Formation, to assure more "objective" assessment and analysis. A search was made for environmental factors that might be implicated in the genesis of clinical schizophrenia, and for factors that may have led to discordance. The authors employ their keen grasp of the basic knowledge in this field to theorize about and provide a model for the etiology of schizophrenia. They conclude that specific genetic factors clearly underlie schizophrenia, whereas environmental factors are nonspecific and idiosyncratic. Schizophrenia is described as the "outcome of a genetically determined developmental predisposition."

Although the book addresses itself primarily to an audience conversant with both schizophrenia and genetics, any scientist or intelligent layman willing to dig into the book to satisfy his questions regarding heredity in schizophrenia will find his reading time well rewarded. But the fundamental answers to current questions about genetics in schizophrenia still remain outside our grasp. They probably will come not from twin studies, which Gottesman and Shields seem to have exhausted, but from new and innovative approaches to the problem.

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Public Health Program in China

Fun-Zhi Schistosomiasis Shou Chai (Prevention and Control of Schistosomiasis Handbook). Compiled by the Revolutionary Committee of Shanghai Schistosomiasis Research Institute. People's Press, Shanghai, ed. 2, 1971. 140 pp., illus. Paper.

Schistosomiasis, a deadly parasitic disease affecting 200 million people in the world, is an illness that can be better attacked by prevention than by treatment. It is caused by three species of blood flukes of the genus *Schistosoma*. In China, it is caused by *Schistosoma japonicum* lodged in the blood vessels of liver and intestine, damaging these organs through the enormous number of eggs laid by the worms. The disease is transmitted by amphibious snails, *Oncomelania hupensis*, which discharge larval parasites, cercariae. People acquire the disease through contacting the cercariae in infected water. It has been an endemic disease in the coastal and central area of China. According to an official estimate, 10 million people in China were affected in 1958. If the disease is untreated, death can result after 4 to 5 years of illness. The Chinese word for schistosomiasis means literally "blood-sucking worm disease."

This compendium on schistosomiasis is for sale in China to foreigners as well as to local people. (Some books are not for sale to foreigners.) It opens with Chairman Mao's 1958 poem lamenting schistosomiasis among the peasants, followed by his quotations on health care and his exhortation that "schistosomiasis must be wiped out." There are seven chapters with 29 figures and 18 tables or charts. The first chapter deals with the life history of *Schistosoma japonicum*. The second and third chapters deal with methods of eliminating the vector snail and with disposal and treatment of excreta. The fourth chapter gives instructions for water safety and measures to prevent contracting the larval parasite in water. The fifth and sixth chapters are on surveying and treatment of the disease. The last chapter is on the prevention and treatment of schistosomiasis in cattle.

In general, the book deals with attacking the disease on two major fronts: (i) to eliminate the snail vectors, and (ii) to treat the affected people and farming cattle. To generate motivation, quotations of Chairman Mao appear here and there, and especially at the beginning of each major topic. Throughout the book there is a call for an all-out effort, with Mao's quotations serving as booster shots. Samples are: "United with cooperation," "Be brave and not afraid of hard work," "Bear responsibility with deep concern for people," and "Survey and analyze the situation, arm with proper preparation, lest you fight an aimless war."

The chapters dealing with the control of snails start with methods and problems of surveying snail populations with instructions for attacking snails in eight different kinds of habitat: rivers; canals; rice paddies; fish ponds; swampy land; the so-called "infectable environment," which includes piles of roof tiles, plant roots, and bridge legs; rural housing areas; and plantations. Snails are being attacked on all levels and by utilizing all means and manpower. The campaign involves changing the entire ecological picture if necessary. Thus, land is flooded to drown snails, leveled to bury snails, sprayed to poison snails, burned to kill snails. Wherever snails are found, people are instructed to turn over the soil and plough under, or to drain canals, to dredge riverbeds, to fill ditches, to cover swamps, to cultivate wasteland. Regardless of the method, the principle always is to combine snail control with agricultural production. In short, wet land may be changed to dry land and dry land to wet land if necessary.

The major molluscicides used are sodium pentachlorophenate, calcium cyanamide, and "schistosome preventive 67," a Bayer-73 mixture synthesized in China through the cooperative efforts of the People's Liberation Army, barefoot doctors, and the revolutionary committee on research and prevention of schistosomiasis.

The chapter on control of parasites in the excreta describes the construction of latrines and of septic tanks with sedimentation compartments so that when the egg-containing excreta reach the last compartment the material will be safe for use as fertilizer. To take advantage of the ammonium hydroxide, an egg-deteriorating agent in urine, the fecal materials of man and animals are piled together, mixed with urine, and stored for a set time before being utilized. Ammonium hydroxide and calcium cyanamide are also mixed with the excreta to kill parasite eggs. Safety of drinking water is emphasized. The peasants are taught how to drill a well and cover it properly. People are advised to avoid direct contact with cercariae in areas where there is infected water and to wear shoes and clothing treated with chemicals when wading. The diagnosis for disease is entirely Western and is updated to include step-by-step fecal examination and identification of eggs as well as tests for serum response to eggs.

