

# Letters

## On Un-American Science Reporting

The views expressed by your contributors are, of course, their own, and hence, in a given reader's opinion, may be biased or inaccurate or both. This is the essence of free speech. But one has the right, I believe, to expect factual material to be reported truthfully and objectively, without sneers and without slanting. Such is not the case in the news article published in the 1 July issue [*Science* 132, 24 (1960)] entitled "Un-American Science." The facts as stated are false and misleading. Richard Arens, staff director of the House Committee on Un-American Activities, is reported as having "enemies" who seem to be making progress in getting his job. The reason for this happy situation, as your reporter sees it, is that Arens has been helping W. P. Draper, a New York millionaire, make certain grants, the purpose of which is to prove the Negro mentally inferior to the white, and eventually to work out a plan to send American Negroes back to Africa. Your reporter asserts with poorly concealed glee, that although Representative Walter is, for some reason, not greatly excited, Speaker Rayburn "appeared" to be "extremely upset" by Arens' activities in behalf of "un-American science" and that "it is believed that Arens will no longer be staff director when the next Congress convenes."

Now this stuff is a queer mixture of truth and falsehood. It is true that Arens has enemies, as has every patriotic American who comes out publicly and courageously against subversion, even when found in high places. It is also true that Representative Walter is not concerned about Arens' connection with Draper. It is false that Speaker Rayburn is greatly "upset"; and unfortunately for your reporter's peace of mind, it appears as though Arens will continue as staff director of the Un-American Activities Committee for some time to come.

Your reporter's story is even more reprehensible in its references to W. P. Draper. Draper is interested in racial differences, and he would like to see our present immigration laws remain on the books. He is not interested in "proving" the Negro mentally inferior to the white, and he has never proposed a plan for sending Negroes back to Africa nor does he advocate such a scheme.

Draper has made several grants for research in the general area of race relations. His reasons are twofold. First, he believes that objective, unbiased work on racial matters is impossible in those university departments where the

equalitarian dogma has been accepted as a basic premise. And secondly, he believes that young men of independent mind hesitate to publish results showing racial differences for fear of reprisal from the almost fanatic believers in racial equality. To those who have experienced the vaunted "tolerance" of the dedicated "liberal," neither of these propositions will seem to be extreme. Grants for research have been made and work is in progress. In no case have any strings been tied to these grants with respect either to method or results. I know this to be true, as I have placed several grants myself.

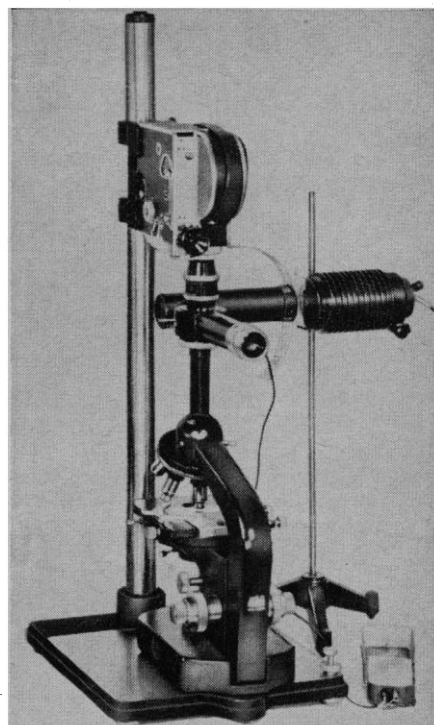
Apparently, your reporter took the "facts" for his story from a news item published some months ago in a Midwestern newspaper by a feature writer who wanted to discredit the Un-American Activities Committee. No attempt, obviously, was made to check the accuracy of these scurrilous statements. As a result, his article is a snide affair in which the editors of *Science* can take little satisfaction.

