RESEARCH CORPORATION
A FOUNDATION FOR THE ADVANCEMENT OF SCIENCE AND TECHNOLOGY

Notes on... grants and grantees

The first "molecular Möbius strip" has been synthesized by *David M. Walba* and his colleagues at the University of Colorado, Boulder. The research which produced the molecule, called tris (tetrahydroxymethylethylene), is a spin-off of work begun under a 1978 foundation grant, and is directed toward producing sophisticated, compact catalysts. As reported in the July 12 *Chemical & Engineering News*, the molecular Möbius strip is equivalent to the actual model—a ribbon joined into a continuous loop with a half twist in it, giving a continuous edge.

•

The structural secrets of amber, the golden fossilized resin used for trade and jewelry since ancient times, have yielded to analytical methods developed by Joseph B. Lambert *of Northwestern University. Lambert, a 1976 Research Corporation grantee, uses nuclear magnetic resonance spectroscopy, and techniques called magic angle spinning and cross polarization, to distinguish between the closely similar ambers from different parts of the world. These resin samples hold secrets of ancient trade routes, climate and vegetation. The analytical technique is also applicable to coal samples and commercial polymers.*

•

A new interpretation of some of the best known strata in North America—the Tuscarora Formation of Pennsylvania and neighboring states—has gained wide attention for Cottrell College Science grantee *Edward Cotter* of Bucknell University. The formation has long been considered curious for its absence of body fossils and because of uncertainty as to how it was deposited. According to geologist Cotter, the strata were laid down under changing conditions created by the interplay of tectonic plate adjustments and sea level changes.

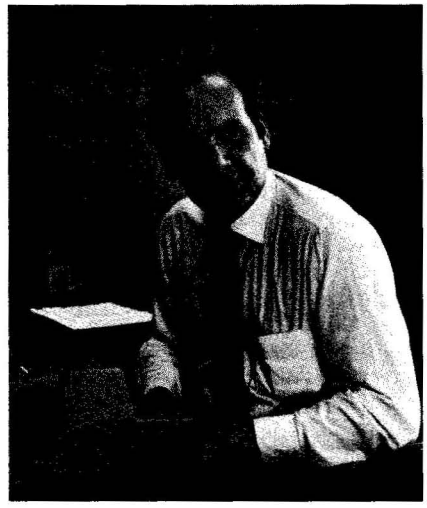
•

Raman spectroscopy may have potential for early diagnosis of cataracts thanks to work done by former grantee Nai-Teng Yu *of Georgia Institute of Technology. Yu and his coworkers use low-*

(Continued on page 2)

A Message From the President

It has been my privilege to participate in the quest for scientific knowledge as a teacher and researcher, as a university president, as a director of several technologically-based industrial companies, and now as chief executive of a philanthropic foundation. Although there are a number of research universities, innumerable industrial firms and a great many foundations, there is only one Research Corporation.



John P. Schaefer

Founder Frederick G. Cottrell established in this organization a unique mechanism to make available to industry and the public the discoveries arising from research in the sciences, and for providing resources to support further research. Research Corporation was, in a very real sense, "the national science foundation" before the agency bearing that name came into being. Although government has since made available far greater resources for research, this foundation remains a vital ancillary to the nation's scientific establishment. It works in the public interest to achieve application of inventions made at scientific and educational institutions. It performs tasks crucial to stimulating industrial innovation and creating new jobs. The public health and welfare owe much to its making widely available inventions essential to medicine, agriculture and industry.

As I begin my tenure as president, a first order of business will be to adjust the foundation's programs to meet current conditions. The Invention Administration Program, under which potentially useful discoveries are evaluated, patented and licensed to industry, is admirably suited to the needs of many smaller institutions. It will be of greater benefit to major research universities under plans now being formulated. A more comprehensive option will be offered which, we believe, will do more to maximize the identification of inventions and their successful transfer to industry and the public.

With industry increasingly turning to academic laboratories for fundamental research in biotechnology, solid state electronics, catalysis or robotics, an extension of Research Corporation's traditional role as intermediary is in order. By utilizing the services of the foundation's professional negotiators, universities will be able to protect the interests of faculty members, students and the general public. Industry will also benefit as Research Corporation expands its services. In many cases the greatest return in knowledge will be generated by placing research dollars where the potential is greatest, perhaps at several universities and including some lesser known, but nevertheless distinguished, institutions.

Another initiative in the planning stage is for the foundation to establish a venture capital subsidiary to develop ideas too embryonic to be attractive to industry under a conventional patenting and licensing program. Although such undertakings involve uncertainties, they will be

(Continued on page 4)

yielded to analytical methods developed

James S. Coles Retires; Was President Since 1967

James S. Coles, president of Research Corporation for 14 years, retired on June 30, 1982. The foundation entered a period of extensive growth during Dr. Coles' presidency, with total assets increasing from $11 to $46.3 million, and the professional staff growing from 14 in 1967 to 22 at the end of 1981.