The chapters on treatment include many forms for doctors to fill out, from which data can be compiled easily for research studies. The major drugs used are "schisto. 846," an antischisto drug combined with milk powder; antimony-273; and F30066, a furane compound. All these drugs are given by names and numbers with descriptions of their appearance but no information on chemical composition. Dosages are carefully calculated, with warnings and detailed instructions for the treatment of undesirable side effects. Chinese herb medicine is also used.

In general, this is a handy book, cov-

ering every aspect of schistosomiasis and its control. It is designed to be used in the farming areas, where 80 percent of the population lives and the place where snails and schistosomiasis flourish.

So the Chinese display an intention to control schistosomiasis whatever the human cost. The mobilization of human energy is unbelievable, and at times it is hard for Westerners to comprehend.

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Metals for Theorists

Introduction to the Theory of Normal Metals. A. A. ABRIKOSOV. Translated by Alexis Baratoff. Academic Press, New York, 1972. xii, 294 pp., illus. $16.50. Solid State Physics, vol. 12.

Abrikosov has produced a clearly written and self-contained book whose content is rather aptly described by the title. As an introduction it stops distinctly short of the level of serious research papers in both the detail and the sophistication of the treatment. (It does, however, assume a good knowledge of quantum physics.) It is a book for theorists, by which is meant not only that most references to experiment are omitted but that the theory is presented as if the author expected to follow up this course with a more sophisticated treatment. Results that could be obtained by a neat trick or physical argument are often presented in a more formal and elaborate manner as if in preparation for the application of the methods to more difficult situations.

The book makes no attempt to give a balanced coverage of all topics important to the theory of normal metals. It lays relatively more stress on transport phenomena, particularly those historically central to the understanding of the Fermi surface. It includes also a discussion of certain quantum effects that are of importance. However, there are some topics central to a complete theory of normal metals which Abrikosov chooses to give minimal treatment, including band structure calculational methods and results, pseudopotential theory, and practically all the theory of electron-electron, electron-phonon, and electron-impurity interaction.

While reflecting on the author's choice of topics and level of coverage, I discovered that the book is an outgrowth of a series of lectures given in India in 1966. Seen as a limited lecture series to a specialized audience, the choice makes considerable sense. (It does not retain the colloquial style of the usual lecture series book, however.) There are a few topics added later dating from about 1968, but by and large the material and its treatment are no more contemporary than those of Ziman's book on solid state theory.

In spite of the date of writing, there does not seem to be a direct competitor (in English) to the monograph, although nearly all of the material can be found in other books. However, those interested in this field of research should watch for a work (now only in Russian) of I. M. Lifschitz, M. Ya. Azbel, and M. F. Kaganov ("Electron Theory of Metals," Science Publishing House, Moscow, 1971). If that work receives as felicitous a translation as that provided for Abrikosov by Alexis Baratoff, it will be very interesting, because of its more modern choice of topics.

Baratoff has provided, in addition to a very readable translation, a number of valuable footnotes clarifying otherwise confusing points. All in all, it is unfortunate that publication of the book was delayed so long after completion of the manuscript, but many students of the subject will still want to add it to their libraries.

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Vibrational Properties

Thermal Expansion. BERNARD YATES. Plenum, New York, 1972. x, 122 pp., illus. $12.50. Monographs in Low-Temperature Physics.

According to the publisher, this is the first volume of a new monograph series being edited by John G. Daunt and K. Mendelssohn. The audience at which the series as a whole is to be aimed is not specified, but the volume under review comes reasonably close to its stated mark of being suitable for undergraduates and postgraduate workers "who wish to gain an introduction to the vibrational properties of solids."

The chief difficulty with the general subject of vibrations in solids is that either too much or too little information is at hand. The well-known texts in solid state physics, such as Kittel's, usually give satisfactory introductory treatments of crystal structures, reciprocal lattices, and quantization of lattice vibrations for one-, two-, or three-dimensional systems. But when it comes to the analysis of experimental data for real solids the reader has to be satisfied with a few short paragraphs at the end of a chapter. At the other extreme, there are available comprehensive reviews of lattice theory and its applications that can easily frighten the beginner and the average experimentalist.

Yates has chosen to stay close to the realm of actual physical measurements on solids and to describe how information about their vibrational structure can be derived from measured thermodynamic properties, including thermal expansivities. Actually, detailed discussion of thermal expansion is given only one chapter, and in this respect the title of the book is somewhat misleading. A more appropriate one might have been "Thermodynamic and Vibrational Properties of Solids."

Most of the analytical procedures that are described are based on the quasiharmonic model and were developed originally by T. H. K. Barron. The examples given are mainly of insulating crystals such as the alkali halides. Metals, alloys, polymers, and other types of solids are dealt with much more briefly.

To sum up: *Thermal Expansion* meets adequately its limited objective of being post-Kittel but pre-Chocquard. It can be used with confidence.

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Soviet Pronouncements

Science and Technology as an Instrument of Soviet Policy. MOSE L. HARVEY, LEON GOURE, and VLADIMIR PROKOFIEFF. University of Miami Center for Advanced International Studies, Coral Gables, Fla., 1972 (available from its Washington research division, 1225 Connecticut Ave. NW, Washington, D.C. 20036). xvi, 218 pp., illus. Cloth, $5.95; paper, $4.95. Monographs in International Affairs.

This book has two parts, one consisting of translated extracts from Soviet articles and official documents on science and technology, the other an analysis by the authors of "specific issues