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.

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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

questionable reason that fine discriminations of pitch were regarded as not of such prime importance as they would be in the case of such instruments as the violin. Such subordination of pitch requirements seems regrettable.

The construction of the performance test for the cornet was handled very carefully and purposefully. Recent methods for the instrument, published in America, were submitted to school music instructors and private teachers of the cornet, to ascertain which of the methods were most widely used throughout the country and how long the average student took to complete each of them.

The criteria which define difficulty come consistently to the foreground, particularly in the preliminary tests.

The musical measure was adopted as the scoring unit, *i.e.*, a measure was counted wrong if any error occurred within it. Such errors were carefully defined in the instructions to insure objectivity of scoring. Yet in deciding what constitutes an error, many musicians will question the criteria which exclude from such errors "pauses between measures no matter how long" and "tones badly out of tune"; for is not the difficulty, even of reading, enhanced by the player's search for perfection in intonation?

Testing with the preliminary forms offered determination of the difficulty levels and the selection of the final forms of the test. It is quoted in the conclusion that a Gestalt is involved in the reading of music and that an organismic interpretation is desirable when experimenting with melodies. It seems almost unbelievable that this same thought is not applied to the measurement of performance by the adjudicator. No provision is made for it whatsoever.

It is wisely remarked that most human skills seem to be distributed normally among the population, and it might be questioned whether all those who have a proper lip control and musculature for a desirable cupmouthpiece instrument take up the cornet or some other member of that family. A like assumption is made with reference to sight performance ability on the cornet being normally distributed. It was found that both sight-reading ability and technical skill develop at greater rates for the first two years than subsequently, the early progress being greater for the latter than the former, while later progress is the same for both. This would seem to indicate that considerable stress is being placed on technique by the teachers of beginning pupils. And now come some sad admissions, in that "above five years the shape of the curves is not reliably determined" and, further, "there is a wide variation in the abilities of different students after any period of study, some having progressed two or three times as fast as others."

The overview and summary offer some pertinent suggestions: (1) Standardized grading of music would be valuable. (2) Teachers spend too little time developing sight-reading ability. The author closes with the hope that the tests themselves will prove useful measures of achievement for the research worker and the cornet teacher. The bibliography quoted is a valuable addition to the little volume.

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PEDIATRICS

Advances in Pediatrics. Edited by ADOLPH G. DE SANCTIS. New York, N. Y.: Interscience Publishers, Inc. 1942.

IN starting this new series of books, the editors did not want directly to compete with reviews already in the field. The plan was to obtain articles on subjects which have shown recent advances, by authors who are sufficiently authoritative to write "personalized" summaries rather than mere compilations of abstracts. The aim is, for the most part, attained and should make the book a desirable addition to the library of all pediatricians and many general practitioners.

It is not possible to criticize the book in detail. The article on chemotherapy by B. W. Corey is adequate, but unfortunately was written before the author could properly evaluate sulfadiazine. Furthermore, he recommends sulfanilamid in streptococcal infections when it is clear that other less toxic drugs are equally effective. The discussion of electroencephalography by Major N. Q. Brill shows that much work must be done before electroencephalography reaches the usefulness of electrocardiography. R. E. Gross describes his successful method of operating on cases of patent ductus arteriosus. The knowledge of the important applications of vitamin K in pediatrics is brought up to date by H. G. Poucher. Tow's article on premature infants is somewhat uneven. He does not properly evaluate the recent work on the physiological handicaps of these infants—particularly the work of Gordon and Levine. It is now clear that premature infants can not handle high fat diets, and this fact explains why human milk is not the best food for these babies. Furthermore, failure of absorption of fat explains why high calorie feedings may appear to be necessary for premature infants since high calorie feedings are never necessary when diets low in fat are used. Tow also does not go into the recent work which shows that infants, particularly prematures, have poor renal function compared with that of later life. This explains the high water requirement as well as the susceptibility to acidosis. This knowledge, which was lacking formally, should form a firm basis for regulating the fluid intake. Also there is recent work on