

Ann HANSON The Brain & Brain Surgery in the Roman Empire: Heliodoros & Galen

The Hippocratic treatise *Wounds in the Head* presents a picture of what had been learned about head wounds by the end of the 5th century BC, and while that author was well aware of the risks a surgeon took, should his scalpel penetrate the *dura mater*, it is clear that experimentation continued in later times, investigating what was possible for alleviating human suffering due to malformations and diseases of the skull, or to accidents. In the Hellenistic period surgeons opened both animal and human brains, and while we gain a view of some of the extraordinary advances from the Alexandrian anatomists Herophilos and Erasistratos, the surgeons who followed them are little more than names -- Meges, Euelpistos, Tryphon. Celsus summarizes Hellenistic and early Roman surgery on the brain, yet his discussion suggests that the bold experimentation of later decades was just getting underway in his time. Fortunately, the late antique compendiasts (Oribasios, Aitios, and Paulos) collected chapters from the brain surgeons of the Roman Empire, such as Leonidas, Heliodoros, and Antyllos. And these, when juxtaposed to experiments by Galen on the brains of oxen, provide a fairly full view of research and practice at Rome between AD 60 and 215.

After a brief historical summary, my paper will focus on Heliodoros, known from the *Sixth Satire* of Juvenal, and on Galen. Heliodoros was a practicing surgeon, and although none of his writing survives intact to modern times, Oribasios included in his *Medical Collections* significant portions from the *On Surgery* in five books; other works by Heliodoros are known principally by title (*Joints, Dislocations, and Bandages and Bandaging*). Two Latin treatises also claim him as author, *Cirurgia Eliodori* and *Epistula phlebotomiae*, although disagreement remains as to how much of Heliodoros can be found in either Latin work. Papyrus fragments show that his *On Surgery* was circulating in Roman Egypt a century after his death (MP³ 458.3), and scholars have argued on the basis of content that four other papyri also contain fragments of Heliodoros (MP³ 2372, 2374, 2376, 2377); I have located a fifth (MP³ 2340.1). Treatises by Galen, such as *Anatomical Procedures* and *Usefulness of the Parts*, spell out his encephalocentric claims for the hegemonic role of the brain in human physiology. While Heliodoros was treating human patients with injuries and diseases affecting the skull and brain, Galen was often vivisectioning oxen to learn about the impairments and fatalities penetration of the *dura mater* entailed. Nonetheless, the procedures the two doctors describe for treating skull fractures (*rogme, katagma*) offer fruitful comparison of methods and concerns. In particular, their advice on trepanning a depressed fracture (*empiesma*) displays both similarities (such as concern for the fragments of bone trepanning produced), as well as interesting differences.