

curve resolves itself into a series of troughs and crests", with each crest reaching to a new high level and no trough as deep as the one before, is one that is not always sufficiently appreciated nowadays. Personally I have long believed that this is one of the fundamental lessons that can be derived from the general study of human progress: history may indeed repeat itself, but the repetition is not merely circular; it is spiral. It is indeed three-dimensional.

In a general connexion, on p. 21, the author throws out a suggestion that "cultures are tending to merge into culture", which will perhaps fill some people with foreboding—the cultural temperature resulting from such a merger would probably be a tepidity of the Laodicean kind! On the other hand, of course, the "limitless multitude of Neolithic cultures" referred to on p. 56 must have constituted an equally unsatisfactory background for human advancement. Nevertheless, it has always seemed to me that this was a tremendously important moment in cultural evolution: that the discoveries which led to the rise of the Neolithic civilization were perhaps the most fundamentally important ones ever made by humanity. Community life as we know it, with all the social and moral problems it involves of the regulation of human behaviour, dates from the discoveries of agriculture and the domestication of animals.

Very interesting indeed to us to-day is Prof. Childe's implication in his last chapter that the later Roman emperors introduced Nazism in an effort to escape the oncoming decline and death of civilization. It is perhaps not *quite* so satisfactorily explained exactly why the ancient world was dying, unless we accept the natural idea of old age. Civilizations are not unlike individuals. They are born as a result of culture contacts and, unless killed, survive for a span before disappearing. But, as the author's optimistic creed indicates, they do hand on a something which is taken over by their successors—the next great civilization to arise.

This more than worth-while book contains many facts—the background material for the study; but it is primarily intended to stimulate thought and to help the reader to understand the general story of human development and, may be, to draw lessons which will help when our own civilization, now in danger of collapse, is once again in process of reconstruction.

M. C. BURKITT.

THE STORY OF MAGNITOGORSK

Behind the Urals

An American Worker in Russia's City of Steel. By John Scott. Pp. 224. (London: Martin Secker and Warburg, Ltd., 1942.) 7s. 6d. net.

THE cause of world freedom owes much to the amazing development of mineral resources and heavy industries in the Soviet Union since the inception of the first Five-Year Plan. In the late 'twenties, thanks to the sagacity and foresight of their leaders, the Russians embarked on a vast scheme of industrialization in the Urals and Western Siberia, far distant from the nearest frontiers, in the face of appalling difficulties. Since the old industrial centre of the Ukraine has been overrun, these newly developed regions have indeed become a stronghold of Russia's unconquerable resistance.

For more than five years John Scott, an adventurous young American engineer, shared the life of the Russian workers while helping to build blast

furnaces and operate the coke and chemical plants of Magnitogorsk, on the eastern slopes of the Ural Mountains. His remarkable story, written with stark realism, tells of the triumphs and privations of those who struggled to change Magnitogorsk from a squalid village of Kirghiz and Bashkir herders into one of the world's largest metallurgical plants, with a production of about 3 million tons of steel a year. Even more impressive than the documented statistics which bespeak the progress of material achievements is the illuminating account of daily life in Magnitogorsk, of the patriotic enthusiasm, the intense striving after education, the confusion and disorders, the unquestioning obedience to the dicta of the Communist Party, and of the purge which struck the city in 1937.

The author is neither a dilettante nor a partisan propagandist; he actually dwelt and toiled as a Russian, and although his writing is imbued with the spirit and atmosphere of the Revolution, it is none the less a sane and balanced study of the benefits and shortcomings of socialism as it recently functioned in Magnitogorsk.

If this extraordinary book attains the wide circulation it deserves, it should help to promote better Anglo-Russian understanding. Especially should it be read by those who have not ceased to wonder how the peoples of the Soviet Union have so successfully withstood the armed might of Nazi Germany.

DAVID WILLIAMS.

ORGANIC REACTIONS IN LIQUID SYSTEMS

Mechanism and Chemical Kinetics of Organic Reactions in Liquid Systems

A General Discussion held by the Faraday Society, September 1941. Pp. ii+601-806. (London and Edinburgh: Gurney and Jackson, 1942.) 15s. net.

THIS volume contains fourteen papers on various aspects of the mechanism and kinetics of organic reactions in liquid systems, together with reports of discussions on them at a meeting of the Faraday Society in September 1941 (see NATURE, Jan. 31, 1941, p. 126). The topics included various kinds of substitution reactions, elimination reactions, hydrolysis, addition and condensation, prototropic changes, anionotropic changes, substitution reactions, free radicals, Cannizzaro reaction, and ring closure. A wide and important field was thus covered.

The main emphasis was laid on the electronic theory and modern interpretation of the processes discussed, and as the papers are in the nature of monographs by leading workers in the fields, and have full bibliographies, the interesting and valuable character of the book will be appreciated. Modern organic chemistry is making full use of recent advances in physical chemistry, and in the theory of atomic structure and bond formation which has been worked out in theoretical physics. Some idea of the great advances in the understanding of organic reactions which this new knowledge has made possible can be gathered from the work reported here, and both chemists and physicists should find the volume both stimulating and useful.

The Faraday Society General Discussions are well known and appreciated as valuable contributions to the advancement of knowledge, and the present volume well maintains the high standard set in previous General Discussions.