K. Williams, George L. Kirkham, F. William Howton, Roger Baldwin, Samuel Kramer, Louis Berkowitz, Jack Chwast, Michael Fooner, Albert Hess, Walter A. Lunden.

Values and Metaphysics in Science (30 Dec.)

Arranged by Morton King.

Values and metaphysical assumptions are present, explicitly and implicitly, in the conduct and reporting of scientific research. Some presuppositions must be accepted and used for work to be "scientific"—rather than "theological," for example. Other presuppositions found in the work of scientists are not necessary; they may either aid or handicap scientific work, depending on the presupposition and the problem being studied. Both the scientific community generally and the individual scientist need to be conscious of values and metaphysical assumptions. They should also be consciously critical of the consequences of each such belief. Scholars in the physical and social sciences and in religion will attempt to isolate such beliefs and discuss some of their consequences.

George W. Crawford, Robert W. Friedrichs, Ralph W. Burhoe, Frederick J. Streng, Samuel Z. Klausner, Frederick S. Carney, John A. Maguire, Paul D. Minton.

Measuring Individual Differences in Religion (30 Dec.)

Arranged by Richard L. Gorsuch.

Progress in the study of man depends in large part upon the development of adequate research techniques, including precise instruments for measurement. While the definition and measurement of many variables—such as the rate of learning or social status—are relatively self-evident, the identification and quantification of forms of "religiosity" are more difficult. Part of the problem comes from wide variations in definitions of religion, part from discrepancies within the person between, for example, what he says and what he does, part from contaminating interactions between the person being measured and the measuring instrument, and part from the theological presuppositions of the investigator.

With increasing numbers of social scientists becoming involved in the scientific study of religion, the number of procedures used to identify the religiously committed person has steadily increased. Although some investigators have used arbitrary and naive measuring techniques, others have sought to refine the measuring instruments themselves. These latter attempts have pointed to the problems in the area and are beginning to present solutions as well. The papers in the session on "Measuring Individual Differences in Religion" are designed to acquaint the audience with some of these problems and some proposed solutions.

Morton King, Bernard Spilka, John R. Tisdale, Sam C. Webb, Gustave A. Ferré, Richard A. Hunt, William J. Millard, Jr.

HISTORY AND PHILOSOPHY OF SCIENCE

Vice Presidential Address and Energy and Society (28 Dec.)

Arranged by R. Bruce Lindsay and Melvin Kranzberg.

The concept of energy is the most important in the whole of science and its impact on society continues to grow steadily from both ideological and technological standpoints. The symposium has two purposes. The first is to trace the historical development of the concept of energy and its scientific significance from its origin in antiquity to the twentieth century. The second is to explore the changes which have taken place in the technological uses of energy from the eighteenth century to the present and to provide a projection of such uses to the end of the twentieth century.

Raymond J. Seeger, Edward D. Daub, Erwin N. Hiebert, Martin J. Klein, Eugene S. Ferguson, Harold I. Sharlin, Lynwood S. Bryant, Richard G. Hewlett, and Bruce C. Netschert.

New Directions in 17th Century Research (28 Dec.)

Arranged by Allen G. Debus.

The papers examine aspects of the scientific revolution that have not been widely explored, including the role of the occult sciences in that period. They try to assess the relationship between these aspects and the scientific revolution as a whole.

Nell Eurich, Edward J. Collins, Audrey Davis, and Gerald J. Gruman.

Science and Society in 19th Century Britain (29 Dec.)

Arranged by George Basalla.

The session examines the general question of the interrelations of science and society in a historical setting, and specifically looks at two aspects of that relation in connection with science in nineteenth-century Britain.

Harold Sharlin, Rom Sviedrys, Arnold Thackray and Thomas De Gregori.

Genetics in the Late Nineteenth and Early Twentieth Centuries (29 Dec.)

Arranged by Frederick L. Holmes.

The session will examine the early development of the science of genetics, focusing both on theories of inheritance before Mendel and on some early Mendelians.

Frederick B. Churchill, Garland Allen, and Elof Axel Carlson.

Industrial Archeology (27 Dec.)

Arranged by James C. Hippen.

The results of recent researches in various fields of industrial archeology.

Barnes Riznik, B. H. Rucker, and Richard L. Deily.

Technology and Values (29 Dec.)

Arranged by Emmanuel G. Mesthene.

