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Roger S. Bagnall and Bruce W. Frier
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The traditional demographic regime of ancient Greece and Rome is almost entirely unknown; but our best chance for understanding its characteristics is provided by the three hundred census returns that survive on papyri from Roman Egypt. These returns, which date from the first three centuries AD, list the members of ordinary households living in the Nile valley: not only family members, but lodgers and slaves. *The demography of Roman Egypt* has a complete and accurate catalogue of all demographically relevant information contained in the returns. On the basis of this catalogue, the authors use modern demographic methods and models in order to reconstruct the patterns of mortality, marriage, fertility, and migration that are likely to have prevailed in Roman Egypt. They recreate a more or less typical Mediterranean population as it survived and prospered nearly two millennia ago, at the dawn of the Christian era.

The material presented in this book will be invaluable to scholars in a wide variety of disciplines: ancient historians—especially those working on social and family history; historical demographers, papyrologists, and social historians generally.

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*The demography of
Roman Egypt*

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and

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O I perceive after all so many uttering tongues,
And I perceive they do not come from the roofs of mouths for nothing.

I wish I could translate the hints about the dead young men and women,
And the hints about old men and mothers, and the offspring taken soon
out of their laps.

Walt Whitman, *Song of Myself* 6

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Foreword

Bagnall and Frier have performed two extraordinary labors in their construction of this book. First, they have assembled about 300 original returns from censuses in Roman Egypt during the first to the third centuries. It has been possible to collect these returns in usable form because they were inscribed on papyrus. After assembling these records (literally assembling them in some instances of crumbled documents), they have put them in order, and translated the inscriptions. Second, they have applied to this body of data the set of modern methods of inferring basic demographic characteristics from incomplete and inexact information. These techniques have been devised in recent years to enrich our knowledge of the characteristics of historical populations and the populations of contemporary less developed countries. This combination of the skills of outstanding classical historians with the most refined techniques of modern demography is indeed unusual; the result is a clear picture of the age composition, marriage customs, fertility, and mortality in Egypt at the height of the Roman Empire. It is not a completely clear picture because of the limited size of the sample, and because of various kinds of bias in what is written on the returns, but still an exciting increase in our knowledge.

Ansley J. Coale
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Preface

During the early Roman Empire, the provincial government of Egypt conducted a periodic census of all residents. Among the tens of thousands of documentary papyri from Roman Egypt, there survive just over three hundred census returns filed by ordinary Egyptian declarants. Extant returns run from AD 11/12 down to the last known census in 257/258, but the vast majority date to the second and early third centuries. Their state of preservation varies: some are scraps, but many contain complete or nearly complete registers of Egyptian households. In all, nearly eleven hundred registered persons can now be made out, of whom sex is known for more than a thousand, and age for more than seven hundred. About three-quarters of surviving returns come from the Arsinoite and Oxyrhynchite nomes (administrative districts), which lay in Middle Egypt to the southwest of the Nile Delta; other nomes are represented only intermittently.

Although the Egyptian census returns are not free of the flaws that beset all pre-modern censuses, their surprisingly high demographic quality has long been recognized. Early discussion of them from this standpoint culminated in Marcel Hombert and Claude Préaux's classic *Recherches sur le recensement dans l'Égypte romaine*, published in 1952. Since then, however, research has been spasmodic. The only major demographic contribution is Keith Hopkins's 1980 article on "Brother-Sister Marriage in Roman Egypt." Hopkins devoted much of this article to exploratory demographic comments on the census returns, which he argued "are far from perfect, but . . . the best data we have" for ancient populations. Hopkins was the first historian who applied to the returns the sophisticated modelling techniques that modern demographers use when analyzing imperfect data.

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Preface

In 1988, the co-authors of this book decided to extend Hopkins's approach in a more sustained and comprehensive manner. Our aim was to examine what we both consider a fairly typical example of the ancient demographic regime, especially as it was experienced by quite ordinary individuals situated far beneath the Roman Empire's social and political elite: farmers, laborers, soldiers, scribes, weavers, doctors, goldsmiths, gardeners, stone-cutters, ropemakers, donkey-drivers, and their families and households, all persons commonly met with in the Egyptian census returns. We set ourselves two goals. The first was to collect all known returns, to verify their texts, and to publish demographically relevant information in a uniform catalogue. The second was to employ modern methods in reconstructing the long-term demographic characteristics that the census returns can most probably be held to support for Roman Egypt. Roger Bagnall took primary responsibility for the first part of the project, and Bruce Frier for the second; but at every stage we commented at length on each other's drafts, and the resulting book is entirely collaborative.

Demography, as a social science, examines an extremely important aspect of human experience through an intellectual framework largely specific to it as a discipline. Although the techniques employed in this book may seem exotic to many ancient historians, all are in everyday use among modern historical demographers. We intend our study to be as "user-friendly" as possible; therefore we carefully set out and explain the methods we use, but avoid congesting the text with equations and formulas that might confuse or intimidate. However, we also provide bibliographic references to elementary and more advanced demographic manuals describing these techniques, in the hope that interested readers will not only check our results, but also extend these methods to other sources. Throughout we try to be as clear as possible in defining technical terms, and more generally in explaining the conceptual framework of demographic research. Readers who remain baffled may wish to consult a standard introduction such as Colin Newell's *Methods and Models in Demography* (1988), a wonderfully lucid exposition we draw on heavily.