HENRY E. GARRETT  
1872 Winston Road,  
Charlottesville, Virginia

## Education and Research

It seems to me that Sander Rubin [*Science* 132, 46 (1 July 1960)] has inadvertently put his finger on the crux of the problem with his statement: "The primary mission of a college is to educate its students, not to conduct research." This is a distinction that is all too frequently made and one that is, in my opinion, false. Certainly in the physical sciences (the only area in which I can claim special competence) one of the things that every student should learn is that the sciences are not a static thing to be learned once and for all, but a continuously growing thing in which new developments require periodic major overhauls of our ways of looking at, and understanding, the universe around us. One of the most important things that a young person can learn in school is the necessity of keeping up with his field, and probably the most important things that such a young person can learn in school are the methods of study and the habit of study which make it possible for him to do so. These are things that, I think, can be really learned only in an atmosphere in which some research is actually going on.

Although I can personally certify to the necessity of these lessons only in the physical sciences, I strongly suspect that it would do no harm for the liberal arts majors to learn them too, at least in the areas of economics and po-



## For unparalleled versatility in MICROSCOPY

The Wild M20 microscope is without a peer in the realm of microscopy. This superb example of Swiss craftsmanship and precise optics provides almost unbelievable versatility for both research and scientific exploration.

Available with sextuple nosepiece, built-in 20-Watt illumination source, beam-splitting phototube for binocular focusing during photomicrography... as well as a full range of custom attachments for all observation methods... the Wild M20 is unmatched as a General Purpose or Research Microscope.

Attachments include the Cinetube (shown above), Camera II, Universal Lamp, Episcopic Equipment and Phase Contrast.

The Wild Cinetube, designed for use with any 16mm movie camera having 50mm or 75mm focal lengths, permits critical focusing on the specimen while actually exposing film. It contains two, built-in, beam splitters together with a photo electric cell for exposure determination (with a galvanometer) and an internal projection tube for titling or designating pertinent footage.

Your consideration of the Wild M20 will prove most rewarding. Write for Booklet M-20 today.

\*The FIRST name in Surveying Instruments, Photogrammetric Equipment and Microscopes

**WILD**  
HEERBRUGG INSTRUMENTS, INC.

Full Factory Services

Main at Covert Street • Port Washington, New York  
Port Washington 7-4843

In Canada  
Wild of Canada Ltd., 157 MacLaren St., Ottawa, Ontario

litical science. It has become almost a platitude that the physical sciences have progressed, in recent years, at a rate astronomically greater than the rate of progress shown by the economic and political sciences. I believe one reason for this may be that the nonphysical sciences are too often taught as immutable truths, not subject to continuous re-examination and re-evaluation as a result of experimental tests—that is, research.

CHARLES F. ROBINSON  
*Consolidated Electrodynamics  
Corporation, Pasadena, California*

May I comment on the statement of Sander Rubin about my "position" in the matter of teaching and research? He stated only half of it—and half a position is worse than none—when he noted that I claimed "any scholar not doing research simply cannot be a fully effective teacher." I also claimed—and neither half is complete in itself—that any scholar not immersed in teaching may have great difficulty in being a fully effective research worker. The point of my letter was not to take sides or to state an ideal but to propose that side-taking in this issue is tantamount to missing the point.

Some scholars prefer teaching, others research; some cannot make a sensible dichotomy. Whatever the case, to prefer one to the *exclusion* of the other may turn one aspect of scholarly activity into a mere technical competence like watchmaking or ghostwriting.

The deeper question is whether we want our universities and colleges (unlike our secondary and preparatory schools) manned by scholars or by Mr. Chipsets. The original editorial and my letter [*Science* 131, 71, 1282 (1960)] came down firmly on the side of scholars. The ultimate question may be whether a university should "give" an education by "good teaching" or create the kind of place in which an education is available to those who have sufficient interest and intelligence to take it.