The effect of technological change on the processes of value formation and value change in the individual and in society; an exploration of the actual ways by which technology affects values; the implications for values of the growing social importance of knowledge and of knowledge institutions.

The relationship between technology and value change as mediated by the religious belief system; the impact of technological change on the structure of myths and meaning systems and the consequences for contemporary religions and values.

The relationship between technology and value change as mediated by the economy; the mechanisms by which technological change produces economic change and the social and value consequences of the emergent post-industrial economy.

The relationship between technology and value change, both direct and as mediated by social change. The value implications of technologically induced social change in present-day society.

Harvey Cox, Nathan Rosenberg, Irene Taviss, Bernard Barber, and Melvin Kranzberg.

Technology as a Social Process in Africa (29 Dec.)

Arranged by Thomas R. Degregori.

A discussion of various technological elements and their sociocultural relationships, with special emphasis on Africa.

Robert C. Davis, Thomas Glick, Klaus Wachsmann, Daniel F. McCall, Oriol Pi-Sunyer, and Robert F. Gray.

Metalanguage Dialogues and Metaphorical Synthesis in Education (26 Dec.)

Arranged by Edgar Taschdjian.

Although much has been done during the last three decades to improve the hardware, software, and methods of education within the age-old structure of knowledge, the real need of the day is to restructure knowledge itself so as to be able to teach several skills, concepts, and processes simultaneously, more effectively, quickly, and economically than any one of them alone. The purpose of this session is to explore some of the possibilities for utilizing the concepts, tools, and models of the general systems analyst in restructuring both knowledge and curriculum patterns.

Felix Kopstein, T. C. Helvey, Jere W. Clark, Henry Moss, and Frederic N. Firestone.

Social Systems in the General Systems Spectrum (28 Dec.)

Arranged by Bertram M. Gross.

The papers in this panel will attempt an initial topological exploration of the many varieties of social systems. Major attention will be given to the different kinds of social systems, as well as to the non-human (or physical) parameters of social systems and the differences between social systems, other living systems, and non-life systems.

Eric Trist, Morton Kaplan, Richard Merritt, Janos Schossberger, Michael Marien, and F. Kenneth Berrian.

Systems Research in Organization and Management (29 Dec.)

Arranged by Lawrence L. Schkade.

Systems research in organization and management will be considered through the presentation of a cross section of topics from this general area of research, accompanied by a discussion of topics of interest to the group. Short presentations will include (1) a comparative study of belief systems regarding work in social systems ranging from morphostatic to morphogenic; (2) the application of relativity to cybernetics utilizing the ecolithic approach to systems design, with implications of organization and management; (3) communicating to managers the concept of a business organization as a system model; and (4) measurement of input, maintenance-processor, and output variables and identification of relationships between variables in an organizational system. The general discussion may be extended to include topics of general interest such as systems approach to problem identification and definition, organization communication systems, management information systems, systems models of the firm, and models of human organizational behavior.

R. Oliver Gibson, Frank Baker, Daniel M. Duncan, Ralph M. Stodgill, and Yehezkel Dror.

Conflict Resolution and Arms Control (30 Dec.)

Arranged by L. B. Slobodkin.

Conflict Resolution is becoming a major social science discipline with obvious practical significance and, perhaps less obviously, new models of problem solution and thought. The intellectual framework is derived from biological, economic, and sociological as well as physical models, so has clear ties to the general systems point of view. The omnipresence of contemporary conflict makes presentation of the intellectual basis of conflict resolution absolutely vital.

Richard H. Cady, Martin Shubik, and Stuart Altman.

The Analysis and Evaluation of a Scientific Field (30 Dec.)

Arranged by Stuart Wright.

The symposium has two parallel purposes: (1) to analyze the results of current systems studies of the analysis and evaluation of research activities, and (2) to review the methodological problems of this area, together with their solution status. Topics include: objective methods for the systemic modeling of a scientific field; use of cluster analysis for identifying trends, and for orienting projects in hyperspace; development and application of criteria of scientific and mission systems for planning purposes. The symposium will attempt to articulate the values of a systems approach to the topics discussed, and to the overall problem of planning an effective, long-range research support program by a government agency as the nation enters an era of reduced funding.

Charles W. Williams, Jr., Charles A. Baker, Carol Steinhart, and John Rowen.

ENGINEERING (M)

For details, see page 1157.

MEDICAL SCIENCES (N)

The Control of Fertility (27 Dec.)

Arranged by Hudson Hoagland.

In the morning session the symposium will deal with the

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