has demonstrated that science-minded students can be an effective force in the mission of stimulating more interest in science among secondary-school and college students. It is not intended to compete with regular scientific journals; rather, it is meant to give high-school and college students a medium for presenting the results of their research, for speaking their mind on scientific matters, and for learning and profiting from the experiences of other science students. Both idealistic and practical considerations, however, demand that the journal reach a wider audience. The editors judge that a subscription list of 5000 would enable the magazine to pay for itself. Subscriptions are $1.80 for four successive issues—one year when things work out as they should, longer otherwise. Supporting subscribers pay $10 and corporate subscribers $50. An "endowing subscription" for $400 brings copies of the magazine perpetually.

Particle's editorial loft is located at 2531 Ridge Road, Berkeley 4, Calif., and interested persons may communicate with the editors at that address.

Chemical Notation Systems

Various coding systems have been developed for describing the structures of chemical compounds. Some were designed primarily for use with punched-card equipment and others for use with computers. Some are suitable for use in indexes or printed lists and others are employed only for mechanized structure searching. Under a recently announced study program, to be carried out by the National Academy of Sciences—National Research Council, a thorough analysis of the characteristics of the existing systems will be conducted in terms of their similarities and differences, the uses now being made of them, the criteria which led to their adoption or development, the problems encountered in their use, the potentialities of each system for more widespread use, the needs not met by existing systems, and the purposes that might be served by agreement among chemists on a standardized system.

The one-year study, supported by a $56 000 National Science Foundation grant, will be directed on a part-time basis by I. Moyer Hunsberger of the University of Massachusetts. He will be assisted by an advisory group including representatives of the NAS-NRC Committee on Modern Methods of Handling Chemical Information, the American Chemical Society, and other interested organizations. The study will be administered jointly by the Division of Chemistry and Chemical Technology and the Office of Documentation of the NAS-NRC.

In announcing the establishment of the study program, the Foundation noted that interest in the use of chemical coding systems first arose because of the need to find better means for describing chemical compounds than are provided by their names, many of which do not identify compounds uniquely and unambiguously. It was believed that notation based on the structures of compounds might serve the purpose better than the existing system of nomenclature. In addition, during

the past decade or more, interest in the possibilities of using machines to handle scientific information has been growing rapidly, and chemists have developed a number of notation systems for coding chemical structures for mechanized information processing. The notation system devised by G. Malcolm Dyson of England, now director of research for the Chemical Abstracts Service, formed the basis of the international standard which was adopted in 1959 by a commission of the International Union of Pure and Applied Chemistry and which is expected to be issued soon in a revised edition. This and other notation procedures will be examined in the course of the NAS-NRC study.

Individuals and organizations working with chemical notations are invited to send information about the systems they employ to Dr. I. Moyer Hunsberger, Dean, College of Arts and Sciences, Bartlett Hall, University of Massachusetts, Amherst, Mass.

Compilations

Three booklets containing tables of coefficients for the integration and differentiation of certain classes of functions have recently been published by Convair-Astronautics Division of General Dynamics Corporation of San Diego, Calif. *Tables of Osculatory Integration Coefficients* by Herbert E. Salzer, Dexter C. Shoultz, and Elizabeth P. Thompson contain listings of the integrals of osculatory interpolation coefficients and of two-, three-, four-, and five-point coefficients. *Tables for Bivariate Osculatory Interpolation over a Cartesian Grid* by Herbert E. Salzer and Genevieve M. Kimbro tabulate the 2–5-point coefficients for the bivariate case. *Tables of Coefficients for Obtaining the Second Derivative Without Differences* by Herbert E. Salzer and Peggy T. Roberson list 5–9-point coefficients. Each booklet begins with a consideration of the functions and processes involved and an explanation of the tables and instructions for their use.

Two new reports on gas kinetics have been released by the Office of Technical Services. The first, written for the Air Force by the Gas Dynamics Laboratory of Northwestern University, reviews the fundamental features of the effects of "real gas" (created in air by aircraft and rockets in high-speed flight) and emphasizes high-temperature effects, including the thermal and caloric equations of state, basic effects in flow processes, and the speed of sound in reacting gases. The second, compiled by a group at Cornell University for the Wright Air Development Division, reports a project to measure the rates and study the mechanisms of the pyrolysis of gases at high temperatures, and to obtain experimental data on the efficiencies of energy transfer between molecules during collisions.

The two publications, *The Kinetics of Gases* (PB 161 908) $3.00, and *Kinetics of Reactions in Shock Tubes* (PB 161 904) $2.50, are available from the Office of Technical Services, Business and Defense Services Administration, US Department of Commerce, Washington 25, D. C.