



To the Editor:

The article on "Glass in the biblical literature" in the *JOURNAL OF CHEMICAL EDUCATION*, 30, 415 (1953), undertakes a study in the history of technology and culture which would be of some interest if it were sound. Unfortunately the authors seem to have collected most of their instances by using a concordance to the 1611 translation, with the result that the majority of their examples have nothing whatever to do with glass.

In many cases the original Hebrew or Greek word means simply "mirror." This is the case with regard to Job 37:18 (erroneously given as Job 7:18), I Corinthians 13:12, James 1:23, and Ecclesiasticus 12:11. Isaiah 3:23 may be another case but here there is a question of the meaning of the Hebrew word. Many recent translators supported by the context, the ancient Greek version, and similar words in cognate languages, render it "garments of gauze" or something of the kind, instead of "mirror."

Of course mirrors are now commonly made of glass, but students of biblical antiquities are unanimous in the opinion that such mirrors were not known in the culture in which the biblical literature originated. This may be quickly confirmed by a look at any Bible dictionary, or from the "Jewish Encyclopedia," which states (s. v. "mirror"), "In ancient times mirrors were invariably made of metal." The quotation from the "Jewish Encyclopedia" which the authors do make indicates explicitly that it is referring to talmudic times, a period several hundred years later than the latest biblical writings, with quite a different cultural background. It therefore affords no presumption that the mirrors mentioned in the Bible were glass.

Three other passages cited by the authors need comment. Psalm 56:81 refers to a bottle for tears which might possibly be of glass, but this is far from likely. On the one hand, the Hebrew word here is one which in all other cases means a skin "bottle," while on the other hand the small glass flasks which are sometimes supposed to be "tear bottles" were not dug up with labels on them and are more probably flasks for perfume. Furthermore, there is no evidence that such bottles, even if rightly identified as used for tears, were known to or used by the Hebrews. Again, despite the authors' assurance that the bottle in Psalm 119:83 is "evidently" a glass bottle, nothing of the kind is evident and the word is here rendered "wineskins" by more than half a dozen recent translators, including Dr. Solomon B.

Freehof (to whom the authors acknowledge some indebtedness), in his "The Book of Psalms," Cincinnati, 1938, p. 347. Another passage is II Corinthians 3:18, where there is no noun for "mirror" in the original but only a verb which may be translated simply "reflect."

To sum up, the only certain reference to glass in the Old Testament is Job 28:17 where wisdom is said to be as rare as glass. The only references to glass in the New Testament are those in Revelation. Here they occur in descriptions of scenes in heaven, so that in New Testament as well as Old the few real references point to the rarity of glass rather than to its "significant role" "in the scheme of living." The references given to the Talmud suggest the same point of view.

Studies such as this article which cut across our rigid divisions of the various fields of learning are to be welcomed, but those who undertake them should realize that they need to be really at home on both sides of the fence.

FREDERIC R. CROWNFIELD

GUILFORD COLLEGE
GUILFORD COLLEGE, NORTH CAROLINA

To the Editor:

It is good of Mr. Crownfield to call attention to the fact that some recent scholars deny that many of the references usually translated as "glass" actually mean glass. It may well be that the scholarship of the next generation will change in this regard to earlier interpretations. Biblical scholarship, based as it is on continuing discoveries in language and archeology, changes considerably from time to time.

Perhaps the only sure way to come to a conclusion as to whether glass was in fairly wide use in biblical times is on general cultural lines. There is no doubt that Bible lands were for many centuries under the control of Egypt and there can be no question that glass-culture was well developed in Egypt as early as the fourth millennium B.C. See Joseph Jacobs' article in the "Jewish Encyclopedia" on glass, Vol. V, p. 677. If there is anything that modern archeology is proving all the more strongly, it is the deep and persistent influence of Egyptian civilization over the Bible lands. If, then, the Egyptians had glass for millennia, there is an overwhelming presumption that the inhabitants of Palestine did, however much varying biblical scholarship may change its mind about certain individual verses.

ELROSE R. SILVERMAN

ALEXANDER SILVERMAN

UNIVERSITY OF PITTSBURGH
PITTSBURGH, PENNSYLVANIA

To the Editor:

"What did you do in lab today?" I once asked of a student taking an elementary chemistry course. "We proved the law of conservation of mass," he said, leaving me wondering whether to try myself, or to leave to his