In *The Ecology of Pastoralism*, Nick Kardulias has assembled a set of nine studies dealing with how pastoral groups in different places and at different times in history evolved, and how pastoralism as a primary activity has impacted all other aspects of lifeways. The geographic range covers the globe, with studies from Ireland (Mark T. Shutes: Chapters 9 and 10), the American Southwest (Lawrence A. Kuznar: Chapter 8), Central Asia (Claudia Chang: Chapter 2; Nikolay N. Kradin: Chapter 3; Erik G. Johannesson: Chapter 5; Michelle Negus Cleary: Chapter 6), Central Africa (Mark Moritz: Chapter 7), the Middle East (Homayun Sidky: Chapter 4), and the Mediterranean (Kardulias: Chapter 11). The historical span is equally great, with chapters relating to the Bronze and Iron Ages (Chang, Kradin, Johannesson, and Negus Cleary), the Middle Ages (Chang), recent historical periods (Kuznar and Sidky), and contemporary or near contemporary times (Shutes, Kardulias, and Moritz).

Although ostensibly focusing on ecology, the word as understood by the authors encompasses a large range of human interactions, extending well beyond biological or physical geographic ecology to include, most significantly, human ecology and political ecology, and in these a large range of social and cultural interactions, both intra-societal and external. Of necessity, historiographic and methodological issues are also addressed. If *The Ecology of Pastoralism* is not exhaustive or systematic in its coverage, it nevertheless offers a genuinely valuable perspective on the tremendous variability in the term, reviewing, for example, the idea of zones of pastoral adaptation, the functions of various exploited animals, the distinction between nomadism and pastoralism, and the problems of the myths and stereotypes of nomadism and pastoralism. In addition to making specific note of Andean camelid pastoralism—not dealt with by any case study in the volume—he also includes the horse-mounted hunters of the Great Plains during the seventeenth through nineteenth centuries CE in his general scheme of pastoral adaptations—an important addendum since it is one not usually included in most studies of pastoral groups.

With the bulk of the chapters focusing on Asia, Chang’s Chapter 2, “The Study of Nomads in the Republic of Kazakhstan,” and Kradin’s Chapter 3, “The Ecology of Inner Asian Pastoral Nomadism,” offer more general overviews. Chang’s chapter is based on her background in ethnoarchaeological studies in Greece but most especially on her archaeological research on Iron Age Kazakhstan. Her primary argument contrasts Soviet historical materialist analyses of ancient nomadism, especially the concepts of patriarchal feudalism and a pastoral mode of production, with Western paradigms that stress social and cultural adaptation and eschew the ideologies of Marxist dialectics. In particular, she notes that her archaeological research in the Talgar region has uncovered the multi-resource base, which includes agriculture, of Iron Age and medieval Kazak pastoralism. She also touches on the role of nationalism in modern studies, and how it linked to Soviet emphases on the archaeologica reconstruction of ethnogenesis of modern peoples—obviously a debated point.

Kradin offers a summary review and description of the ecology of the nomads of Inner Asia, most especially critical of the paradigms based on historical Chinese perceptions of nomadism. Of particular interest, he offers strong reasons to reject climate as a prime determinant in the rise of pastoral societies in the Asian steppe, although he absolutely acknowledges the role of environment and climate in shaping these cultures. The insight that nomadic empires may be inherently unstable is also worth noting, tying into recent ideas on the inherent instabilities of archaic states in general.
Following these two more general perspectives, Sidky, Johannesson, and Negus Cleary offer more specific studies of Asian pastoralism. Sidky, in “Agropastoralism and Transhumance in Hunza” (Chapter 4), offers a case study of the pastoral system in Hunza, Pakistan, concluding that pastoralism was a crucial element for sustaining the general food production system. The delicate balance between farming based on glacial run-off (in a region that receives only 130–200 mm rainfall per year) and pastoralism is emphasized, and the mix of different animals for different functions (e.g., cattle are used primarily as draft animals and for manure, and little for milk or meat, as opposed to sheep and goats). In the absence of pre-modern written records, the chronological depth of this study is limited.

In contrast, Johannesson, in “Animals, Identity, and Mortuary Behavior in Late Bronze Age–Early Iron Age Mongolia: A Reassessment of Faunal Remains in Mortuary Monuments of Nomadic Pastoralists” (Chapter 5) and Negus Cleary, in “Kalas and Kurgans: Some Considerations on Late Iron Age Pastoralism within the Central Asian Oasis of Chorasmia” (Chapter 6) offer archaeological investigations of Late Bronze–Iron Age Asian pastoralism, which is, in a way, the chronological heartland of early Asian pastoralism. Johannesson’s study focuses on changing mortuary behaviors from ca. 1500 BCE through the early first millennium CE in Mongolia. Reviewing the sequence of tomb types and their contents, he concludes that faunal remains in the tombs cannot truly reflect general lifeways, that is, they are not necessarily a reflection of pastoral systems, but that the adoption of pastoralism will effect changes in ritual use of livestock. Noting that Chinese historical texts identify the Xiongnu as mobile pastoralists (the latest in his three-period sequence), he suggests that in the sequence from khirigsuurs to slab burials to Xiongnu ring tombs, the more local articulation of monumentality in the first two suggests limited mobility and a more limited pastoral practice than in the final Xiongnu period.

