

Abstract for an Invited Paper
for the APR06 Meeting of
The American Physical Society

Pais Prize Lecture: History and Physics

JOHN HEILBRON, UC Berkeley

Modern history and experimental physics entered the university together, in the course of the eighteenth century. They shared several practices and projects. Historians began to emphasize physical factors, and so drew on, and occasionally contributed to, meteorology and physical geography; and they developed ancillary disciplines, like numismatics, diplomatics, and paleography, which required the analysis of metals, paper, and inks, and the careful comparison of material objects. In physics, historical reviews of newer subject matters, such as electricity, optics, and pneumatics, guided instruction where neither the facts nor their interpretation compelled consensus. The inherently historical science, geology, was a favorite subject of the age: the earth received a history, and the cosmos, too; evolutionary ideas found applications everywhere. The new physics and the new history became potent weapons of Enlightenment. A product of their collaboration is the lengthiest history of physics ever written, J.G. Fischer's *Geschichte der Physik* (8 vols., 1801-1808). It appeared within a series edited by Johann Gottfried Eichhorn, Germany's leading exponent of the "higher criticism," the corrosive application of historical and literary considerations to the stories of the Old Testament. The writings of historians like Eichhorn were more subversive than the work reported by Fischer in so far as humans are more concerned with their place in the world than with the details of its behavior. The coincidental matriculation of modern history and experimental physics, and its consequences, will be discussed.