

RESPONSE by K. Killgrove
to C. Bruun, "Water, oxygen isotopes and immigration to Ostia-Portus"

I read with interest C. Bruun's re-interpretation of the oxygen isotope results of T. Prowse and colleagues from human dental enamel from Portus.¹ Bruun raises an excellent point about the need for students of the classical world to engage both hard and soft data in their discussions of the Roman past; his re-analysis of the conclusions of Prowse *et al.* demonstrates that both humanistic and scientific approaches can be taken to the same data set. For those of us who work in a well-documented era of history, it is important to debate, challenge and eventually incorporate new information that results from both kinds of inquiry. I do, nevertheless, have a few comments, made from the perspective of a bioarchaeologist engaged in isotopic analysis of human remains from Rome.

Physical anthropology, which, in the United States, incorporates bioarchaeology among other subfields, tends towards the scientific. Because of the divergent evolution of classics and anthropology in the U.S.A., it is unsurprising that, as Bruun notes, the *American Journal of Physical Anthropology* is not at the top of any classicist's list of important publications, even if it is considered foremost in its own field. In addition, the dearth of skeletal populations from Rome available for osteological and chemical analysis means that the development of a bioarchaeological research program for the Roman world has lagged behind other avenues of archaeological inquiry.² However, as the recent *JRA* supplement 78 (H. Eckardt [ed.], *Roman diasporas: archaeological approaches to mobility and diversity in the Roman Empire*) shows, within recent years producers of hard and soft data have begun to work together.³ At the same time, those who deal more often with scientific data and those dealing with humanistic data have their own methods and their own language, which can lead to misinterpretations on either side of what is too often a divide in academe.

In his second paragraph, Bruun notes that his discussion will address "the way in which the dental material was made to yield this conclusion", namely the suggestion by Prowse *et al.* that migration was a complex phenomenon that involved families. This is a somewhat unfairly worded criticism of their study and it implies a dissatisfaction with the scientific method. There exists a general theory of migration to Rome (and to Portus) based

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- 1 T. Prowse, H. Schwarcz, P. Garnsey, M. Knyf, R. Macchiarelli and L. Bondioli, "Isotopic evidence for age-related immigration to Imperial Rome," *Am. J. Phys. Anth.* 132 (2007) 510-19.
 - 2 See, however, M. MacKinnon, "Osteological research in classical archaeology," *AJA* 111 (2007) 473-504, for an excellent overview of bioarchaeological research in the classical world.
 - 3 These works are published in anthropological venues rather than in those oriented towards classicists. For example, Sr and O isotope analyses in service of understanding migration in the empire have been done in Bavaria (M. Schweissing and G. Grupe, "Stable strontium isotopes in human teeth and bone: a key to migration events of the Late Roman Period in Bavaria," *JArchSci* 30 [2003] 1373-83), Britain (J. Evans, N. Stoodley and C. Chenery, "A strontium and oxygen isotope assessment of a possible fourth century immigrant population in a Hampshire cemetery, southern England," *JArchSci* 33 [2006] 265-72; H. Eckardt, C. Chenery, P. Booth, J. Evans, A. Lamb and G. Müldner, "Oxygen and strontium isotope evidence for mobility in Roman Winchester," *JArchSci* 36 [2009] 2816-25; S. Leach, M. Lewis, C. Chenery, G. Müldner and H. Eckardt, "Migration and diversity in Roman Britain: a multidisciplinary approach to the identification of immigrants in Roman York, England," *Am. J. Phys. Anth.* 140 [2009] 546-61), and Egypt (T. Dupras and H. Schwarcz, "Strangers in a strange land: stable isotope evidence for human migration in the Dakhleh Oasis, Egypt," *JArchSci* 28 [2001] 1199-1208) and others can be found in the *Am. J. Phys. Anth.*, *Archaeometry*, and *JArchSci*.