NEWS IN BRIEF

● **TRIAL DRUG-TESTING CENTER:** The Food and Drug Administration has begun a pilot program at the St. Louis district office to study the feasibility of a National Drug Testing Center. Under the project, all samples of drugs in certain therapeutic classes will be sent to St. Louis from other FDA districts for testing. Commissioner James L. Goddard explained that a national testing center would permit greater use of the sophisticated, automated instrumentation developed in recent years, and would further the development of more advanced instrumentation and procedures. The pilot program at St. Louis will be implemented gradually with other duties of that office being shifted to different field laboratories as the drug workload increases. Even if a National Drug Testing Center were established on a permanent basis, Dr. Goddard said, district offices would continue to handle some drug analytic work since not all products lend themselves to automated analytic techniques.

● **INDUSTRIAL RESEARCH AND DEVELOPMENT**: Industry is substantially increasing its own expenditures for research and development, according to a study by the National Science Foundation, but the federal government remains the major source of financial support for industrial R&D. In a study comparing 1964 and 1965, NSF reports that industry increased its expenditures by 11 percent, while the federal contribution rose only 1 percent. Total R&D industrial expenditures in 1965 was $14.2 billion, up 5 percent from 1964. Of this, 55 percent was federal funds. Spending for basic research increased 8 percent; development, 6 percent; and applied research, 3 percent. The aircraft and missiles industry maintained its position as the largest industrial source of research and development, accounting for $5.1 billion or 36 percent of the total R&D activity. Of this, almost 90 percent was financed by the federal government. However, this was an increase of only 1 percent over 1964 expenditures while other major industries showed gains ranging from 4 percent for rubber products to 19 percent for professional and scientific instruments. In 1965, five industry groups spent 85 percent of the total R&D dollar: aircraft and missiles, electrical equipment and communication, chemicals and allied products, motor vehicles and other transportation equipment, and machinery. Industry employed approximately 358,000 R&D scientists and engineers in January 1966, up 4 percent from the January 1965 level. The ratio of total R&D funds to net sales for all manufacturing industries dropped slightly from 4.6 in 1964 to 4.3 in 1965. This data is included in a preliminary report on the 1965 industry survey conducted for NSF by the Bureau of Census, U.S. Department of Commerce, and contained in NSF *Reviews of Data on Science Resources, No. 10*, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for 20 cents.

● **METRIC SYSTEM STUDY**: The House Science and Astronautics Committee is making another try this year to get a bill passed calling for a Department of Commerce study of the metric system. The committee approved HR 3136 last week which asks for a 3-year study of whether the United States should convert to the metric system. A similar bill was approved last year but never got out of the rules committee. That committee has a new chairman, Representative William M. Colmer of Mississippi, and prospects look better. The Senate passed a similar bill in the last Congress.

● **DENTAL RESEARCH CENTER GRANTS**: The University of Washington and the University of Pennsylvania have been awarded grants under a new National Institute of Dental Research program of support for planning and developing dental research institutes or centers. Washington will receive $252,905 for the first year to plan an interdisciplinary Research Center in Oral Biology. Pennsylvania was awarded $600,851 to develop a Center for Oral Health Research, a long-range project expected to total $7.5 million. The new program encourages institutions to develop research and training centers on a broad base bringing the total university resources of clinical, basic, and life sciences together. In some instances, a proposed center may draw on resources available within a region, rather than a single university.

in our thinking regarding technological innovation . . . too few people in government, in industry, in banks, and in universities understand the special forces at work in the conception, appraisal, and nurturing of the innovative, technological enterprise."

While noting that large firms with more than 5,000 employees did "almost all" of the nation's industrial R & D, the panel argued that independent inventors and small firms contribute a larger percentage of the nation's inventive progress than their relatively small R & D expenditure suggests. As evidence, the report listed 33 "important inventive contributions of independent inventors and small organizations in the twentieth century." These included: xerography, DDT, insulin, the vacuum tube, rockets, streptomycin, penicillin, the cyclotron, the jet engine, the FM radio, the helicopter, air conditioning, the Polaroid camera, the ball-point pen, and cellophane. Large firms, the panel noted, are often unwilling to take the risks necessary for the invention and development of new products or techniques.

The climate for technological innovation and the propensity to generate new technologically based firms varies greatly within the United States, the report said. It singled out Boston, Palo Alto, Washington, D.C., and Pittsburgh as cities producing many new firms, while Philadelphia, Chicago, Kansas City, and Atlanta created few such companies. The panel formulated some general conclusions about the environment encouraging the development of such companies which included: (i) venture capital sources which are "at home" with technologically oriented innovators; (ii) technologically oriented universities located in a business climate which encourages university personnel to generate technological ventures; (iii) entrepreneurs who have been influenced by examples of entrepreneurship—"It is our contention that entrepreneurship breeds entrepreneurship."

Policies of Federal Government

Despite the importance of small companies in technological progress, the policies of the federal government often do not contribute to their success. The report stated that the total percentage of federal work performed by small companies has decreased in the past 5 years and that current contracting trends of the Department of Defense and NASA "work against the interests of small technologically oriented