Hence, to "diversification" may I add, according to Confucius, "moderation." I believe in an indirect form of diversification. When a professor becomes reasonably well established, he should not take on too many graduate students. With fewer graduate students, he can work on the long-shot (and perhaps more important) problems himself. Similarly, a research scientist should refrain from building his own empire and having too many assistants; otherwise he will spend all his time thinking up routine work to keep his technicians busy.

In educational curricula, we should allow the brightest students to diversify, but the average and mediocre students profit most from conventional and tested educational techniques. Diversification for its own sake can go too far!


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## Dimethyl Sulfoxide Toxicity

Sack's report (28 Oct., p. 543) and recent challenge to those of us who have reported toxic effects of DMSO to animal eyes (New York Academy of Sciences conference on dimethyl sulfoxide, March 1966) is certainly justified. High doses of most any effective pharmaceutical will produce some form of toxicity in small animals.

We have just completed a study in rabbits (2nd International Symposium on DMSO, Vienna, 8 and 9 Nov.) using amounts comparable to those commonly recommended for human therapy. Topically applied DMSO, of a quality recommended for human use and at a dosage of 0.1, 0.5, and 1.0 g/kg per day, failed to produce any retinoscopic changes after 11 weeks of therapy. Weekly biomicroscopic examinations revealed no lenticular change at any concentration after 8 weeks therapy and only the slightest suggestion of any early DMSO effect after 11 weeks when the dosage was 1.0 g/kg per day, which is approximately five times the usual dosage for studies on humans. Oral consumption of the same low dosages were essentially the same as those described above, except that the biomicroscopic changes were observed a few days earlier.


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## UFO's: Dimensions and Speed

Seaman's report of a UFO sighting (Letters, 2 Dec.) is typical of most I have seen on this topic—his conclusions do not follow from his observations. In particular, the diameter of the UFO could not have been estimated, in feet or in meters, without further data. Nor could the UFO's speed, whether phenomenal or not, be determined.

It is fair to assume that stereoscopic vision is of no use beyond 20 or 30 meters, and that no radar or sonar was used to determine the distance to Seaman's UFO. The only clues in this sighting are, therefore, the angle subtended by the object and the angular rate of motion at the observer's position. This information alone does not determine the linear dimension or the linear speed of the object.

There remain, so far as I can see, only two kinds of dimensional information. One is stadiometric: if the size of the UFO is known, as, for instance if UFO's were known a priori to be of a certain diameter, or if the P-38 pilot had sighted a P-38 of dimensions known to him, then the distance to the object could be determined. The other is ranging: if the distance to the UFO were known within limits set by occlusion of other objects at known distances, then the diameter of the UFO could be determined from its subtended angle. However, Seaman's UFO was "on the horizon about a mile away." Had the UFO occluded an object at a known distance, it would have been possible to set an upper limit to the UFO's distance, and hence to its diameter. Or, had an object at a known distance occluded the UFO, it would have been possible to set a lower limit to its size. Even the deceptive "occlusion" by haze is ruled out in this report for it was seen in the "crystal-clear afternoon."

Lacking any information whatsoever about a linear dimension, no other linear dimension or linear speed can be deduced from visual clues. Since a slowly-moving object traverses the visual speed at an unlimited angular velocity if close to the observer, I am at a loss to interpret a "phenomenal" angular rate. Nor do I read here any support for Seaman's reference to "machines."


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