the "fully-integrated" and the "in-betweens." These two latter groups, in fact, are mentioned only once, in one paragraph. Keniston makes it clear that his sample of extremely alienated students is not typical of American youth; they were, he says, selected "precisely *because* their alienation was extreme." But while, as he says, there *is* a long scientific tradition of studying the extreme to understand the typical, it is fallacious to endow the normal with the very qualities which the abnormal exhibits. There is a curious leap, from establishing the fact that alienation may be induced by certain qualities found within a culture, to saying that the culture itself is alienation-producing; and from there to the next crag of saying that American culture is an "alienated" one. Yet this is exactly what Keniston does, and the reader of the literature of alienation once more is thrown back on a meager store of information: we are told by Keniston that "We are approaching . . . a new turning point in American society . . .," that there is a "loss in the sense of social power," there is a "mid-century malaise," and that "we have grown discontented, confused, and aimless." Something called a "technological process" is said to be responsible for this, and the preachment is summarized in Keniston's pious words: "We must not return to the past, but transcend the present."

Although American society draws some of its best as well as its worst critics from the ranks of the alienated as here described, it by no means follows that since this is so the society itself is a victim of the very "sickness" which produces its critics. We have never had any hard statistics on the extent of personal alienation in American culture. Yet there are some hard statistics on students; despite the recent rash of student rebellion at Berkeley and elsewhere, it is painfully clear that undergraduate conformists are still as numerically preponderant as they have ever been. To perch a theory of American society on the present student generation (a questionable undertaking at best) would give rise to no such apocalyptic expectations as Keniston here suggests. But to ground this heavy theory upon the tiny band of Inburn, his co-alienates, and their various mothers, sisters, cousins, and aunts, imposes a heavy burden on them; never have so few been used to prove so much.

Fungal Genetics

Little more than two decades ago, at the time that Beadle and Tatum demonstrated the direct relationship between genes and enzymes, fungal genetics as a field of serious research was, for practical purposes, nonexistent. To be sure, a few fungi had been examined genetically, but the genetic aspects of such work was typically more or less incidental to efforts to clarify such aspects as life cycles, patterns of sexuality, and pathogenicity. During the recent past the development of the field has been spectacular along two divergent lines of primary interest: one is the study of the genetics of systems peculiar to or of special significance in the fungi; the other, and by far the more popular, is the study of basic genetics in fungal materials, because of the numerous favorable characteristics for genetical research afforded by the fungi.

Karl Esser and Rudolf Kuenen's comprehensive treatment of the subject, **Genetik der Pilze** (Springer-Verlag, New York, 1965. 503 pp., $17), reflects this dichotomy. Of the seven chapters, the first two are devoted to the morphology and developmental histories of those fungi that have played significant roles in genetical research and to reproduction in fungi, with emphasis on genetic aspects insofar as these are known. These chapters, especially the latter, are particularly welcome because they provide a detailed and up-to-date exposition of a field having a massive but fragmentary literature that has not previously been available in a single account. The authors' interpretations are often quite novel and always definitive; all mycologists will find details and views here with which to disagree, but this should enhance the overall value of this section with respect to the thorough understanding of what follows. The remainder of the book, with chapters on DNA-replication, recombination, mutation, gene function, and extrachromosomal inheritance, deals with the purely genetic aspects of the subject, with particular emphasis on those methods of analysis or phenomena that are peculiar to or especially prominent in the fungi —for example, analysis of ordered and unordered tetrads, heterokaryotic allelic tests, somatic recombination, and the like. Information from studies with other microorganisms but not available for the fungi—for example, replication of DNA and regulatory systems—is included only to the extent necessary to cast the subject of fungal genetics in its true perspective as a significant facet of modern genetics.

This book has much to recommend it to those interested either in fungi or in genetics, and it should be indispensable to those interested in both of these subject areas. Perhaps its most valuable feature is the extent of its bibliographies, which are grouped at the ends of the individual chapters (for example, about 500 references are listed, complete with titles, for the chapter on reproduction), and of its tabular materials, which include, in most cases, the citation of specific references for individual entries. This is the second noteworthy book on fungal genetics published in the past 2 years. The first, *Fungal Genetics* by Fincham and Day, a less exhaustive treatment of the subject than the present volume, nicely filled a need for a well-presented account of a previously neglected area of biological significance. *Genetik der Pilze*, with its somewhat different emphasis and very comprehensive treatment, is a most useful addition to the limited reference literature on fungal genetics. Research workers in the fields of genetics and mycology will derive the greatest benefit from this new treatment of the subject, but it should also find wide usage among advanced students. It is to be hoped that publication of an English edition will not be long delayed.

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Inherited Anemia

The discovery of a single amino acid substitution in sickle-cell hemoglobin heralded a new era in biochemical genetics. The evolutionary basis for the structural homologies and the inherited variation of the hemoglobin polypeptides have served as a prototype for our understanding of the evolution of proteins. The precise structural alterations of the various abnormal hemoglobins have been disclosed with remarkable rapidity. We now recognize some 32 abnormal hemoglobins known to differ from normal hemoglobin by a single amino acid substitution and one abnormal hemoglobin, Lepore, which is the consequence of an unequal crossing over between the β and δ loci.

In sharp contrast to our comprehension of the hemoglobinopathies is our