances, for us to continue to use the word "believe" simply confirms them in their error.

However, when one attempts to eliminate the word from his vocabulary he finds that it is a very convenient word and one for which it is hard to find a substitute. It is widely used and well understood by the people in a rather loose sense. It is widely used because the corresponding attitude of mind is so universal; it is used in a loose sense because religion has so largely lost its meaning. We who have found the better way still continue to use the old words though we have been warned about putting new wine in old wine skins.

It certainly would be a great improvement if we could find an adequate substitute and even if we can not, it is desirable to eliminate the word from our

vocabularies even at the cost of some circumlocutions. If any one can suggest a substitute please speak up.

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THE PRONUNCIATION OF RESEARCH

As pointed out by R. H. Smith, in the issue of January 20, 1928, the average scientist is likely to have certain foibles in pronunciation. Even more annoying to me than the mispronunciation of "data" is the mispronunciation of "research." There was a time when I used to pronounce this word correctly, with the accent on the last syllable, but overwhelming usage seems to place the accent on the first syllable.

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SCIENTIFIC BOOKS

Handbuch der Paläobotanik by MAX HIRMER, with Chapters by Julius Pia and Wilhelm Troll. vol. 1: *Thallophyta, Bryophyta, Pteridophyta*. 624 pp., 817 figs., R. Oldenbourg, Munich and Berlin, 1927.

THIS pretentious work has the usual merits and defects of such an undertaking. It starts off with a rather good 30 page discussion by Pia on methods of preservation. The Thallophyta are also treated by Pia, who probably knows more about the fossil forms than any other living student. This is gotten into 106 pages and is on the whole very well done, although some sections such as that on the Diatoms are too brief to be of much service.

The part on Bryophyta is by Troll and occupies but 9 pages. It is not at all notable and the author does not seem to be familiar with the literature, as many fossil forms are missing. For example no fossil mosses are recorded from North America.

The bulk of the volume, nearly 550 pages, is devoted to the Pteridophyta. As conceived by the author, the term Pteridophyta is quite as broad and comprehensive, and consequently as meaningless as the term Thallophyta. One might forgive the author for not having heard of several more or less valid proposals for segregating the diverse assemblage included under the term Pteridophyta if only his ears were not so keenly attuned to such, to the reviewer, ill advised proposals as the group Protoarticulatales, suggested recently by a fellow countryman.

The Pteridophyta are segregated in 6 main stocks which unfortunately are given with the *ales* endings universally applied to groups of ordinal rank by botanists. These 6 stocks are Psilophytales, Lycopodiales, Psilotales, Articulatales, Cladoxylales and Filicales, the first four microphyllous and the last