PAUL BOHANNAN  
*Northwestern University,  
Evanston, Illinois*

### Shatter Cones and Their Origin

The shatter cones in fine-grained limestones and dolomites, described by Dietz [*Science* 131, 1781 (1960)] are merely a much-magnified version of the cones of percussion well known to archeologists. It is this conical or conchoidal fracture in flints and cherts that made flint-working possible and started mankind on the technological exploitation of his environment.

Miniature cones of this kind are

perhaps best seen in plate-glass doors and windows, where they have been produced by the impact of pebbles thrown up by passing cars, or bullets from air rifles or .22's in the hands of teen-agers. The apical angles of these cones are much blunter than in those shown by Dietz—well over 90° in all I have seen. This is presumably because of the lower impact velocity or lower energy of the pebbles, relative to that of a meteorite.

Cones of this perfection rarely if ever appear in worked flint, probably because man had no use for them. The impact of his hammerstone or flaking punch was deliberately localized near the edge of the flint block, so that a flake of controlled size and shape could be split off.

Surely somebody must have worked out the mathematical theory of shock waves in extended solids, such as a thick stratum of stone. Empirically, it can be seen that a greater impact produces sharper cones, that the conical wave penetrates deeper before being damped, and that at high velocities and energies the irregularities in the medium become a less controlling factor. Dietz speaks of shatter cones which have penetrated more than 12 meters in shale, a laminated stone, whereas impact cones are usually stopped by the layer of plastic in safety glass. Nevertheless, the phenomenon of conical fracture in stone cannot be considered one of great energies or velocities, except in so far as the size of the cone is concerned.

I do not recall having seen parasitic coning in flake surfaces in chipped flint. However, this is perhaps because of the distortion of the conical wave form and the different order of magnitude of the energies produced by a blow of a hammerstone and the impact of a meteorite.

The apex of the cone is ordinarily at the point of impact, and this cannot be the case with the parasitic cones. I presume that they develop where the main shock wave strikes some structural discontinuity in the stone, which initiates a new wave at that point. This suggests that where the apices of the presumed master cones are found below the surface of the rock strata, they may themselves be parasitic to a much larger cone with its apex at the surface, produced by the impact. Perhaps more logically, they may have been initiated at points along the front of some sort of spherical shock wave, if such forms exist.

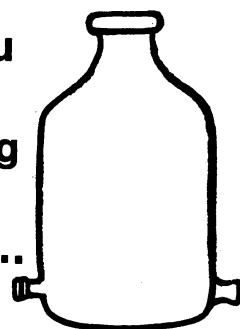
I question Dietz' conclusion that volcanic explosions cannot initiate shatter cones, though they may not be able to produce cones as large or as sharp as those in his illustrations. In any case, cones of volcanic origin should be produced with their apices pointed

Look what  
can be  
done to  
customize  
PYREX®  
bottles



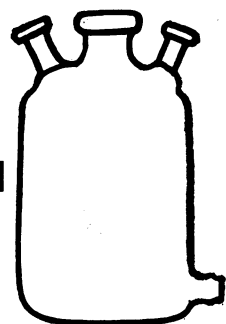
This is our Catalog No. 90350—a special bottle with outlet tooled for stopper. (See custom section of your PYREX catalog.) We list it in 2½, 3½, 5 and 12-gallon sizes. All take standard No. 12 neck stoppers and No. 8 outlet stoppers.

When you  
want  
something  
a little  
different...



Just ask. Our special customizing department will make such slight modifications as adding an outlet for tubing or a stopcock.

Or a  
great deal  
different



We can't imagine why anyone would want it, but we could also add several necks of different sizes, plus practically any number of special outlets.

The interesting thing to our customers is the great concentration of skills and facilities we can put at their disposal for quick manufacture of the most complex glassware. Naturally, we like to see requests for lots of a hundred or more of these specials. But we also welcome orders for as few as one.

You start by writing

Special Apparatus Section



CORNING GLASS WORKS

349 Crystal Street, Corning, N.Y.

CORNING MEANS RESEARCH IN GLASS