the course men actually in a position to apply the methods.

Suitable machinery for organizing and financing the suggested course was already in existence in the engineering science and management War Training Program, financed by the Office of Education. The institutional director of the program at Stanford took up the plan with enthusiasm. Aided by active support from the Ordnance Department, through its San Francisco District Office, he was able to bring together in early July, less than six weeks after the original suggestion had been received, a group of twenty-nine key men from industries holding war contracts and from procurement agencies of various branches of the armed services. These men, with three others, entered upon an intensive ten-day course with classes running eight hours a day. All thirty-two men completed the course.

The success of the first course, given at Stanford University in July, led to demand for a repetition. A second course, offered in Los Angeles in September, was equally gratifying in its results. Ten of the men attending the second course came from organizations that had sent one or two men each to the first course. Further repetitions of the course are in prospect. The two courses thus far offered have given training in specialized statistical methods for saving time and materials in the war production program to thirty-nine key men from war industries, assigned by their companies to attend the course, to fifteen men assigned by various branches of the armed services, and to five others admitted on the ground that because of previous special training in statistics they might become peculiarly useful to either war industry or the armed services.

The instructional program itself rested on a high degree of cooperation. Four instructors worked together in each course. Two, Professors Eugene L. Grant and Holbrook Working, came to the enterprise from different departments of Stanford University. The Bureau of the Census contributed the services for both courses of Dr. W. Edwards Deming. A fourth man on the staff for each course was drawn from industry to present the point of view of a man meeting from day to day the practical problems of applying the methods under discussion. This place was taken in the first course by Mr. Charles R. Mummery, of The Hoover Company, North Canton, Ohio, and in the second course, by Mr. Ralph E. Wareham, of the General Electric Company.

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SCIENTIFIC BOOKS

THE CRISIS OF OUR AGE

The Crisis of Our Age: The Social and Cultural Outlook. By PITIRIM A. SOROKIN. Pp. 338. New York: E. P. Dutton and Company., Inc. 1941. $3.50.

THIS is an epitome for the general reader of the author's technical four-tome "Social and Cultural Dynamics." The large proportion of space devoted to the historic rôle of the sciences in Western civilization would alone justify a review of the work in SCIENCE.

That our Western civilization is in crisis few would question. The crisis, Sorokin maintains, is not merely an economic or political one. It involves almost the whole of Western culture and society: art and science, philosophy and religion, law and morals, manners and mores, the forms of social, political and economic organization, the nature of marriage and the family. These various phases of our culture and society are largely interdependent and each is largely derivative from a dominant form of prevalently held basic principles and values.

To the three dominant forms or supersystems which Sorokin analyzes he gives the names ideational, idealistic and sensate. In the ideational form, supersensory, other-worldly and religious reality and value are regarded as supreme. In the sensate form, sensory, this-worldly and secular reality and value are so regarded, while the supersensory is considered either doubtful as reality or fictitious as value. In the idealistic form, both realities and values are recognized. At no given time in any given culture and society does any one of the three forms exclusively prevail and operate, either in all compartments of life or among all classes and individuals, to the complete blackout of the others. The three supersystems are conceived more as dominant forms of integration than as absolutely monopolistic ones.

One or other of the forms has historically held sway in different periods of all the great cultures. Thus, Greek culture from the eighth to the end of the sixth century B.C. was dominantly ideational, and in the fifth and fourth centuries B.C., idealistic; while Greco-Roman culture from the third century B.C. to about the fourth century A.D. was sensate. Then the ideational configuration came to the fore, persisted through the medieval period to the end of the twelfth century, and

was succeeded by the idealistic in the thirteenth and fourteenth centuries, which in turn gave place to the sensate that has prevailed in modern Western culture for the last four or five hundred years.

The cause of the historical oscillation from system to system is at base internal. Both the ideational and the sensate systems are partly true and partly false. When one of them tends to become monopolistic, its false part grows at the expense of its valid part, leading to a partial retreat from total human reality and value, with disastrous consequences for intellectual and esthetic creativeness, economic security and social order.

