might strengthen the party loyalty of a wavering area by planning development of low-grade ore deposits, planting an experimental crop or starting a Federal school.

(3) The bill ought to satisfy the political element interested in suppressing private enterprise and substituting government by administrators who "serve at the pleasure of the President." Not the least contribution to scientific achievement through the centuries has been made by statesmen who have planned and fostered political freedom. Only in a free society can the cooperations and initiatives flourish which generate the unplanned and unforeseeable major advances of science. The bill gives the new office power "To make, amend, and rescind appropriate rules and regulations to carry out the purposes of this Act and all the powers and duties vested in the Office, which rules and regulations shall have the force and effect of law." Since one of the declared purposes is "to promote the full and speedy introduction of the most advanced and effective techniques . . ." and another is "to assemble, coordinate, and develop for use, in the public interest, all scientific and technical data and facilities . . .," there is here a clear avenue for governmental interference with every detail of laboratory, classroom and shop. The assertion of Dr. K. A. C. Elliott and Dr. Harry Grundfest[2] that the bill should not be attacked on the ground of "regimentation" and their comparison of the powerful new office with such limited agencies as the Public Health Service seem naive.

But destructive criticism of this bill is not enough. Science and expertness generally are affected with a public interest. If scientists as individuals persist in ignoring the social responsibilities of science, there evidently is serious risk that objectionable political measures will be improvised. In universities and scientific organizations the innocently selfish leadership of specialists must be supplemented by leadership aware of the world.

JOHN Q. STEWART

PRINCETON, N. J.

STARS IN "AMERICAN MEN OF SCIENCE"

THE note on stars for American men of science by Dr. S. O. Mast appearing in SCIENCE for May 21, 1943, was read with interest.

The suggestion by Dr. Mast that we ask for a vote on the stars in "American Men of Science" by those concerned is a good one. This has already been done. All those who are included in the sixth edition of the directory were asked whether the stars should be included, and a majority voted for their continuation. A minority of those who replied suggested various ways by which the method might be revised. Accordingly, the American Association for the Advancement of Science was asked to appoint, and appointed, a committee, to take up the question, but owing to the war emergency this committee has not been able to meet. In order that there may be continuity it has been decided to use the same method as in previous editions. When the eighth edition comes up for editorial consideration it is hoped that this committee may be able to function, and that the editor be advised as to the best method to carry out the voting.

Much discussion has appeared in SCIENCE and in earlier editions of the directory in regard to the stars. It has been pointed out that there are advantages and disadvantages; but up to the present time, the advantages have appeared to overshadow the disadvantages.

Election to the National Academy of Sciences takes care of rather a small group of scientific workers and the stars in "American Men of Science" make possible a wider recognition of leaders in science in their respective fields.

JAQUES CATTELL,
Editor, American Men of Science

AUTOBIOGRAPHY IN A DEMOCRACY

IN SCIENCE of February 19 under the title "What Price Glory" Professor Warren T. Vaughan of Richmond, Virginia, discusses in an entertaining way the inequal quality and length of many of the sketches which make up that indispensable volume, "Who's Who in America," while in the current SCIENCE (May 21) under the caption "Class Distinction Among American Men of Science" the method of starring 1,000 leading scientists by a sort of popular vote as done in the past five editions of "American Men of Science" is ridiculed by Professor S. O. Mast, of Johns Hopkins University.

Albeit these criticisms have their value as a part of current notation and opinion, yet they need not be taken over-seriously. The compilation of these volumes is a severe task; they are gotten out hurriedly. The publishers must and in a way may fairly depend on the *en masse* result. Both the participants and subscribers find that the final result is effective, meeting the many thousand ever-varying individual uses and needs. All is like the majestic flow of some great river, the Mississippi, for instance, as I remember it when long since doing river and harbor work below St. Louis. "Mark twain"! Certainly we see that those who have reached great distinction may well show a most becoming modesty and shorten their sketches, the main facts of their lives and their achievements being well known to all. Then too, there are facts of importance not easily brought into the average sketch. All of us work forward towards some greater objective and goal, and it must often prove difficult to set forth

[2] SCIENCE, April 23, 1943, p. 376.

facts and problems within the limits available. For myself, I'd like to call out from the mountain top the unequalled educational value of the *Fossil Cycad National Monument* as often and clearly told in SCIENCE. Surely the biographic approach by the law of averages has validity and convenience too. The "International Who's Who" is in its brevity of form in no wise an exception.

