demonstration showed the transference of imprinting effects in ducks from youth into adult sexual responsiveness. Perhaps the most remarkable example of the results that can accrue from careful selection of a subject for developmental study was a paper showing close correspondence between the vocal patterns of some parasitic finches and the songs of their bird hosts, with suggestive evidence that the resemblance results from learning.

The papers on various aspects of descriptive and comparative ethology were often inductive in approach and contained many ideas about social behavior and its evolution. Some were ecological in nature; others dealt with behavioral reproductive isolation and behavioral genetics. An apparent case of behavioral polymorphism was related to the color polymorphism of ruffs which, apart from its great intrinsic interest, also raised several fascinating genetic, endocrinological, and developmental problems. Work of this type has been especially important in the history of ethology, although we can see a change, as in experimental studies, toward more precise, quantified methods. It is hoped that the increasing concern with behavioral physiology will not divert attention from the value of descriptive investigations, both as excursions into an important and still largely neglected area of evolutionary biology, and also as a key episode in the training of students of animal behavior.

The hosts for this conference included Jan van Iersel and members of his staff from the department of zoology at the University of Leiden.

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Science Policy

The needs for intensifying the study of interactions between science and public policy were discussed at an informal meeting at the University of Sussex, England, on 9 November 1963. This conference, under the direction of Stephen Toulmin (director, Nuffield Foundation Unit for the History of Ideas) was attended by representatives of universities, industry, and government.

The main question posed was: "Is the making of science policy—interpreted broadly to encompass concern for pure and applied science and the education of scientists and engineers—a process amenable to scholarly study and, if so, how can we best foster the arrangements and environment conducive to academic investigation of this process?" There was general agreement that the role of science in society is an expanding and crucial one and that, in consequence, the quality of decisions affecting the development and application of science is a matter of prime importance to society now and throughout the foreseeable future. Encouragement, therefore, should be given to efforts aimed at gaining new insights into ways in which such decisions are made and new concepts and information that may assist in making future decisions.

Four general classes of problems were suggested as being relevant to the making of science policy. They concern (i) the internal development of the sciences, including the logical structure of scientific theories and the evolution and interrelation of scientific concepts; (ii) the external relations of the sciences, such as those with the public, with technological innovation, and with social value; (iii) quantitative aspects of the growth of scientific endeavor, such as amounts of expenditure and numbers of scientists, students, and publications; and (iv) comparative studies in science policy, examining administrative arrangements and policy-forming procedures in different countries at different points in time. Work already started on some of these problems in several countries was briefly summarized.

Four organizational structures, which could be effective for research in science policy, were outlined—units within a government establishment; extra-governmental individuals or groups who advise the government; academic centers conducting studies specifically to shed light upon the policy process; and university departments that carry on research in related areas, such as history of science, motivated only by scholarly interest and not by intent to produce results of direct value to makers of science policy. Although each structure has a place and can yield valuable results, the emphasis was placed on research centers in academic environments. Such centers could conduct programs of study designed to examine and build intellectual foundations for making science policy and could also train persons for work on policy aspects of science and government.

The effective formation of science policy demands many kinds of information and calls upon such varied academic disciplines as history, philosophy, economics, operations research, public administration, and political science. Consequently, the study of science policy probably will evolve in a more healthy way if it is carried on as a meeting place of several fields rather than if any attempt is made at the outset to isolate it as a separate field under a new name. At the same time, some organizational focusing of efforts would help research workers to develop a sense of common purpose, and also might aid in establishing needed facilities and financial support.

The group felt that it was worthwhile to establish a few, but not too many, centers of interest in academic institutions. They could be established in several different ways—as a unit within a department of economics, as a grouping of faculty in history and philosophy, and so forth. While recognizing the value of diversity and flexibility in developing this embryonic field, some participants believed that, in Great Britain, it might be better to start by establishing a single center, sufficiently well equipped with staff, documents, and computational aids to attain at once a strong and viable research unit.

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Forthcoming Events

June

1–3. Instrument Soc. of America, **Analysis Instrumentation** Div., symp., San Francisco, Calif. (Northern California Sec., ISA, 1341 Seventh St., Berkeley, Calif. 94710)

1–3. **Chemical Inst. of Canada**, 47th annual, Kingston, Ont. (D. G. Diaper, Royal Military College, Kingston)

1–3. **Subunit Structure of Proteins**, 17th biology symp., Brookhaven Natl. Laboratory, Upton, N.Y. (S. Lacks, Dept. of Biology, Brookhaven Natl. Laboratory, Upton 11973)

1–4. Basic Science and Clinical Aspects of **Muscle**, Edmonton, Alberta, Canada. (G. Monckton, Univ. of Alberta Hospital, Edmonton)

1–5. **Medical Library** Assoc., 63rd annual, San Francisco, Calif. (MLA, 919 N. Michigan Ave., Chicago 11, Ill.)

1–5. Society of the **Plastics Industry**, natl. conf., New York, N.Y. (W. C. Bird, 250 Park Ave., New York 10017)