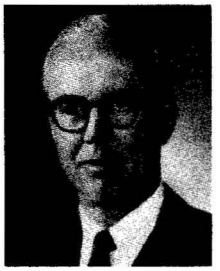
The major growth was in the foundation's Invention Administration Program, an operating program for evaluating, patenting and licensing inventions from nonprofit institutions. Gross invention royalties, shared among institutions, their inventors and the foundation, increased from just over a million dollars to $6.5 million in 1981. Although there was a retrenchment in the number of different grants programs during the period, there was an increase in the awards and total expended for research in the natural and physical sciences. This total increased from $2 to $3.2 million annually by 1981.

A graduate of Columbia University and holder of a doctorate in physical chemistry, Dr. Coles served on the faculties at City College of New York and Middlebury College before taking on a wartime assignment at Woods Hole Oceanographic Institution. He also became a member of the U.S. Naval Technical Mission in Europe, receiving the President's Certificate of Merit and the Navy Bureau of Ordnance Award.

Following a six-year period at Brown University during which he advanced from assistant professor to dean of the college, Dr. Coles assumed the presidency of Bowdoin College in 1952. He held that position until 1967, leaving to become Research Corporation's chief executive.

In addition to remaining active as chairman of the executive committee of the Research Corporation Board of Directors and head of Woods Hole Oceanographic Associates, Dr. Coles is a trustee of Woods Hole Oceanographic Institution, of the Independent College Funds of America, and of the General Theological Seminary. His directorships include the Council on Library Resources; the Chemical Fund; Edo Corporation, and the American Savings Bank.

Dr. Coles, a member of many professional societies, has been widely honored for his contributions to higher education. Among his awards are an honorary LL.D. from Brown University; D.Sc. from the University of New Brunswick, and Sc.D. from Merrimack College. Other recognition has been extended by The University of Maine; Columbia University and Bowdoin College. Bowdoin recently christened its 16-story residence unit, the tallest campus building, "Coles Tower."



James S. Coles

Pauline Newman

George M. Stadler

Bayard R. Hand

Pauline Newman Named to Foundation Board

Dr. Pauline Newman, scientist, attorney and eminent authority on the utilization of new technology, has been elected to Research Corporation's Board of Directors. A member of the foundation's advisory patent committee since 1974, Dr. Newman will help guide both the foundation's technology transfer and science advancement programs.

In addition to serving as a State Department advisor on international industrial property and former member of a White House review on industrial innovation, Dr. Newman has been a director and officer of the American Chemical Society and The American Institute of Chemists. She also holds voluntary positions with the International Patent and Trademark Association, the American Patent Law Association, and the American Bar Association.

Dr. Newman, director of chemical patents and licensing for Philadelphia's FMC Corporation, is a graduate of Vassar, Columbia, Yale and New York Universities.

New Foundation Executive to Bolster Tech Transfer

George M. Stadler, an authority on technology transfer and the use of venture capital to spur development of new concepts, has joined Research Corporation as vice president—patents and licensing and assistant to the president. He will share responsibility for the foundation's Invention Administration Program for evaluating, patenting and licensing university inventions, and will organize a new ventures subsidiary.

Prior to assuming the Research Corporation posts, Mr. Stadler was president of University Resources, Inc. of Wilton, Conn., a company designed to raise capital for university research and new high-technology enterprises. He also served as vice president of University Genetics and University Patents, Inc., both of Norwalk, Conn.

A native of Cleveland, Ohio, Stadler received his BS and MS degrees from John Carroll University, majoring in physics under a National Science Foundation scholarship. He did further graduate work at Case Western Reserve University, where he was assistant director of research administration and established a patenting and licensing office. He has since played a pioneering role in formulating techniques for developing technology created by institutions in the U.S. and abroad.

Among Mr. Stadler's professional affiliations are the Society of University Patent Administrators, the Licensing Executives Society and the Society of Research Administrators. He is a member of a number of scientific societies and industry groups concerned with technology. Mr. and Mrs. Stadler and family are residents of Wilton, Conn.

Bayard R. Hand, VP Finance, Steps Down

Bayard R. Hand, Research Corporation Vice President—Finance, retired in July following 14 years of service with the foundation. Mr. Hand coordinated investment policies with Research Corporation's Board of Directors and its finance committee, and oversaw the budgetary process. He also wore a second hat, functioning as executive in charge of the foundation's personnel and employee benefits program.

Mr. Hand joined Research Corporation in 1968 after holding various research, analytical and financial positions in private industry. A resident of Noroton, Conn., he remains active in civic affairs and as a foundation and industry consultant.

Grants and Grantees

(Continued from page 1)

power lasers to provide monochromatic light while avoiding damage to animal retinas. An ultra-sensitive Reticon detector makes it possible to pick out the weak Raman signal resulting from light scattering. This spectroscopic signal can reveal the chemical changes that accompany development of cataracts.

•

Energy-saving photocatalysts for a variety of industrial purposes are a possibility opened up by grantee *Steven L. Suib* of the University of Connecticut. In an unusual "first," Dr. Suib explored properties of substances already widely used: uranyl-exchanged zeolites, porous silicates of aluminum that offer "a con-

(Continued on page 4)