In contrast to Johannesson’s assumption that pastoralists leave only minimal archaeological remains (and hence his emphasis on tombs), Negus Cleary notes the clear presence of a range of site types, including forts (kalas), irrigation systems, and pastoral campsites in the Central Iron Age oasis of Chorasmia. The last site type is of special importance since it offers direct archaeological evidence for pastoral nomadic lifeways. In addition to a very useful description of the archaeology of the region, she stresses the overlap between the sedentary and pastoral, suggesting that the polarity or dualism of the standard paradigms of the desert and the sown are more complex. The archaeology reflects integrated landscapes of complex patterns of subsistence and culture. Furthermore, she suggests that the archaeology of the fortresses indicates a range of functions, varying over time, not exclusively the products of the sedentary peoples of the region.

Moritz’s study, “FulBe Pastoralists and the Neo-Patrimonial State in the Chad Basin” (Chapter 7), is a study of the changing relations between FulBe cattle pastoralists and the state in recent times. The basic argument is that while most anthropologists view the relations between African pastoralists and the state as those of conflict, on the ground there is a constant set of informal political relations between lower levels of state administration (e.g., bureaucrats from agricultural or animal husbandry services, police, and customs officials) and the FulBe, which are constantly being negotiated. Furthermore, the various permutations of African state systems, from local states through colonial administrations, and on to Cameroonian state administrations, have resulted in changing relations, often accompanied by tensions with the system, all within relative short time spans, and all superimposed on the Chad basin as the locus of different overlapping ecologies, political zones, and economic systems.

The Navajo of the American Southwest shifted to mobile pastoralism in the late eighteenth century, apparently as a result of the collapse of the agricultural systems that developed earlier in the century. In “Flexibility in Navajo Pastoral Land Use: A Historical Perspective” (Chapter 8) Kuznar summarizes the economic transitions, which brought about both the shift to pastoralism (at least partially in response to the rise of market demands for meat) and the subsequent decline of the adaptation, resulting especially from political events, such as forced relocations and state-mandated stock reductions (initiated in response to concerns about
overgrazing). By the 1940s, with industrialization and population growth, pastoralism could no longer sustain Navajo populations, although it remained an integral part of the culture.

Shutes’s two papers on Irish pastoralism “Accidental Dairy Farmers: Social Transformations in a Rural Irish Parish” (Chapter 9) and “Real Milk from Mechanical Cows: Adaptations from Irish Dairy Cattle Farmers” (Chapter 10) review the development of pastoralism in Ireland from the nineteenth century to today (Chapter 9) and offer a case study for the specifics of economic adaptation in the modern market (Chapter 10). In the nineteenth century’s mixed farming economy, calves were sold from farms in the west to farms in the midlands and east for further fattening up and sale; dairying was limited, since the good pasture land needed to support dairy cows was at a premium, and milking was only profitable for larger farms. The system, which developed as a result of ecological and economic heterogeneity, was one of balance between small farms with labor surpluses and large farms with equipment that could be rented out. The system was ultimately undermined by labor emigration. In more recent times, European Union policies dictating dairy quotas created a shift, whereby the milk that could no longer be sold in the market could be used to feed calves but required labor. The unique case of the invention of mechanical cows to feed calves was an ingenious response to the contingencies of the European Union’s economic policies.

Cardulias’s study “Island Pastoralism, Isolation, and Connection: An Ethnoarchaeological Study of Herding on Dokos, Greece” (Chapter 11) is a study of Dokos pastoralism, ostensibly with archaeological applications, although Cardulias notes that there is little evidence for early herding on the island. Describing the modern pastoral system, herding is clearly critical both for subsistence and as a cash crop but requires a larger network, extending well beyond Dokos itself. Beyond the basic description, this greater level of integration is indeed the primary lesson derived from the study.

In Chapter 12, “The Ecology of Herding: Conclusions, Questions, Speculations,” Thomas D. Hall reiterates the basic themes of the book. Beyond this, he notes that state-level societies evolved from economies based on agriculture not hunter-gatherer, fishing, or pastoral societies, and that production surplus and sedentism were both necessary conditions for state formation. Presumably, Hall is referring to primary state formation here, since secondary states, such as those of Central Asia, indeed formed out of nomadic societies, which encompassed sedentary cousins.

Beyond Hall’s discussion, close review of The Ecology of Pastoralism suggests other insights, especially in the comparative examination of the studies. First, the whole problem of finding commonalities in this great range of adaptations must be proven and not simply accepted because of the shared thread of pastoralism. It is not clear that sedentary Irish cattle farmers really have any analytically meaningful shared attributes with Iron Age Mongolia. We need to question our own categories.

More importantly for archaeologists, the contrast in historical resolution between the modern studies in this volume and the ancient ones demands comment. On any analytic axis we can examine, modern case studies offer us chronological detail, economic and political complexity, and social discrimination, which we cannot even approximate in the archaeological record. Although there can be no doubt that such complexities existed in past societies, we cannot simply adopt analogies from the present to fill in the blanks of the past. Even at the level of simple chronology, Johannesson’s study of Mongolian mortuary practices spans a millennium and a half and is divided into three basic periods. The ethnographic and recent historic case studies offered here extend back perhaps two centuries, maybe three, and offer much great detail. The archaeological studies are, in a way, almost static—we present a picture reconstruction, sometimes attempting to add a dynamic element to the picture (e.g., Negus Cleary), but we lack the resolution evident in a modern study.

On the other hand, archaeology offers a chronological depth not available in studies based on the recent past. Thus, in a real sense, there is a crucial complementarity to these studies—but this complementarity does not fill in the blanks. We can gain valuable insights in the comparison, but they are more hypothesis than conclusion. Of course, any research that generates new hypotheses must be considered a success.