sional biologists . . . interested in current research on heredity, and laymen who have had some education in biology. . . ." For all but perhaps the last group the book is to be enthusiastically recommended. Far from preparing a dull history or just another review, Ravin has shown the best in literary skill and has allowed the ideas to lead the reader through the course of 65 years of genetics. One is intrigued by the clarity, simplicity, and brevity by which the thought sequence is developed. The major contributions of individual workers are credited without fanfare and without breaking the flow of thought. Although most of the text develops the concepts of molecular genetics as elucidated from microbial genetic systems and biochemical techniques, the legacy of "classical genetics" (defined by the author as pre-1940) is clearly silhouetted. In the last chapter, modern genetic theory is related to the unanswered problems in genetics, and indeed to those of all biology. Ravin's careful explanation of the essential meaning of nearly every term introduced could well serve as a glossary for contemporary genetic terminology. Two minor inaccuracies, or perhaps lack of clarity, should be mentioned. One wonders in what way Beadle and Tatum revealed the immense power of selective systems. The first selective systems, if by this Ravin means the application of selective techniques, were applied to bacterial systems and only later to fungi. The description of somatic recombination and its detection by the parasexual cycle is unclear, perhaps because of brevity. The reader is left with the impression that mitotic recombination can be detected only after haploidication. Perhaps he means somatic recombination can best be verified via analysis of haploids. In conclusion, the book can best be characterized as providing perspective—perspective on the relation between classical and molecular genetics and perspective on what genetic research has revealed—and a prognosis of where genetics has yet to go.

R. W. BARRATT
Department of Biological Sciences, Dartmouth College

Continuity and Change in Social Organization

Arab Border-Villages in Israel. Abner Cohen. Humanities Press, New York; Manchester University Press, Manchester, England, 1965. xiv + 194 pp. Illus. $6.

All those interested in Arabs, kinship organization, Israeli politics, peasants, or the process of social change will find Abner Cohen's book, *Arab Border-Villages in Israel*, both informative and stimulating. His monograph is the last in a distinguished line of descent (Barnes, *Marriage in a Changing Society*; Gluckman, *The Judicial Process among the Barotse*; Mitchell, *The Yao Village;* Turner, *Schism and Continuity in an African Society*) that attempts to combine functional and processual analysis and "the extended-case method" in reference to the institutions of marriage and kinship.

Cohen attempts to trace the changes during the past 30 years of the social and political structure of a single Arab village in Israel: from the dominance of a single patrilineal kin group to a class alliance across descent group lines and then to a reemergence of competing patrilineal kin groups in a wider political and economic arena. He argues that these changes are representative of those taking place in the wider area known as "The Triangle." One of the great strengths of the analysis is the author's knowledge of the popular idioms of the Arabic language and his recognition of the symbolic significance of these idioms for general sociological processes (see, for example, pp. 58, 90, 105, 108). He has described rather graphically the dilemma of Arabs on the border who, although they must increasingly enter the Israeli economy, must, also increasingly, assert their cultural separation from the society that it represents.

The validity of Cohen's main theme, however, is open to question. Has village social and political organization developed in the three stages he outlines: strong patrilineages with a single one usually dominant, to class alliances, to a reemergence of patrilineages in a wider arena? His "extended" cases of patriliny belie this claim. Affinal and matrilateral ties are not merely a "domestic" aspect of patriliny (see pp. 110 to 119). They are as critical for the political struggle within the village in the third stage as they were in the second (see, for example, pp. 63, 74, 76, 77, 85, 90 to 92, 106, and 120). Although rights of women are said to operate according to "the order of priority between men [as] . . . determined by genealogical [patrilineally defined] nearness . . ." in the third stage, statements elsewhere suggest otherwise (see p. 121 as opposed to p. 75).

Finally, the critic must question the zero point that Cohen assumes in his analysis. Were patrilineages ("hamulas") ever so strong in the first place? Did "hamulas" ever exert collective ownership and control over land in the "mushā' " system? To my knowledge, there has never been a field study of the "mushā' " system in operation to substantiate such a claim. My investigations in Kufr al Ma, a village in East Jordan which presumably had in the past just the type of "mushā' " system described by Granott, Weulersse, and others, mainly from literary sources, disclosed that the participating individuals were not exclusively patrilineal kinsmen. Rather, they were villagers, related patrilineally or affinally, or *unrelated*, who decided in an *ad hoc* fashion to come together for the purpose of partition.

No matter how much one disagrees with Cohen's analysis, he must accept Cohen's book as one of the most provocative contributions to social anthropology in the last decade.

RICHARD T. ANTOUN
Department of Anthropology, Indiana University

Organic Chemistry

Methoden der Organischen Chemie (Houben-Weyl). vol. 6, pt. 3, *Sauerstoffverbindungen*. G. Dittus, H. Kröper, and H. Meerwein. Thieme, Stuttgart, 1965. xlviii + 832 pp. Illus. DM. 212.

Part 3 of the sixth volume of *Houben-Weyl* deals with the preparation of ethers, acetals, and ortho-esters, and with the practically important reactions of these compounds. As in previous volumes of the series, the editors have succeeded in securing highly competent authors for all eight chapters in the book. Hans Meerwein himself has written the first four chapters, which comprise half of the pages.

