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Going Home

continued from page 33

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Dr. Nathan Smith and Early American Medical Education

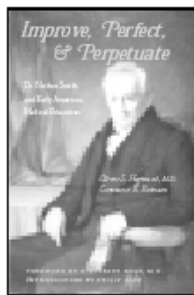
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Foreword by C. Everett Koop, M.D.; Introduction by Philip Cash

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Jack Hoopes

continued from page 61

on a score of projects funded in about equal measure by corporate contracts and NIH grants. The complex he oversees includes seven "wet labs," labs for five bioengineers, three experimental operating rooms, a laser laboratory, and a device to deliver radiation therapy. The research component of the surgery residency program, which now includes an obligatory year of research experience, is also run out of this complex.

Hoopes's newest project involves looking at the treatment of spontaneous tumors in pets as a model for treating human cancer. In addition, as part of his continuing interest in the care of animals, Hoopes and his wife, Vicki Scheidt, D.V.M., are co-owners of the Hanover Veterinary Clinic. Scheidt, a specialist in veterinary dermatology and allergy, runs the day-to-day operations at the clinic, while their seven-year-old daughter, Mollie, considers it her own private zoo. But, unlike young Gerald McGrew, she likes her "zoo" just the way it is. ■

Heart Failure

continued from page 37

attacked not only the Stoics' ideas but also the leading proponent of the Stoic view, Chrysippus.

Galen's philosophical framework was also heavily influenced by science (or, one might argue, vice versa). Dutch historian Teun Tieleman, in his 1996 book *Galen and Chrysippus on the Soul*, explains that Galen viewed scientific facts as test cases for philosophical ideas. Therefore, Galen believed, if he could bring science to bear on the Stoic view of the monistic heart, he would win his point. His own words highlight his devotion to the Platonic view of the soul's location: "Now where will proof of this be found? Where else but from dissections?"

Building his case

Galen tried to make his case by proving that the whole soul could not possibly be located in the heart, as the Stoics contended. Instead, he tried to show that the three powers of the Platonic soul—the rational, the spirited, and the desiderative—were each matched by a corresponding organ system. For just as every body part had to have a specific function, in Galen's mind every function had to have a corresponding organ. He desperately wanted to identify three parallel organ systems running throughout the body in order to combat the Stoic theories that he found so pernicious.

Accordingly, when he observed three systems that extended throughout the whole body—the veins, the arteries, and the nerves—he seems never to have considered that the arteries and the veins might be an interconnected loop. Instead, he labeled the brain as the seat of reason and the liver as the seat of desire, which left the heart to be the seat of emotion. To conceive of the heart's arteries as transferring blood to the liver's veins would have undermined this concept and thus weakened his attack on the Stoics.

The way Galen saw it, the existence of these three systems provided clear evidence that his preconception was correct, and he was satisfied with relatively few experiments proving that each system distributed the power he had assigned to it.

Incidentally, Galen failed to acknowledge

in his writings the views of those who considered the brain to be the center of emotion and reason. This was a strange oversight, because Chrysippus wrote about this view even though he did not espouse it. It was also an unfortunate oversight, because if Galen had disassociated the emotions from the heart, he might have been able to see its true function. For although he held the more progressive position—that reason emanates from the brain, not from the heart—his staunch opposition to the Stoics' view of the heart prevented him from thinking further about its true role. Once he thought he'd proved one anti-Platonic theory wrong, he proceeded no further.

Galen's preoccupation with the dialectic mindset of his era may be understandable, but it was detrimental scientifically. Instead of studying all the data in order to form a hypothesis, Galen commenced his investigations with a clear objective in mind. He thus used his mental resources to determine whether the heart was an emotional center, and whether it controlled reason, instead of exploring larger questions that might have revealed its true function. Of course, Galen did find some evidence suggestive of his tripartite theory. But he would have benefited from the advice of Claude Bernard, a 19th-century French physiologist who pointed out that researchers must be extremely careful not to find what they are looking for. "It is what we think we know already that prevents us from learning," wrote Bernard. "We must never make experiments to confirm our ideas, but simply to control them."

A pertinent precaution

Bernard's precaution, like the lesson to be drawn from Galen's exploration of the heart, remains pertinent today. Medical historians point out that one of the reasons for studying ancient medicine is to see how early doctors came to be misled, for it is not impossible that their failures are like our own. The story of Galen and the heart is a case in point. He had a goal, and even though his observations did not always support this end, he persisted in holding to the Platonic view of the heart as an emotional organ, ignoring all the evidence pointing him toward an understanding of circulation.

"Though he sees the truth, he does not use it": So said Galen of Chrysippus. Yet his theory must say the same of Galen. ■

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