rather than technical phraseology—will be read by the newspaper public. Many scientists are unwilling to accept a simple way of saying something and adhere closely to strict scientific terminology.

Point 3 is important because the professional science writers, to-day, are intelligent, specialized and experienced journalists who do nothing except follow and report the latest developments in the world of science. They are willing and eager to correct errors or misinterpretations which may creep into their writings, but they appreciate the courtesy of explanations for the changes in their manuscript. Such explanations are the tribute of equality from the professional man in one field to the professional man in another field of related endeavor. It is only by such mutual respect and cooperation that the great work of advancing the dissemination of knowledge of science to the public can be raised to greater heights.

ROBERT D. POTTER,
Science Editor, The American Weekly

REPRINTS FOR EUROPEAN LABORATORIES

MOST European laboratories are unable at present to obtain American (or British) scientific journals, but can receive reprints, especially if they are sent by first-class mail. In the past week I have received two letters from scientists in Denmark and Sweden complaining that their work was handicapped by unavailability of journals, and thanking me for reprints I had sent. This seems to indicate a very practical way for American scientists to aid their colleagues in Europe.

ROBERT B. DEAN

QUOTATIONS

SCIENCE SHOWS THE WAY

THE significance of the conference on Science and World Order has been two-fold. It has held aloft the torch of free scientific discussion between men of many nations on issues of vital importance to humanity—"the greatest torch," in the words of General Smuts's recorded message to the conference, "that the spirit of man has kindled in the modern world"; and it has emphasized the increasingly close relationship between science and government. The relationship has never been closer than in this war. Not only the fighting services but all other forms of governmental activity are increasingly dependent on science. This dependence has perhaps not yet been as fully realized everywhere as it should have been. There are still gaps due to obstructive traditionalism. Professor Haldane may be right in thinking that the potentially valuable services of men of science less persistent than himself are sometimes left unused; and, among lesser men, there are still too many stories of trained chemists working as orderlies or pay clerks. But in general the change in outlook has been undeniable and striking. It has not been confined to general staffs and civil servants. Men of science on their side have learned to regard themselves not as mere consultants sitting in remote laboratories but as active participants in front-line warfare and in the framing of military and administrative policy. The conference which ended last night has certainly not been "academic" in the invidious sense of the word.

More important in the long run even than relations between science and government are relations between science and the people. Much was said at the conference about planning for the future. But, as one speaker remarked, planning can never be more than an "administrative convenience" until it is brought into direct contact with human needs. The American Ambassador, who presided at one session, spoke of the "wounded world of immediate needs and crowded wants" into which we shall move when hostilities end. In this world of the future it may sometimes be necessary to strike a nice balance between needs and wants. Clearly the needs of all have precedence over the wants of some. In such fields as health and nutrition much can be done by education to make people want most what they need most. But, save where military exigencies in time of war and restricted resources in time of peace are a limiting factor, intelligent planning must make allowance not only for human needs, but for human preferences and even for human caprice. There is nothing scientific about herding together in blocks of flats the people who want their own cottages and backyards.

In fact science, if it is to fulfil its human mission, will have to concern itself in future as much with the consumer as with the producer. This implies to some extent a reversal of past attitudes. But the whole conception of the needs and wants of the consumer as the starting-point of a program of reconstruction owes much to those who in recent years have worked out, especially in the field of nutrition, standards recognized as the necessary minimum for human well-being, and have shown how far existing standards, even in advanced countries, fall below them. The recognition of such standards was rightly described by Herbert Morrison as "a new social and political factor of the first importance." It has aroused the social consciences of all classes, and has established a principle accepted by all parties as an obligation overriding selfish or sectional interests. The war has forced on this country what Sir John Orr urged as a permanent and universal objective—"a food policy

based on nutritional needs." Nor are these considerations confined to problems of nutrition, though this may provide the simplest and most urgent field for their application. The almost equally elementary requirements of housing and clothing will also call after the war for comprehensive policies, the lines of which are already beginning to shape themselves. The same principles might easily be applied to some of the more sophisticated requirements of modern civilization. Mr. Morrison spoke of standards in education and in leisure; and Mrs. Hamilton invited science to bring into the kitchens of the workers those hitherto expensive "appliances and fittings" which would rationalize the burden of housekeeping for all classes and release a store of female capacity and energy at present absorbed by household duties.

Thus the conference did not disdain the domestic view. But its international composition was calculated to ensure that the problems under discussion would be placed in their world setting. Like all great modern problems, the contribution of science to the advancement of human welfare is a world-wide issue. It has been realized for many years that the substantial increase in standards of nutrition, which science has shown to be necessary on grounds of health and efficiency, provides the one prospect of overcoming the chronic crisis of so-called "over-production" which has overtaken every agricultural country in the world in the past twenty years. Sir John Orr quoted some striking figures to illustrate the expansion of agricultural production which would be needed in order to bring the nutrition of the whole population up to standard even in the United States, the richest country in the world; and he went on to argue that a policy of meeting nutritional needs everywhere would rule out any danger of an agricultural slump for many years to come. What is true of the crisis of agriculture is true in a scarcely less marked degree of the crisis of industry. As Sir Harold Hartley suggested in his paper on world heat and power requirements, the economic vicissitudes of the present century may be largely due to the failure of the world to adjust itself to the "closing of the frontier"—the cessation of natural and automatic expansion into virgin territories—which approximately coincided with the end of the nineteenth century. Science continues to increase the world's productive capacity as rapidly under the new conditions as under the old. What it must now teach us to do, by releasing new sources of energy, is to substitute an organized and intensive expansion of consumption for the unorganized and extensive expansion of the previous period.

But, though science shows the way, it would be presumptuous to believe that science alone can lead us to the goal. The men of science themselves have moved far since the era of uncritical optimism, when progress was regarded as automatic and science as its predestined instrument. We need no evidence to-day that science can serve evil ends as well as good. It can be invoked to bolster up narrow sectional interests as easily as to promote the welfare of the community. This is no reproach to the instrument, but a reminder that the ultimate test of its value lies in the moral quality of the human purpose directing it. The most important service rendered by the conference of the past few days has been to bring to public knowledge the almost unlimited potentialities of human development and human well-being which science has to offer. Science provides the opportunity. There must also be the will to use it aright.—*The London Times.*

SCIENTIFIC BOOKS

CHEMISTRY

Laboratory Manual for General College Chemistry. By JOSEPH A. BABOR and ALEXANDER LEHRMAN. 289 pp. + appendices + 10 pp. graph paper. New York: Thomas Y. Crowell Company. 1940.

THIS laboratory manual is designed primarily for those students who have some background for chemistry. Accordingly, emphasis is placed on laboratory technique and on stressing the limitations of quantitative measurements. The numerous problems in the experiments elaborate upon principles and involve numerical calculations to illustrate quantitative relationships. It is interesting to note a detailed description of weighing has been omitted.

The material is presented in the "Work Book" or "Fill In" type of arrangement. An innovation in the manner of printing is the use of two columns per page as employed by the scientific journals. Accordingly, it is not as difficult to read the printed matter as when the single column arrangement is used. It is unfortunate, however, that the amount of space provided for answers is too limited for the usual response that a teacher would expect.

Extensive appendices which include data frequently used in the solution of problems and in the performance of experiments are designed to place the responsibility upon the student for selecting pertinent information for use in a particular problem.

The exercises are especially well planned and given very explicit directions on laboratory technique. Each exercise begins with a discussion of principles and is followed by directions and problems.

An abridged Hubbard "Periodic Chart" is printed