is patently false. One has only to point to the thousands of biologists of all kinds, of geologists, mathematicians and other scientists whose work has no immediate relation to the war;[1] and to the many laboratories which are operating as usual without reference to either the war or the government. And is it true that "there are no secrets in the oil industry for the duration"?

Scientists should consider what the motives are which impel a representative of one of the great oil corporations to such gross exaggeration. Is it concern for the public good or for corporation profit? Dr. Egloff on other occasions has expressed his vigorous opposition to the Kilgore Bill in still less measured language[2] and it is evident that his fears are aroused by section 7—"Protection of the public interest in discoveries and developments financed by the United States"—which declares that property rights in discoveries made with public funds are to be vested in the public, and providing for just compensation to the discoverer. This seems to strike at the basis of private monopoly control based on exclusive private patent rights. If there are to be no secrets in the oil industry for the duration, it ought for the duration to withdraw its opposition to the legal recognition of such a lesser degree of pooling as is provided in the Kilgore Bill.

As for the opinion of the directors of the American Chemical Society that the bill would "confer totalitarian powers," one can only urge unbiased scientists to read the bill for themselves and to reach their own conclusions on this question.

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CLASS DISTINCTION AMONG AMERICAN MEN OF SCIENCE

IN a recent issue of SCIENCE, Professor S. O. Mast[1] objects to the designation of some one thousand "leading men of science" by a star in the forthcoming edition of the Biographical Directory of American Men of Science.

I object first to the manner of his objection, which seems more suited to a political squib than to a scientific periodical. He introduces the phrase "class distinction" with its logical denotation, but uses it to draw conclusions prejudiced by its political connotation.

I object secondly to the general principle which he puts forward in the name of "democracy," *viz.*, "There should be no fixed differentiation into classes in any group of individuals without the sanction of that group." I set up against this the principle of jurisprudence, "No one should be judged in his own case." I therefore suggest that Professor Mast's suggestion that "the continuation of 'starring' of scientists in the directory be put to a vote of those involved" should not be followed—unless among those "involved" be included all who use the directory or have an interest in its use as well as those whose names are included in it.

I maintain that democracy implies a vote of the whole people, and that Professor Mast's thesis leads to a negation of democracy, namely, syndicalism (against which *I* am prejudiced).

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IS CORRECT LABELLING UNDEMOCRATIC?[1]

Mast, S. O., Ph.D. Johns Hopkins University, Baltimore, Md. Professor of Zoology. In Charge General Physiology, Johns Hopkins University. (1).

SUCH is the description to be found in the Federation Year Book, and to those searching for simple data, it is an admirably succinct label. That such statements quite clearly put The Doctor Professor Chairman Mast of Johns Hopkins University into a most exclusive class, not only amidst some half-million of his local fellow beings, but also in the entire world, is true. In spite of much levity, Ph.D.'s are not yet as common as blackberries and men capable of holding such positions as the above are very scarce. Moreover, to say there is but one Johns Hopkins is a statement of fact.

Consequently, the recent attempt of Dr. Mast to view a matter of simple grading through the curiously wrought lens of a political belief seems rather needless. Indeed, as seen through other glasses in common use in a nearby city, this attempt to remove useful data from a label might be considered false and misleading!

Technical labels have nothing to do with democracy nor any other political pattern, as I feel sure that Professor Mast experimentally rediscovers each time he corrects his examination papers. Nor would it seem really in the interest of science to decrease in any way our efforts quantitatively to estimate everything

[1] Nicholas, J. S., 1942, "The War Problem of Manpower in Biology and Agriculture," *American Scientists*, Vol. 30, pp. 297–298, estimates that in the biological sciences alone exclusive of medicine, there are available about 67,000 scientists. The National Roster of Scientific and Professional Personnel contains the names of thousands more not involved in war work.

[2] Egloff, Gustav, 1943, "Scientific, Technical, Inventive and Industrial Mobilization for War," address at the meeting of American Institute of Chemists, Washington, D. C., March 13, 1943. Scientists should also consult the evidence concerning Dr. Egloff's statements and opinions which were attacked by Judge Arnold and published in "Hearing on S 702 United States Senate," part 1, March 30, 1943, especially pages 9 and 17.

