

Cook R D & Burnstock G. The ultrastructure of Auerbach's plexus in the guinea-pig. I. Neuronal elements. *J. Neurocytology* 5:171-94, 1976.  
[Department of Zoology, University of Melbourne, Parkville, Victoria, Australia]

The paper attempted to classify the neurons and axon terminals within Auerbach's plexus on the basis of their ultrastructural appearance. The neurons were tentatively classified into nine different cell types, and the nerve endings were classified into eight different types according to the shape, size, and type of synaptic vesicle within the ending. [The *SCI*<sup>®</sup> indicates that this paper has been cited in over 135 publications.]

Robert D. Cook  
School of Veterinary Studies  
Murdoch University  
Murdoch, Western Australia 6150  
Australia

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This paper and its companion<sup>1</sup> were the result of a 15-month sojourn at the University of Melbourne in Australia and a diversification from experimental neuropathology. I had just completed a three-year postdoctoral fellowship in the Department of Pathology (Neuropathology) at Albert Einstein College of Medicine in the Bronx, New York, and had decided to see what Australia had to offer rather than return to the UK. I had corresponded with Geoff Burnstock in Melbourne, and although he had been unsuccessful in obtaining research funds for me, I still turned up on his doorstep in January 1974. Burnstock was on holiday in New Zealand at the time, but within two weeks of his return in February he somehow managed to find funding for me. He suggested that I undertake an ultrastructural study of the myenteric plexus of the guinea pig with the aim of identifying nonadrenergic, noncholinergic (purinergic) axon terminals.

Within a very short time, I realised the problems associated not only with the identification

of possible purinergic endings but also with confidently identifying other terminals, especially with the restrictions imposed by the then-accepted concept of adrenergic and cholinergic transmitters of the autonomic nervous system.

I was perhaps fortunate, since around this time there was increasing discussion of the role of other neurotransmitters within the autonomic nervous system. In fact, while in New York I collaborated with Michael Gershon's group, and we obtained some evidence that serotonin (5-HT) was a possible transmitter in this plexus.<sup>2</sup>

Thus, it seemed necessary to try to determine the basic morphological features of both axon terminals and neurons at the ultrastructural level to establish a baseline. However, another problem was soon recognised. As we point out in the paper, it was the difficulty of precise identification of a terminal since, within a thin section, the appearance and identification of a varicosity could vary depending on the plane of section. Such variation makes a precise classification of both neurons and axon terminals very difficult.

From correspondence over the past 10 years, it does seem that this paper provided a basic description upon which more detailed studies have led to a better understanding of this very complex and intricate nerve plexus. [Burnstock published a review of the field in 1981.<sup>3</sup>]

After leaving the University of Melbourne, my research interests once again turned to neuropathology and demyelinating diseases. Unfortunately, my reading and current knowledge of literature in this area is very restricted, although I was interested to see that another recent *Citation Classic* featured a paper by J.B. Furness and M. Costa<sup>4</sup> (and cited their 1987 book on the enteric nervous system<sup>5</sup>), who were also in Melbourne at the same time.

1. Cook R D & Burnstock G. The ultrastructure of Auerbach's plexus in the guinea-pig. II. Non-neuronal elements. *J. Neurocytology* 5:195-206, 1976. (Cited 130 times.)
2. Dreyfus C F, Cook R D & Gershon M D. Uptake of 5-hydroxytryptamine by intrinsic neurons of the myenteric plexus. *Fed. Proc.* 33:562, 1974.
3. Burnstock G. Neurotransmitters and trophic factors in the autonomic nervous system. *J. Physiol.—London* 313:1-35, 1981. (Cited 145 times.)
4. Furness J B & Costa M. Types of nerves in the enteric nervous system. *Neuroscience* 5:1-20, 1980. (Cited 275 times.)  
[See also: Furness J B. *Citation Classic. Current Contents/Life Sciences* 30(12):17, 23 March 1987.]
5. ———. *The enteric nervous system*. Edinburgh: Churchill Livingstone, 1987. 287 p.