recognized and given serious consideration by UNESCO.

12. *Interdisciplinary Conferences.* This group notes with approval the interdisciplinary conferences sponsored by UNESCO and recommends their continuation and expansion. These serve the important end of bridging the gulfs and prejudices between scientific disciplines which have led to overdepartmentalization in academic research bodies and have seriously retarded the advance of scientific knowledge.

Engineers Joint Council

Supplementary Work Group 9 Report

Close cooperation between UNESCO and the world-wide engineering profession and between the engineering societies and other agencies concerned with international relations should encourage practical extension of UNESCO's immediate and long-range activities. In this connection, the Engineers Joint Council's International Relations Committee has a Commission on Technical Assistance for the following primary purposes:

A. To establish and maintain liaison with such organizations as the Economic and Social Council and other U. N. agencies concerned with international technical assistance, the U. S. Department of State (in its administration of Point IV and related operations), the Mutual Security Agency, and the Anglo-American Council of Productivity so that information or requests for advice or aid from these organizations may be promptly channeled to the appropriate group or individuals.

B. To give direction to any other activities that the Engineers Joint Council may decide to undertake in the field of engineering assistance.

Also EJC has close contact with the National Management Council, which is the U. S. Member of the International Committee of Scientific Management and is collaborating with the Mutual Security Agency in advancing scientific management in Europe. Another noteworthy citation is the establishment of cooperative relations with Latin American engineers through the creation of the Pan American Union of Engineering Societies. Furthermore, EJC, through association with the International Relations Committee of the American Society for Engineering Education, maintains an exchange of ideas, information, and personnel in engineering education. In these ways the engineering profession in the United States is being brought into intimate contact and effective relationship with engineers throughout the world.

To be most effective, it is felt that:

A. In the selection of engineering personnel for foreign service, the advice of the major professional organizations should be sought and utilized. These engineering institutes and societies constitute an already existing facility for the primary selection of possible candidates for such employment.

B. For preliminary surveys of industrial projects both government and independent engineers should be used; but for the carrying out of the projects, private engineering firms which specialize in the work involved should be engaged and the projects completed by private enterprise.

It is believed further that initiation, encouragement, and support should be given to:

1. Education in the engineering sciences of selected qualified foreign students to be sent to the United States from underdeveloped and other foreign countries.

2. Programs of assistance in developing engineering education in foreign countries.

In order to be of greatest service in utilizing and sharing their special knowledge, the engineering profession could benefit from UNESCO's aid in determining:

1. Needs to be met.

2. General and technical knowledge and personality traits desirable in engineers who are to participate. For example, the latter attitudes, characteristics, and behavior tendencies may be exhibited by the individual's cultural background, sympathy, humility, and adjustability to the environment.

3. Manpower resources available for participation in projects.

4. Engineering programs planned on a world-wide basis so that future demands for engineering skills can be anticipated. This will reveal the time available for the training of engineering personnel.

To this cooperative effort The Engineers Joint Council, with its Committee on International Relations and its Commission on Technical Assistance, is dedicated in its objective to advance the general welfare of mankind through the available resources and creative ability of the engineering profession.

Perpetual Motion and Perpetual Research

IF I were concerned with sociology, I would agree with Leaver and Brown (SCIENCE, **114**, 379 [1951]) that general laws are not unwanted in the field of social science. I would not, however, prove this point by making reference to the frustrations of those who sought perpetual motion machines before the law of conservation of energy was known, because recognition of this fundamental law would have been much delayed (historically) had not such research occurred. Clearly this was not altogether wasted effort, nor should it be implied that the efforts of social scientists today, who drift around (and sometimes sink) in uncharted waters without a compass, are without reward.

As a youth it was my fate to have encouragement from teachers to follow a not-uncommon inclination where problems are resolved by considering basic postulates without reference to earlier, more classical solutions. I must confess that I spent an enormous amount of time on projects such as the design of perpetual motion machines and the trisection of the angle by rule and compass. Is it to be inferred that there are some who categorically reject this theory of education?

I conclude that Leaver and Brown are among those who wish very much they could be alive a thousand years from now, to marvel at and to enjoy the supposed progress which will mark civilization at that far distant time. However, there seems to be no justification of existence if it is not asserted that today is a better time than tomorrow to live.