[1] S. O. Mast, SCIENCE, 97: 465, 1943.

[1] "Class Distinction among American Men of Science," SCIENCE, 97: 2525, May 21, 1943.

measurable, even our own abilities. That it should be snobbish to use such grading seems hardly tenable in an age when fruit, vegetables, pigs, meat, fish, flowers, drugs, chemicals and especially incomes are so treated. Why should distinguished professors or scientists expect to be excluded? It is not democratic!

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SCIENTIFIC BOOKS

RELATIVITY

An Introduction to the Theory of Relativity. By PETER GABRIEL BERGMANN. xvi + 287 pp. New York: Prentice-Hall, Inc., 1942. $4.50.

THE book aims to present the theory of relativity to students of physics and mathematics who have had no previous introduction to the subject. The material has been divided into three parts: the special theory of relativity, the general theory and a report on unified field theories.

We will confess that had we no previous knowledge of the theory of relativity we should find great difficulty in following the book. This results not so much from any fundamental difficulty in the subject itself as from the uncertainty concerning the degree of sophistication which one must adopt in interpreting the meaning of things at certain stages. Only by drawing upon his previous experience in this matter and by supplementing the material of the book by much interpretation and clarification drawn from his former thinking is the reader able to find the happy medium appropriate to the spirit of the book, and lying between the two extremes of a superficial attitude and a super-critical one.

Thus, on page 11, the reader may wonder what is intended to be meant by force in a statement which implies that the consistency of the ratio force to acceleration is a law of nature other than a definition. Referring to the introduction of relativistic electrodynamics in Chapter 7, one who has thought deeply on the subject would find it difficult to understand what is meant by the truth of Maxwell's field equations without supplementation by a force equation.

The foregoing illustrations are simply samples of many places in which one without additional background would find difficulty in fixing in his mind the matter of what is definition and what is experimental fact or assumed law of nature. However, such difficulties must inevitably arise in any book which attempts to cover a wide field in a relatively limited space, and the work will undoubtedly be found to be of considerable value to those who, having some acquaintance with the subject, desire a standard of reference; and it will be of great value to those who are able to read it under conditions in which there is at hand somebody who has thought deeply on the subject and is able to interpret to them such uncertainties as may arise.

The fact that the book has a foreword by the father of relativity, Albert Einstein, naturally enhances its value and dignity.

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MICROBIOLOGY

Microbiology and Man. By JORGEN BIRKELAND. New York City: F. S. Crofts and Company. 478 pp. 35 figs. $4.00.

THE past ten or fifteen years have seen a remarkable development of popular interest in microbiology with a corresponding increase in the number of academic or non-technical students who take a course in bacteriology as a "cultural" subject. A large proportion of these choose this subject not so much from any curiosity concerning the nature of bacteria as from a curiosity, sometimes almost morbid, concerning disease. One can barely keep them awake when lecturing on the morphology and physiology and classification of bacteria, but can hold them spellbound when describing the symptoms of rabies. It is for such students that this book has been written.

The pragmatic approach to the subject is indicated by the title and by the first statement in the preface—"the proper study of mankind is man." To the reviewer it still seems that the proper study of the student of microbiology is the microbe, but he realizes that in this he is somewhat out of fashion.

In Dr. Birkeland's book emphasis is placed upon the effects of bacteria upon man, and while industrial or agricultural relations are mentioned here and there, mainly the book is concerned with bacteria in relation to human disease. An introductory portion of 130 pages considers the morphology and physiology of bacteria; the chapters on sterilization and disinfection are especially complete. A second section (50 pages) is concerned with general principles of infection and immunity, including epidemiology. A third section (184 pages) describes some of the more important infectious diseases and the organisms which cause them. Such details as age, racial and seasonal incidence; history; mode of spread and means of prevention, are gone into rather thoroughly. A fourth section (77 pages) deals with the microbiology of food, milk, water, sewage and soils, again with major emphasis on disease prevention. An appendix presents an outline of the classification of bacteria according to the latest edition of Bergey's Manual, a glossary of technical terms, and a list of references to various general and special works on microbiology.