G. R. WIELAND

YALE UNIVERSITY

QUOTATIONS

MOBILIZING SCIENCE

THOUGH the public has paid little attention to Senator Kilgore's bill which would set up an Office of Scientific and Technological Mobilization, few recent proposals have been the subject of more controversy. Senator Kilgore wants his proposed office not only to draft all research scientists but to develop science and technology, encourage inventors and guide the President and Congress in scientific matters. The Army, the engineering societies, the trade associations and the directors of industrial research laboratories oppose him almost unanimously. On the other hand, many university professors, some of the higher officials of the War Production Board and a few corporation executives, among them Henry J. Kaiser, see merit in his bill.

Despite assertions to the contrary, scientists and technologists are not fully mobilized. So far as private research is concerned, industry has been left alone, so that we have much competition in the development of plastics, substitutes, processes for making alcohol, synthetic rubber and high-octane gasoline, and ten thousand other items. Except for the Office of Scientific Research and Development under Dr. Vannevar Bush, we have done virtually nothing to unify government, university and industrial laboratories to meet new war needs. Fundamentals are usually avoided. Yet it is out of fundamentals that new procedures emerge, as we have learned from the uses to which the vacuum tube, photoelectric cells, radio, x-rays have been put. The basis for all these was laid by independent scientists and inventors, who too often were rebuffed.

The proposal that Senator Kilgore has made deserves a fair hearing of Congress. Possibly stronger safeguards against the regimentation of industrial research are called for, and possibly Dr. Bush's method of contracting with university and industrial research laboratories for the solution of specific military problems may be just as effective as mobilizing the key research men in the country. Certainly corporations which are engaged in strikingly original and promising work or which are attacking fundamentals should be left alone. Establish Senator Kilgore's office with proper safeguards and it will have its uses as an independent organization which, like the Bureau of Standards or the United States Public Health Service, will conduct research on its account in fields now ignored, with industry pursuing its own way.—*The New York Times.*

SCIENTIFIC BOOKS

OBJECTIVE MEASUREMENT

Objective Measurement of Instrumental Performance. By JOHN GOODRICH WATKINS. 88 pp. Appendix. New York: Bureau of Publications, Teachers College, Columbia University. 1942. $1.60.

DR. WATKINS painstakingly seeks for a measuring stick to be used for the evaluation of playing ability on a musical instrument. He calls attention to the general acceptance of the consideration of musical ability as an innate capacity and deplores the lack of criteria for achievement other than teacher's marks which are known to be quite unreliable. The few sporadic attempts in the construction of achievement tests were found to be limited to sight-singing and vocal performance, and the evidence indicates that no group test of musical achievement has as yet been constructed with the degree of reliability necessary for individual differentiation.

It would have been desirable to indicate in the title of the book the fact that this test is limited to the playing on the cornet, particularly in view of the author's expressed desire for real scientific objectivity.

The study has two major objectives: (1) To determine the possibility of measuring objectivity achievement on a musical instrument. (2) To find out, in a group of performers on such an instrument, the relation between sight-reading ability and technical skill after various periods of study.

The author admits that traits other than sight-reading and technical skill—such traits as involve interpretation, for example— are a vital part of successful performance, but he does not regard such matters as susceptible of objective study. The test is, therefore, limited to what is termed "sight performance and practiced performance on a musical instrument."

To provide a basis for the tests, the cornet was chosen as the instrument to be used for the rather