Modern demography makes frequent use of models in order to evaluate imperfect statistical evidence about past populations. In our experience, these models can be a source of confusion in their own right. Models such as the ones we use are not infallible guides to demographic truth, and they have sharply limited historical worth independent of empirical data to which they are applied. Instead, models are simply "tools of the trade," the purpose of which is to provide a well-established basis for analyzing raw facts in terms of what might reasonably be expected (Newell, pp. 117–119). Since any given population is likely to combine both normal and unusual demographic features, demographers constantly balance the antici-

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pated against the unanticipated, in a delicate effort to reconstruct, within the limits of available evidence, a unique historical population that is at once realistic and plausible.

As will emerge, this approach calls for discernment. Although demography may seem at times a rigorously statistical and hence ineluctable discipline, scholarly taste and judgment inform it at every stage, and such subjective factors assume greater consequence when, as is true of Roman Egypt, surviving data are incomplete and poorly preserved. In this respect, the demography of Roman Egypt does not differ from any other historical study of the ancient world; scanty surviving evidence is pressed to its limits, and at times doubtless a bit beyond. We consider it essential that the seeming precision of our statistics not of itself induce false confidence in the result. On the other hand, the census returns present historians with extraordinary opportunities, which it would be unfortunate to lose simply because the subject matter is unpalatable or numbers arouse suspicion. Even an approximate reconstruction of the major demographic functions for Roman Egypt has value, since so little is otherwise known about these functions in the ancient world; but the fine balance between mortality and fertility was certainly as fundamental to Greek and Roman civilization as to all other societies before the modern demographic transition.

As to demographic method, this book raises different issues: how well do modern techniques work when applied to an historical population known only through evidence that is of reasonably high quality, but sparse and scattered? Do these techniques continue to yield generally credible results? Although the Egyptian census returns are, in this respect, virtually a limiting case, the techniques appear to hold up well. Modelling alone cannot eliminate all defects in the evidence; indeed, it often brings defects into sharper focus, thereby establishing the limits of our knowledge. Nonetheless, as we hope to show, the modern approach can still considerably deepen our understanding of a population in the distant past.

Beyond models, there is now also a large body of comparative evidence against which to test the plausibility of hypotheses about Roman Egypt. Benchmarks are, especially, Mediterranean Europe in the eighteenth and nineteenth centuries, and Egypt in the nineteenth and early twentieth; but early data are now also available for India and rural China, which in some respects may resemble Roman Egypt closely.

In the course of preparing this work we have been helped by numerous individuals and institutions. The many persons who aided Bagnall in the pursuit of the originals and photographs of three hundred census declarations are listed in the introduction to the Catalogue (below, p. 179). We repeat here our thanks for generous assistance without which this entire project would not have been possible. Bagnall is also indebted to the John Simon Guggenheim Memorial Foundation for a fellowship in 1990–91 dur-

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ing which much of the examination of the papyri took place, and to Columbia University for a sabbatical leave that year and continued research support from the office of the vice president for Arts and Sciences.

Frier's portion of the manuscript was largely written during his sabbatical in 1992–93 at Institute for Advanced Study in Princeton; this sabbatical was underwritten by the Institute, the National Endowment for the Humanities, and the University of Michigan, to all of whom he is grateful. He also owes a large debt for help received from the Population Studies Center at Michigan and the Office of Population Research at Princeton University. In particular, Ansley Coale, former director of OPR and one of the world's foremost experts on reconstructing imperfectly known populations, took a lively interest in our project and offered much useful advice on technical points; he also read the completed manuscript and provided a foreword to it. His generous aid was of immense value.

Both of us would like to thank Academic Press, Inc., and Professor Coale for permission to reproduce copyrighted life tables from A. J. Coale and P. Demeny, *Regional Model Life Tables and Stable Populations* (2nd ed., 1983); and also Michael Meckler, a graduate student at the University of Michigan, who prepared the stemmata in the Catalogue.

In December, 1992, at its Christmas meetings in New Orleans, the American Philological Association mounted a special seminar on the preliminary results of our project. Diana Delia and Sarah Pomeroy organized this seminar, which included comments by Keith Bradley, Keith Hopkins, and Richard Saller; all participants provided thoughtful comments that were of considerable help to us. On a more advanced draft, Ann Hanson, Dominic Rathbone, and Richard Saller made dozens of detailed and perceptive observations; their help was invaluable in the final stages of writing, though they must not be implicated in the result. Finally, we are grateful to the editors of this series for accepting our book in it; to Pauline Hire and Karl Howe at Cambridge University Press, for help at every stage of the passage from manuscript to book; and to our copy-editor, Henry Maas, for surefooted but lighthanded improvement of a complex manuscript.

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A note on references and abbreviations

Modern works cited more than once are included in the Bibliography and indicated by author's name, short title, and date of publication; those cited only once are normally given in full at their appearance. Abbreviations for journals and standard works may be found in *L'Année Philologique* and the *American Journal of Archaeology*; deviations should be transparent. Papyri and related works are cited according to J. F. Oates *et al.*, *Checklist of Editions of Greek and Latin Papyri, Ostraca and Tablets*, 4th ed. (BASP Suppl. 7, 1992). Papyrus references are to volume (roman numerals) and papyrus (arabic numerals), except where references to page numbers are specifically so indicated. Critical work on papyri published up to about 1986, as recorded in the various volumes of the *Berichtigungsliste der griechischen Papyrusurkunden aus Ägypten*, is indicated with *BL* plus volume and page number; critical work since 1986 is cited in full.