Our present crisis is due, Sorokin believes, to the fact that the fundamental form of modern Western culture and society—the sensate—is declining. This decline will be followed, not by the death of Western civilization as such, in the Spenglerian or other pessimistic sense, but by survival with the emergence of and shift to a neo-ideational or neo-idealistic dominant configuration.

The present work, like the original "Social and Cultural Dynamics," is well calculated to call forth either rabid or rapturous responses in the reader, depending in part on his sympathies with or antipathies to "ideational," "idealistic" or "sensate" philosophies of life. For while the author defends his hypothesis with an impressive mass of factual data, he permits his own sympathies and antipathies to show through on page after page of his discussion, and perhaps even in the appellation "sensate."

As regards Sorokin's statistical methods, for which he has been so severely criticized, it must be said in his defense that most of the criticisms have been met by him in anticipation (*cf., e.g.,* "Social and Cultural Dynamics," III, N. Y., 1937, ch. 9). He explicitly recognizes weaknesses in his statistical treatment of the cultural and social units manipulated, but maintains that it yields an appreciably more accurate measurement of long-time cultural drifts than does the customary verbal quantitative treatment of the classic historian.

Less defensible and more questionable are a number of concrete historical statements. Such, to illustrate by just three, are: "the climax (in number and importance of discoveries) in most of the exact sciences was reached, not in the twentieth century, but either in the nineteenth or (for mathematics) the eighteenth century" (p. 128); "psychology and anthropology of the twentieth century are, again, either a mere accumulation of so-called facts or, even worse, a definite decline so far as real insight into the respective phenomena is concerned" (p. 267); "mental disease [not merely clinical recognition thereof or institutional intake] has been on the increase, particularly during the past few decades" (p. 207).

Sorokin appears to have made a good case for the operation of internal factors, above noted, in the historic oscillation of supersystems. But are these the only crucial factors? For example, as "ideational" patterns tend on the whole to be more prominent in cultures of low than in those of high scientific and technological levels, may not the decline of the sensate supersystem and the emergence of the ideational in Europe about the fourth and fifth centuries A.D. have been in critical measure the consequence of external causation, namely, the barbarian invasion? As regards, then, Sorokin's prognosis for Western civilization, one is inclined to say: Maybe, but can we predict without knowledge of *all* the great determinant factors in change?

All in all, however, whether we agree or disagree in whole or in part with the author, his great synthesis is an arresting one. He has had the courage to attempt a task of exceptional magnitude and he has carried it to completion with dogged energy, singular resourcefulness and originality, and high creative ability. His theory, at its lowest valuation, gives us a formula that enables us to think of great masses of data in an orderly and meaningful way. At a higher valuation, it gives us illuminating insights into some of the most significant inner realities of culture, society and life, and of the impact of science thereon.

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SPECIAL ARTICLES

THE PRESENCE OF A CORTIN-LIKE SUBSTANCE (COLD PROTECTING MATERIAL) IN THE URINE OF NORMAL MEN[1]

THE fact that adrenalectomized rats and mice are more sensitive to low environmental temperatures than normal animals has been demonstrated by various investigators[2, 3, 4, 5]. Adrenalectomized rats subjected to low temperatures may be protected by adrenal

[1] Supported in part by a grant from the Josiah Macy Jr. Foundation.

[2] F. A. Hartman, K. A. Brownell and A. A. Crosby, *Am. Jour. Physiol.*, 98: 674, 1931.

[3] H. Selye and V. Schenker, *Proc. Soc. Exp. Biol. and Med.*, 39: 518, 1938.

[4] R. Tyslowitz and E. B. Astwood, *Am. Jour. Physiol.*, 136: 22, 1942.

[5] M. Zarrow, *Proc. Soc. Exp. Biol. and Med.*, 50: 135, 1942.