

ENGINEERS and SCIENTISTS

Dynamic new division of **Ford Motor Company** is now in initial stages of expanding military and commercial programs. Positions are at Aeronutronic's new \$22 million Research Center, at Newport Beach in Southern California. Work in an intellectual environment as stimulating as the location is ideal—close to most of Southern California's cultural, educational, and recreational centers. Outstanding growth opportunities for qualified engineers and scientists are open in the following fields:

RESEARCH OPERATIONS

Research is being conducted in hydrodynamic and radiation processes in tenuous gases at very high temperatures, ionization produced by soft X-radiation, hydrodynamics of solids at high pressures including studies of equations of state, infrared properties of the atmosphere and of hot gases, conversion of chemical energy into sound and the condensation rate of supersaturated vapors. Theoretical physicists are needed to work in these fields. Specific experience is not necessary, however a general background in theoretical and mathematical physics is required.

You are invited to address inquiries to Dr. Lloyd P. Smith, General Operations Manager, Research Operations Staff, Aeronutronic Bldg. 21, Ford Road, Newport Beach, California.

Other unusual opportunities are open for qualified engineers and scientists in the following areas:

SPACE TECHNOLOGY OPERATIONS

Astrodynamics • Space Environment
• Theoretical Physics • Electronics •
Radar • Information Links • Auto-
matic Controls • Mathematics • Pro-
pulsion Research • Combustion •
Materials • Aeromechanics

COMPUTER OPERATIONS

Input-Output Equipment • Storage
Units • Display Devices

TACTICAL WEAPON SYSTEMS OPERATIONS

Infrared Systems and Components •
Optical Systems • Transistor Circuitry
Development • Aerodynamics • Ther-
modynamics

Qualified applicants for the above three operations are invited to send resumes and inquiries to Mr. Jim Harris, Aeronutronic Bldg. 21, Ford Road, Newport Beach, California. Telephone ORiole 3-2520.

AERONUTRONIC

a Division of FORD MOTOR COMPANY
NEWPORT BEACH,
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essence to the nonspecialized reader with clarity and honesty. For a large class of readers Lansdell's book can be recommended as a gold mine of information about the sociological and political periphery of the greatest technological advance of all times.

The Determination of Molecular Structure. By P. J. Wheatley. 263 pp. Oxford U. Press, New York, 1959. \$5.60. *Reviewed by R. A. Pasternak, Stanford Research Institute.*

THE explosive growth of scientific knowledge has forced the scientist or engineer to become a specialist to an ever-increasing degree. The universal chemist of only a century ago has become, for example, a physical chemist who further specializes in structural chemistry and finally turns into an infrared spectroscopist. The complexity of modern research and technology makes it mandatory, however, that the specialist have a good grasp of the power of other techniques and approaches in order to correlate and coordinate his research with that of others.

In *The Determination of Molecular Structure*, P. J. Wheatley attempts to fill the great need for scientific education in an area of paramount importance for the physical and biological world. The author has the ambitious aim to give "an introductory survey of the main physical-chemical methods that have been devised for the determination of molecular structure" and he succeeds admirably in this undertaking. The major methods of structure determination are presented in a logical and easily understandable form. A valuable discussion of their limitations and accuracies is included. This wealth of information is contained in only 260 pages, and is achieved by emphasizing the physical process underlying the methods, making use of well-designed illustrations, and largely omitting the derivation of the mathematical expressions.

In order to keep his treatise short, which is one of its principal merits, the author had to exercise great restraint in selecting material. One omission is perhaps especially surprising: electron paramagnetic resonance is not presented, although a full chapter is devoted to magnetic methods. As for omitted details, in the discussion of x-ray crystallography, the reviewer's field of specialization, no reference is made to least-squares methods for refining atomic parameters, although this technique is being used extensively. Thus, it is likely that other omissions will be discovered by some indignant specialists in other chapters of the book.

Wheatley's style is simple and precise. The subdivision of the chapters into titled and numbered sections enhances the readability. Although the drawings are informative and well done, reproductions of actual spectra are as a whole poor and should be improved in a future edition.

Wheatley's *Molecular Structure* is recommended highly to the chemist or physicist who is interested in the structure of molecules whether he is still in college or is professionally active.