Meerwein's first chapter covers the preparation of open-chain ethers, including phenol- and enol-ethers. Fifty-

seven pages are devoted to reactions of these ethers. In the next chapter, 94 pages deal with acetals, and chapter 3 is a 30-page review of the chemistry of ortho-esters. Chapter 4, on oxonium salts, is of special interest. Meerwein, a pioneer in this field, gives an extremely lucid account of it and includes a wealth of useful practical information, often drawing on literature not easily available here, such as dissertations by his students. Meerwein's chapters provide us with reviews of fields not recently covered elsewhere.

Chapter 5, by Dittus, is a 122-page review on oxiranes. In keeping with the purpose of *Houben-Weyl*, the preparative aspect is emphasized. Thus, the chapter complements the other recent review of the field—Rosowsky's chapter in volume 19, part 1 of Weissberger's series on heterocycles. The enormous literature on oxiranes cannot possibly be covered in 122 (large) pages, but Dittus has done an admirable job with the synthetic aspects. Oxetanes are dealt with in chapter 6, also by Dittus. In 28 pages, the preparative aspects are again emphasized, and again the chapter provides a welcome complement to the review by Searles in volume 19, part 2, of the Weissberger series.

The rest of the book comes from the pen of Kröper. The two chapters cover five-membered cyclic ethers and five-membered semicyclic acetals. Recent reviews are not available for either area, and the author's 220 pages fill this gap. Ninety-six pages are devoted to the tetrahydrofurans, and they will be most useful to chemists. The writing is clear and concise, and the material is very well organized. Charts show the synthetic paths leading to many types of the compounds.

The authors and editors of this volume are to be congratulated on their work. Many who do not subscribe to the whole *Houben-Weyl* series will find it worthwhile to purchase this volume.

WALTER LWOWSKI
Sterling Chemistry Laboratory, Yale University

Symposium, British Society for Parasitology

Evolution of Parasites. Third symposium of the British Society for Parasitology (London), November 1964. Angela E. R. Taylor, Ed. Blackwell, Oxford, England; Davis, Philadelphia, 1965. viii + 133 pp. Illus. Paper, $5.

Parasitism requires such a nice adjustment between the parasite and its immediate environment, another living organism, that parasites have long been favored subjects with students of adaptation and evolution. Yet it is evident from the four discussions constituting this symposium that our knowledge of the evolution of the main groups of animal parasites is fragmentary. This is not surprising, because parasitic protozoa, nematodes, and flatworms have left little or no fossil record and because, moreover, the special physiological requirements of parasitism probably bring about many cases of convergent evolution. The fewer the facts the more room for speculation and personal opinion, and indeed the four sections of this small book seem to me to show an inverse correlation, with the least facts and most speculation in the first essay, by J. R. Baker, on the evolution of parasitic protozoa; nearly the same situation in the second, by P. F. Mattingly, on parasite-arthropod vector systems; more information and less speculation in the third, by J. Llewellyn, on parasitic platyhelminths; and still more information in the last and longest section, by W. G. Inglis, on parasitic nematodes.

In the chapter on protozoa, emphasis is placed on important parasitic groups within the subphylum Sporozoa, especially the suborder Haemosporina, and, in the class Zoomastigophorea, on the suborder Trypanosomatina. Both the Haemosporina and the Trypanosomatina include important parasites of man transmitted by insect vectors, and it is of special interest to try to determine how such a relationship could arise and whether the parasites originally infected only the vertebrate or only the insect host. Baker makes a strong case for the view that the Haemosporina arose from coccidian parasites of vertebrates, and secondarily became adapted to their insect vectors. There seems little room for doubt, however, that the early trypanosomatids were leptomonad-like flagellates inhabiting the gut of invertebrates. It is probable that parasitization of a vertebrate host arose independently in several different groups.

Mattingly's discussion of parasite-arthropod vector systems begins with the telling point that selection pressures promoting adaptation to the vector must be far more intense than in the case of the passive (vertebrate) host; any reduction in vector efficiency is likely to be fatal to the parasite. Hence no deductions concerning evolutionary origin can be based on the greater pathogenicity of parasites to their vertebrate than to their arthropod hosts. There follow brief sections on the possible evolution of blood-feeding in insects, and on the entomological aspects of the evolution of spirurate nematodes, haemosporidia, haemoflagellates, rickettsiae, and arboviruses.

In his treatment of the platyhelminths, Llewellyn accepts the view that cestodes evolved from monogeneans. As additional evidence he cites the recent discoveries of dactylogyrids as internal parasites in the esophagus of fish. It is suggested that the incorporation of an intermediate host into the life cycle may have been related to the possession of quinone-tanned egg shells. The latter subject is discussed in some detail. The evolution of digeneans, which exploit two kinds of hosts having no connection beyond coexistence in the same habitat, is treated briefly. An evolutionary tree is proposed for the parasitic platyhelminths, based on characters such as type of cleavage, presence or absence of polyembryony in molluscan hosts, ectoparasitism versus endoparasitism, and strobilization.

Inglis uses the abundant information on parasitic nematodes to discuss their speciation in terms of the evolution of groups with comparable feeding habits, rather than in terms of coevolution of parasites and hosts. He points to the numerous opportunities for competition among parasitic nematodes for available ecological niches, and concludes that speciation among these organisms has been entirely allopatric. Species flocks of nematode parasites are compared with the similar phenomenon in fish; the number of species is an indication of the number of discrete niches. A logical system is presented for the derivation of the major groups of parasitic nematodes.

This small book makes interesting reading for the experimental parasitologist as well as for those primarily interested in taxonomy and evolution. It brings together much fact and pertinent fancy, and points to many problems that require solution.

WILLIAM TRAGER
Rockefeller University, New York