

to my attention is the paper by Bessie Goldstein in the *Torrey Bulletin*, in which she shows that the reports of the occurrence of binucleated cells by Hutchinson and by Beer and Arber were due to the observation of cells with cell-plates in polar view.

A limited number of high-class criticisms written for the sole purpose of criticizing are undoubtedly beneficial. This applies especially to books and papers accepted for publication by non-scientific editors. But I for one do not feel the need of further burdening our already over-taxed publication facilities with fault and flaw finding Philippias which add nothing to the sum total of human knowledge. *Botanical Abstracts* supplies us with satisfactory reviews of all papers. Is it not well that *ex cathedra* critical effusions are giving place to the reinvestigation of critical problems?

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EVOLUTION AND THE BIBLE

UNDER the above caption, Dr. Ira D. Cardiff, in *SCIENCE* of July 31, very properly points out that many of those who are coming forward to the defense of evolution are not scientists of any standing. Probably some of those defending the Biblical account of creation are not scholars of any standing. Debates will undoubtedly frequently be held by people of little or no training in either of the fields that they are discussing. Votes taken by audiences listening to such debates are nothing more than expressions of opinion on the efficiency of the individual debaters, but that is true of debates on practically all subjects, and there is in it no serious danger either for science or religion.

It is quite as foolish for a specialist in religion to attempt to criticize and to analyze scientific subjects with which he is not familiar as it is for a scientist to attempt to criticize and analyze religion or the Bible unless he is thoroughly familiar with the subject.

Many scientific men of good standing in their specialties are quite ignorant of closely related scientific fields, and grossly ignorant of the history and philosophy of religion. There are many others, however, who while they have become great specialists have also given as careful study to other unrelated fields. I happen to know quite a number of the scientists of high station referred to by Cardiff as having done harm to science by their statement that there is no conflict between science and religion, meaning presumably the Christian religion in its broadest sense. I think it may be fairly said that their statement represents the conviction of a very large number if not the majority of scientific men with whom in the past

thirty years I have had occasion to discuss this subject. There can be no conflict between truths in the two fields. No scientist will refuse to recognize truth wherever he finds it. I am glad the "scientists of high station" had the "moral courage" to make the statement they did.

Mr. Cardiff is doing the real harm to science by taking an unscientific attitude toward religion.

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I can not help thinking that Dr. Ira D. Cardiff, in his letter (*SCIENCE*, July 31, p. 111) on "Evolution and the Bible," is really quite off on the wrong track.

The first chapter of Genesis is not in the least "primitive Jewish folk lore"—though most of the second chapter pretty certainly is. But that "Elohism" first chapter, in its present form, is probably nearly as late as Aristotle's day, and, on the whole, fair Mediterranean science of its time. The weakness of the fundamentalist argument is that it reads into this by no means absurd account of creation various ideas that are not there at all. The way, then, to meet his demand that we shall "take the Bible literally" is to take him at his word and do precisely that. Do this—with a good dictionary—and it immediately appears, that although, naturally, Genesis I does not support "Darwinism," neither does it any more support the "Linnaeanism" which the anti-evolutionists read into it.

I do not happen to know how skillfully this Mr. Cantrell may have handled his case before an audience; but I do think he is pursuing a sound strategy. After all, the Bible does not support fundamentalism. Therefore, the way to beat the fundamentalist is to get him to read the Bible—which he rarely does, being too busy hunting up proof-texts.

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