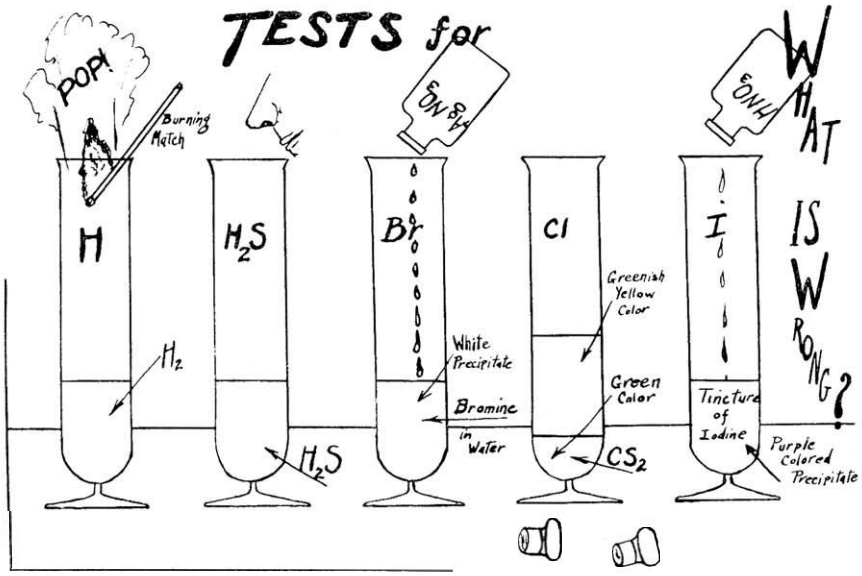
CONTEST FOR HIGH-SCHOOL AND FRESHMAN STUDENTS

On this page is reproduced the sixth of a series of drawings prepared for us by Prof. John J. Condou of William Nottingham High School, Syracuse, New York. Write a brief statement, telling what is wrong with the picture. Use complete sentences; do not merely list mistakes. Type your manuscript, if possible; if not, be sure that you write legibly. Type or write on one side of the paper only.

Make a correct drawing, showing the picture as yon think it should be. Use black India ink and white drawing paper. (If you believe that you can draw better on coördinate paper, white paper with blue rulings must be used.) Drawings should be approximately 4″ X 6″ or 8″ X 12".

Place your name at the top of each page of your manuscript and at the top of your drawing.



On a separate sheet accompanying your manuscript write your own name, the name and address of the institution at which you are a student, the name of your chemistry instructor, and the name of the chemistry club at your institution (if there is one).

Address your paper to: The Associate Editor, JOURNAL OF CHEMICAL EDUCATION, The Johns Hopkins University, Homewood, Baltimore, Md.

Your contribntion to this month's contest must be postmarked not later than March 13th.

Awards

The best contribntion received will be awarded a prize of five dollars. The five next best papers will receive awards of one dollar each.

Contributions will be judged on the basis of:

1. Correctness from a chemical standpoint
2. Neatness and correctness of drawing
3. English
4. Neatness and legibility of manuscript.

Papers which do not comply with all of the rules of the contest will not be considered.

Helium Heart's Affinity Gives New Atomic Knowledge. A story of chase and capture in the submicroscopic world of physics was related hy Prof. Bergen Davis of Columbia to the National Academy of Sciences recently at Princeton.

Electrons excited and speeded by an electric field were made, in experiments performed by Prof. Davis and his associate, A. H. Barnes, to pursue the hearts of helium atoms. known as alpha particles. shot out by radioactivity at a velocity of 9000 miles per second. The objective was to make a helium nucleus seize and hold one or two of the electrons chasing along near it.

Only when the electron was in just the right condition of velocity was it captured and the velocities of capture corresponded to the energy levels of the electron satellites of the atom as pictured hy physicists.

In one of the experiments the speedy electron and receptive helium nucleus were placed close together for so short a time that the electron could not have had time to fall by gravitational attraction like a meteorite pulled to earth by the force of gravity. Yet the electron was captured and this caused the experimenters to wonder if the alpha particle or the electron or both might fluctuate in size, becoming very large when they are about to unite and becoming exceedingly small at other times. The auras or spheres of influence would in this event change with the energy of the particles.

This new light on the behavior of the nucleus of the helium atom in making electrons its own is considered a step toward better understanding of the constitution of this important building block element.—Science *Service*

Science a Major Factor in Farm Relief. Solving the problem of spontaneous combustion will be an important contribution by science to farm relief, R. W. Dunlap, Assistant Secretary of Agriculture, pointed out to the Conference on Spontaneous Ignition and Heating of Agricultural and Industrial Products, at its recent session in Washington, D. C.

"Spontaneous combustion in barns and storage bins and haystacks costs the farmers of this country $30.000.000 a year by estimate, yet little attention has been paid to this loss. I do not recall an instance during the past eight years, when volumes have been printed concerning farm relief, in which this matter has even been mentioned as a means of helping the farmer. It is through this avenue and many other similar avenues that full relief will be obtained, and it is high time that our scientists were being supported financially and otherwise in solving this problem which is so costly to the American farmer. The Department of Agriculture has been doing some work along this line for many years, but the financial support it has received has not been sufficient to enable it to make much headway. It is hoped that more funds can he provided so that this important work can go forward more rapidly."

The only way to find out how to store agricultural products so that they will be least liable to destruction and damage by spontaneous ignition is for scientists to learn the exact nature of the chemical processes which take place in masses of materials that heat spontaneously.—Science Service