It does not seem to be a serious matter how soon the social science law of energy conservation is discovered, as long as thinkers can be delighted and excited by thoughts of social science perpetual motion machines.

WALTER ROSE

The Oil and Gas Journal
Houston, Texas

MR. LEAVER and I would be the last to deny that today is a good era in which to live. We are having a wonderful time and, although we notice one or two imperfections in our society, we would certainly not take any bets that society would be better a thousand years hence. Far from believing in automatic progress, I think it is at least implied in our paper that we belong to the school of thought which feels that the natural course of development is toward dissolution and decay.

I am no expert on the history of invention, but it does seem clear to me, at least from reading the transactions of the Philosophical Society for a period covering the first half of the eighteenth century, that an immense amount of effort was wasted on the development of perpetual motion machines. Similarly, vast numbers of man-hours were wasted on the same project even after the possibility of attaining perpetual motion had been definitely disproved. This was done by those thousands of people (among them Mr. Rose) who had not yet got around to reading the literature on the subject.

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Book Reviews

Die Sonnenkorona: Beobachtungen der Korona 1939–1949, Vol. I. M. Waldmeier. Basel: Verlag Birkhäuser, 1951. 270 pp. Sw. fr. 24.60; cloth, Sw. fr. 28.60.

At present the investigation of the solar corona can be considered as the central problem of solar research. Since 1931, when B. Lyot succeeded in constructing a coronagraph, which permits regular observation and photography of the corona independent of the event of a solar eclipse, considerable advance has been made in the understanding of this phenomenon. This rapid progress is vividly illustrated by the fact that the present comprehensive treatment of corona physics could be undertaken just two decades later. The author, an authority in this field of research, is director of the Swiss Federal Observatory in Zurich. For decades the scientific program there has been devoted to solar research and, as a result of Waldmeier's efforts, the observatory has extended its activities to corona research. For this purpose, a special observatory has been established on a mountain near Arosa at an altitude of 6725 feet, and extensive research has been carried out since 1939. By means of spectroscopic investigations with a coronagraph, the intensities of two corona lines have been measured as a function of the position angle of the solar disk. The two corona lines employed are the green and red, with wavelengths of 5303 and 6374 A, respectively, attributed by Grotrian and Edlén to forbidden transitions in highly ionized states of the iron atom, namely, Fe XIV and Fe X.

The present volume contains a detailed description of the observatory in Arosa, the coronagraph, and the spectroscopic equipment. After a discussion of the research program and a description of the method employed, there are 1410 polar diagrams containing the spectrophotometric observations made with the green and red corona lines. The statistical evaluation of this extensive material will be given in a second volume, which will also contain results of further investigations. A third volume is planned to present a comprehensive treatment of our knowledge of corona physics. All scientists interested in this fascinating subject look forward with great expectation to the publication of these volumes.

It may be mentioned that at present five observatories are active in this type of research. Besides the original one of B. Lyot on the Pic du Midi in France, there are others in Austria, Germany, Switzerland, and the United States (at Climax, Colorado).

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Organic Chemistry (Holleman's). Rev. by J. P. Wibaut; trans. from 16th Dutch ed. by Samuel Coffey. Houston–Amsterdam: Elsevier, 1951. 660 pp. $9.00.

To one who some 25 years ago was nourished on Holleman's *Organic Chemistry,* this revision and modernization by Professor Wibaut is most welcome. It has always seemed a glaring omission that some qualified person had not undertaken a definitive revision of what was in its prime one of the classics of elementary organic chemistry textbooks. It was, therefore, with considerable anticipation that this reviewer began perusal of the latest edition of Holleman.

It must be admitted, however, that the reader's hopes were somewhat dampened. It developed that the thickness of the paper on which the book is printed had contributed strongly to the visions he had entertained regarding the comprehensiveness of the revised Holleman.

As stated in the preface, the book is intended not only for students who have chosen chemistry as their main subject, but also for students of medicine and biology. In the attainment of this aim Wibaut has succeeded admirably. The ultramodern organic chemist, who can find no basis for the subject other than in indiscriminate use of ionic conceptions, will undoubtedly find much to criticize in this edition. On the other hand, those who cling to the classical approach to the subject, tempered with a modest introduction of the newer concepts, will find much comfort in the presentation of the material. In the opinion of this reviewer, Wibaut has succeeded admirably in blending the old