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Roman ley-farming

Geoffrey Kron

This paper is intended to show that a method of intensive mixed farming essentially indistinguishable from early modern convertible husbandry, otherwise known as up-and-down husbandry or ley-farming, was well known to the Roman agronomists and that this system seems to have been the standard method of managing arable cultivation on mixed farms combining livestock-rearing with tillage. Although none of our sources explicitly describes the practice of convertible husbandry, its widespread use is implicit in their technical terminology and the Roman agronomists were well acquainted with the principles behind its application. By demonstrating the widespread familiarity of up-and-down husbandry in ancient farming, I hope to show not only that Roman agriculture was more sophisticated and productive than is generally allowed, but to clarify the meaning of a number of Roman technical terms and make better sense of the accounts of arable cultivation in the *scriptores rei rusticae*.

The increased adoption of ley-farming was arguably the most important single factor in the so-called Agricultural Revolution of late Mediaeval Flanders and Brabant and of early Modern England, and it is credited with dramatically increasing the yields of cereal agriculture and the productivity of animal husbandry.¹ The practice of convertible husbandry is standard in contemporary mixed farming world-wide, but was re-introduced into modern Italian agriculture only in the 19th c. by agronomists familiar with the publicity its revolutionary success had garnered in England.² The importance of this issue for our understanding of the productivity of Roman agriculture needs very little elaboration.³

Recent scholarly work has helped to dispel many ill-supported or cursory criticisms of Roman agricultural practice, characterizing it as 'primitive' or inefficient.⁴ K. D. White's magisterial research into Roman farming helped to clear away several important misconceptions and

- 1 See E. Kerridge, *The agricultural revolution* (London 1967); J. De Vries, *The Dutch rural economy in the golden age, 1500-1700* (New Haven, CT 1974) 141-44.
- 2 M. Petruszewicz, "Agromania: Innovatori agrari nelle periferie Europee dell' Ottocento," in P. Bevilacqua (ed.) *Storia dell'agricoltura italiana in età contemporanea* (Venice 1989) vol. 3, 322-24; G. Corona and G. Massullo, "La terre e le tecniche — innovazione produttivi e lavoro agricolo nei secoli XIX e XX," in Bevilacqua *ibid.* vol. 1, 356-57. If it seems that I pay undue attention to English rather than Italian agronomists in the discussion which follows, this is a reflection of the greater emphasis placed upon ley farming and animal husbandry generally by the former, particularly in the pre-Industrial era.
- 3 For a useful brief survey of the scholarly controversy over Roman field and crop rotation-systems and their relationship to the advances of the so-called 'agricultural revolution' of the Mediaeval and early Modern periods, and for an excellent analysis of the mounting evidence against the former *communis opinio*, see the remarks in H. Pleket, "Die Landwirtschaft in der römischen Kaiserzeit," in *Europäische Wirtschafts- und Sozialgeschichte in der römischen Kaiserzeit* Bd. 1 (Stuttgart 1990) 73-74, 75-79.
- 4 Recent monographs notable for defending the sophistication of Roman agronomy include K. White, *Roman farming* (London 1970); J. Kolendo, *L'agricoltura nell'Italia romana* (Rome 1980); A. Carandini (ed.), *Settefinestre. Una villa schiavistica nell'Etruria Romana*, vol. 1 (Modena 1980); M. S. Spurr, *Arable cultivation in Roman Italy c.200 B.C. to c.A.D. 200* (London 1986). For further discussion and fuller bibliographical references see Pleket (*supra* n.3); *id.*, "Agriculture in the Roman empire in comparative perspective," in *De agricultura: in memoriam Pieter Willem de Neeve (1945-90)* (Amsterdam 1993) 317-42; and, more recently, D. Kehoe, *Investment, profit, and tenancy: the jurists and the Roman agrarian economy* (Ann Arbor 1997). For the arguments advanced in support of the alleged advance of Mediaeval agricultural techniques over those of antiquity, see in particular G. Duby, "La révolution agricole médiévale," *Revue de Géographie de Lyon* 29 (1954) 361-66; L. White, *Medieval technology and social change* (Oxford 1962) 40-78. A unique comparative perspective is provided by A. Dickson, *The husbandry of the ancients in two volumes* (Edinburgh 1788): Dickson argues in detail for the superiority of much Roman practice based upon first-hand knowledge of contemporary British agriculture and a thorough mastery of the Roman agronomists.