

January 31, 1989

Prof. Van P. Carey  
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Dear Mr. Carey,

Thanks for your letter of January 23rd in which you ask me to review E.F. Adiutori's paper on the origin of the heat transfer coefficient for the 1989 National Heat Transfer Conference.

Actually, Adiutori and I have been swapping letters on this paper for a few months. Consequently I couldn't possibly write an anonymous review of the work. What I'll do is to put the review forms aside and summarize some points from our conversation in this letter. You may show him the letter.

The paper is correct in most of its facts. I believe he'll concede my largest objection. In his *Optiks*, Newton speaks of heat flow in such a way as to make it virtually certain that he *does* understand heat as an extensive quantity. Fixing that will require Adiutori to weaken several of his other statements (e.g., the second first bullet entry from the bottom of pg. 16 and the third bullet entry from the bottom of 17.) However, a softening of the general tone of the paper will have the ancillary effect of making the paper more, rather than less, convincing.

Another set of changes should make it clear that this is not the first paper to clear up misconceptions about "Newton's Law" perpetrated by early heat transfer authors and carried on by others. Ulrich Grigull, for example, made the basic correction. (see e.g., his later English version in *Warme und Stoffubertragung*, Vol. 18, 1984, pp. 195-199.) Fewer people misunderstand Newton's original law than Adiutori suggests.

But what Adiutori accomplishes here, and the reason I recommend you to invite him to present the paper, is that he opens up some interesting angles and a very basic consideration of the *concept* of heat flow.

Very truly yours,

Prof. of Mech. Engr.