Risk and Survival in Ancient Greece: Reconstructing the Rural Domestic Economy. Thomas W. Gallant. Stanford: Stanford University Press, 1991. 267 pp., index and biblio. $42.50 cloth (ISBN 0-8047-1857-1).

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This is a very modern study, despite its historical focus. An economic historian, Gallant's theoretical framework lies in the mainstream of political ecology. His cross-cultural, comparative approach draws on examples from the contemporary Third World, as well as Medieval and Early Modern Europe: the resulting hypotheses are tested against his empirical data and projected by means of computer simulations. Only a fraction of his 850 references pertain to Classical Antiquity in a bibliography that can best be described as cosmopolitan.

The household is selected as the primary unit of production and analysis, and ancient documentary sources as well as pre-industrial demographic studies are used to model the life-cycle of the ancient Greek household, i.e., the co-resident kin group of parents, offspring, and siblings as it would change across a span of 24 years. Risk minimization in agricultural production is a fundamental theme, emphasizing the adaptive advantages of crop diversification, intercropping, fragmentation of land holdings, cropping and fallow strategies, and consumption versus storage. Structural constraints identified within the household include diet and caloric consumption, labor requirements and crop yields, farm size, as well as storage, expenditure, and surplus. This is the heuristic core of the book, with various simulations grounded in analog data and applied to the changing circumstances implied by the household life-cycle, a refreshing improvement over static, average household sizes. Using farm sizes with four and six hectares of arable land, the simulations (not fully spelled out, for example, in regard to seed stocks) suggest considerable vulnerability to climatically induced shortfalls. In effect, the average rural household lived at the margin of viability; even with intensification (including the dubious assumption of seed-drilling and hoe cultivation of field crops), yields would have been inadequate for six or seven of the final eighteen years of the life-cycle.

Response strategies to mitigate periodic food stress would, according to the model, include use of wild plant and animal foods, selling or slaughtering livestock, selling or mortgaging land, sending children to relatives or encouraging young adults to leave home, and so forth. Such short term solutions would reduce long-term resilience, especially through decapitalization. Alternative, risk-buffering mechanisms at the community level would include reciprocity among kin and friends, patronage networks, and other forms of "social storage." Possibly only of limited effectiveness, such solutions may have increased dependency, so that Gallant then turns to larger structures, such as religious organizations, social storage between communities and, especially, the redistributive role of powerful "benefactors." Ultimately the responsibility for subsistence relief shifted to private, wealthy individuals, leading to the impoverishment of simple rural folk.

More fundamental, structural changes accompanied the formation of imperial states that accumulated and redistributed great wealth, generated by heavy taxation, and used to support large armies. Cultivated lands were greatly expanded (presumably onto marginal soils), and tax demands cut deeply into yields even as labor was intensified. New simulations here suggest food shortfalls during one year out of two, increasing vulnerability and reducing resilience—trapping farmers in a vicious cycle of dependency, chronic indebtedness, and pauperization.

A critical test for any model is the quality of its assumptions, and there are weaknesses in the premises adopted by Gallant. For one, he assumes permanent cropping (all land cropped each year, p. 89), incidentally contradicting his own Figure 3.2. For traditional Mediterranean agriculture, that would only be possible on unusually fertile bottomlands; the more general pattern was grass fallow every other year in the best lands around Sevilla during the eighteenth century (Drain 1977). Even the Medieval three-field system, with its cereal-legume-fallow rotation, could not achieve annual cropping. This implies that larger plots would be required in most parts of Greece, although this looks somewhat different if we consider the role of arboriculture and stockraising (Butzer 1993), complementing strategies that are underappreciated by Gallant.

Olive trees, vines, and figs are normally intercropped with wheat, since they compete minimally for space; droughts or frosts that may destroy winter cereals or legumes might well not affect the fruit trees, or vice versa, potentially providing calories, preserves, or surplus commodities (oil, wine) during otherwise lean years. Neither did livestock compete for arable land, since in Medieval Spain they were grazed on unimproved land, typically held as com-

monage, except for pasturage on fallow land or on stubble after the harvest (local transhumance); plow animals were kept on special pastures generally held in common (Butzer 1988). Unlike in northern Europe, where cold winters impacted livestock numbers, Mediterranean droughts did not destroy transhumant pasturage (Gallant's African analogs, p. 122, are unfortunate), and limited numbers of animals were primarily slaughtered in times of grain shortfalls as part of deliberate management strategies (Butzer et al. 1986: 358,384). Altogether the role of dairy products in nutrition (even the poorest families bred a few goats) is underplayed. In short, arboriculture and pastoralism substantially reduced subsistence vulnerability, perhaps compensating for the reduced staple yields advocated here.

A last concern is in regard to market exchange, viewed as disadvantageous and favoring indebtedness by Gallant (p. 98 ff., 193) on the basis of subsaharan African analogs. The three-pronged Mediterranean agrostrategy, verified in Greece since the later Bronze Age, was predicated on surplus commodities and market exchange, for which Morocco would have provided more appropriate examples. Urban growth since the fourth century B.C. assumes a regional averaging and integration of food supplies that becomes documented on an interregional scale for the Roman period. The resulting commercialization did not bode well for the small farmer, but it does highlight the need for a more open-system model.

Despite these criticisms, Gallant's study represents a valuable and thought-provoking simulation of political ecology over the long term, in which the particular historical context becomes almost incidental. Geographers should be aware of this work, not only for its heuristic value, but also as a methodology that can be modified and adapted to other historical or contemporary settings.

Key Words: dependence, Greece, household, Mediterranean agroecology, political ecology, simulation, subsistence risk.

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At Odds with Progress: Americans and Conservation. Bret Wallach. Tucson: University of Arizona Press, 1991. xiv and 255 pp., maps, notes, index. $27.50 cloth (ISBN 0-8165-00917-4).

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Despite the good intentions of journal editors, not all books get reviewed in a timely fashion. One such work is Bret Wallach's *At Odds with Progress* which failed to receive the *Annals* notice it deserved the first time around. Several journals have run strongly positive reviews. But why review a book three years after its publication? In this case there are several reasons, not the least of which is this book's ability to speak to all geographers at a time when discourse has never been more fragmented. Another is to note Wallach's continued yet wholly undeserved obscurity within our discipline. Geography's first MacArthur Award winner, he has been publishing in our journals for the past fifteen years, yet relatively few seem to know the man's work.

Wallach's most obvious problem is that he writes with great care. It is a handicap for the scientist and tantamount to a kiss of death for the social scientist. To speak of a book as well-written is to condemn it because preceding that accolade lurks the unspoken dismissive "merely." I was the first *Annals* editor to publish Wallach's work ("Logging in Maine's Empty Quarter," 1980) and I recall feeling distinctly uneasy about the manuscript. Anything that flowed so beautifully had to be based on mere impressions and unsubstantiated conclusions; otherwise, where were