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.

ABRAHAM PEPINSKY

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

the psychological reactions of babies to food, and as this work develops we may find that giving babies solid foods at a time when they can not mechanically manage them is a cause of some of the adverse reactions at meal time that are so common after the first year.

Hode's discussion of virus infections reveals that research on poliomyelitis and encephalitis has been particularly fruitful. The evidence that the virus is in the stools and that flies may carry the infection is revolutionizing all concepts of the epidemiology of poliomyelitis. Nelson's discussion of tuberculosis reveals really nothing new but gives an excellent summary of modern concepts.

The discussion of endocrinology is particularly disappointing. Apparently clinical endocrinology is still far, far behind the experimental work. There seems little excuse for saying that iodine therapy of toxic goiters leads to exacerbations when continued, since most authorities agree that it merely masks the state of hyperthyroidism. Other errors and improper evaluations are present in this article.

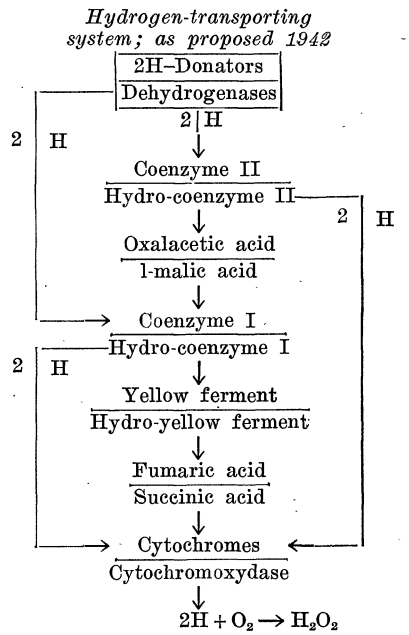
To general biologists and perhaps practitioners, Sabin's article on toxoplasmosis will be the most interesting. He was able to give an almost complete picture of a newly recognized protozoon infection. The organism invades almost all tissues and can occur in a wide variety of hosts. The exact mode of contagion and possible reservoirs of infection have yet to be worked out. The article should enable others to diagnose the cases and thus fill in the gaps in the picture.

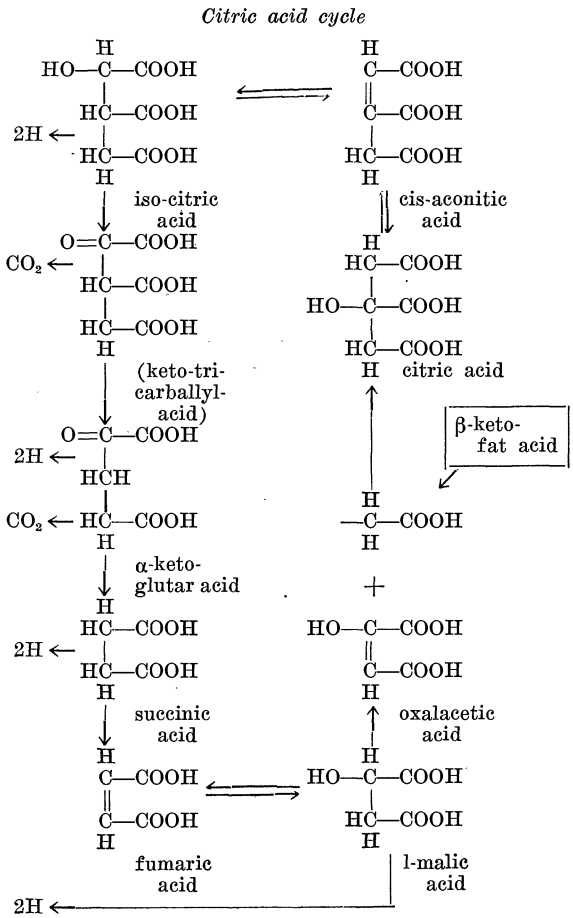
DANIEL C. DARROW
YALE UNIVERSITY SCHOOL OF MEDICINE

SPECIAL ARTICLES

CITRIC ACID CYCLE; SUGAR AND FAT-BREAKDOWN IN TISSUE METABOLISM

KREBS and Johnston[1] suggested the citric acid cycle to be a main link in the breakdown of carbohydrates. I contended that the citric acid was artificially produced under the conditions of their experiments.[2] I have shown that all hydrogen arising from sugar breakdown is either collected with coenzym II and from there transported to oxalacetic acid (so reduced to l-malic acid), or with coenzym I and then transported to fumaric acid (so reduced to succinic acid) and to oxygen.[3] According to Krebs' first opinion all





[1] H. A. Krebs and Johnston, *Enzymologia*, 4: 148, 1937.
[2] F. L. Breusch, *Zeitschr. für physiol. Chemie*, 250: 262, 1937.
[3] F. L. Breusch, *Enzymologia*, 10: 165, 1942; in print, 1943.