

Reports—Current Topics—Queries

Science Teachers Issue Global Plea

The following is a resolution adopted by teachers of science and mathematics who attended the first Institute on the Interrelationships of Science and Society, held in June at Knox College, Galesburg, Ill., under sponsorship of the National Science Foundation:

Whereas

1. The world's rapidly growing population will soon be too large for the earth to sustain;
2. The indiscriminate use of technology by society is leading to shortages of power sources, food sources, and irreplaceable natural resources;
3. The pollution of our land, air, and water deprives the people of health and the enjoyment of our country;
4. The high cost of excessive nuclear deterrence seriously reduces funds needed for health, education, and well-being; and
5. All of the above place severe strains on human interactions and on our social structures;

and whereas the members of the first Summer Science Institute on the Interrelationships of Science and Society are firmly convinced of the above and are committed to action in the solution of these problems;

be it therefore resolved that we, the members of said institute, hereby

1. Urge the President of the United States to
 - a. Exert leadership to enlist worldwide cooperation in problems of a global nature,
 - b. Exert leadership to commit the people of the United States to stabilize its population by the year 1980 as an example to the world, and
 - c. Encourage assessment of technologic innovations and problems by *ad hoc* groups composed of scientists, sociologists, economists, legal experts, and lay citizens;
2. Urge all teachers (particularly science and social-studies teachers) to educate themselves and their students as to the above problems; and
3. Urge decision-makers at all levels of government and other institutions to develop policy within the constraints imposed by the environment, natural resources, and the well-being of man.

Signed by Elaine M. Abels, R.S.C.J., Lake Forest, Ill.; Jerry J. Aldrich, Alden, Iowa; Francis E. Antonacci, Skaneateles, N.Y.; Darrell C. Bahm, Tacoma, Wash.; Peggy D. Baird, Peoria, Ill.; Carol A. Baumeister, Oak Lawn, Ill.; Grace Chou, O.S.F., Aurora, Ill.; Winston E. Cleland, Wilmington, Del.; Ronald G. Crampton, Omaha, Neb.; Laura M. Daniels, Winnetka, Ill.; Jerrald L. Daugherty, Park Ridge, Ill.; Glenn K. Detro, Greendale, Wis.; Paul E. Drangeid, St. Louis Park, Minn.; John L. Haraughty, Prairie Village, Kan.; Marybeth Harrington, C.S.J., Bristol, Conn.; Anna Landwehr, O.S.U., Shawnee Mission, Kan.; Marion L. Magill, Scottsdale, Ariz.; James D. Maloney, Jr., Cuyahoga Falls, Ohio; Imelda T. Marquez, S.L., St. Louis, Mo.; Raymond W. Merry, Brooklyn, N.Y.; Wayne R. Mikach, Pittsburgh,

Pa.; John Mudrak, Sharon, Pa.; Robert N. Patten, Wichita, Kan.; Alice M. Quinlan, Evansville, Ind.; Charles V. Raffay, Succasunna, N.J.; Clementina Rodriguez, Raymondville, Texas; Jack E. Sadler, Brentwood, Mo.; Charles E. Sauter, Park Ridge, Ill.; Fred C. Smith, Northbrook, Ill.; and Donald L. Williams, Scotch Plains, N.J.

IP-CFAA: Fixing and Preserving Reagent for the Use of Travelers

Some years ago we were studying the ears of grasshoppers. We wished to collect these insects while traveling under all sorts of circumstances and to preserve them with reasonably natural colors, while still having the tissues fixed for slide preparation. We needed a killing agent that would snuff out the lives of these rather large insects rapidly, for otherwise when dropped into liquids they kicked violently and badly damaged other specimens. Because we expected to be stopping at motels on our collecting trips and were traveling in our own car, we wanted a reagent that if spilled would evaporate completely, leaving no stain. And, because we were not going to be at home base, we wanted to be able to buy all the chemicals in local stores without the need for special identification or licenses.

Out of these requirements came CFAA. Since its first development, about 1958, we have found it to be excellent for many fixing and preserving uses. We describe it here in the hope that it will be useful to others who take classes on field trips or wish to collect, fix, and preserve animal specimens without risk of staining their own or others' car, furniture, or floor.

We started with a standard formalin-acetic-alcohol (FAA) mix, widely used in routine histologic fixation or for fixing small animals, such as parasites, for whole mounts. To increase penetrating power and particularly for our insect work to speed up the killing rate, we added chloroform. After experiments with a great variety of formulas, the following was selected as meeting all the requirements: chloroform 100 ml, ethyl alcohol (95%) 450 ml, formalin (40% formaldehyde) 100 ml, glacial acetic acid 20 ml, and water 350 ml. This we call CFAA. (The total, 1,020 ml, actually gives somewhat less than a liter, because of "shrinkage" of ethyl alcohol with water.)

There is a difficulty with this: ethyl alcohol is expensive unless obtained with special permit, and in many places it is hard to come by without a license. So we tried substituting isopropyl for ethyl alcohol, because isopropyl alcohol is available in all drugstores. (One can even buy rubbing alcohol, which usually is compounded mainly of isopropyl alcohol.) This forced some changes in proportions