CC/NUMBER 12
MARCH 25, 1991

This Week's Citation Classic®

Dubner R, Sessle B J & Storey A T. *The neural basis of oral and facial function.* New York: Plenum Press, 1978. 483 p. [Natl. Inst. Dental Res., Bethesda, MD; Fac. Dentistry, Univ. Toronto, Ontario; and Fac. Dentistry, Univ. Manitoba, Winnipeg, Canada]; and **Price D D & Dubner R.** Neurons that subserve the sensory-discriminative aspects of pain. *Pain* 3:307-38, 1977. [Natl. Inst. Dental Res. and Anesthesiol. Branch, Bethesda, MD]

The book was a review of the state of knowledge related to sensory and motor mechanisms of oral, facial, and pharyngeal function and was intended for neuroscientists and academic dentists and physicians. The review article presented lines of evidence supporting a role for neurons participating in sensory aspects of pain and reviewed the existing literature in relationship to these methodological issues. [The *SCI*® indicates that this book and this article have been cited in more than 205 and 240 publications, respectively.]

The Neural Basis of Oral-Facial Function and Pain

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Having never been a very strong advocate of review articles or similar books, I find it somewhat ironic that the above publications have been so heavily cited. They were written because my colleagues and I felt there was a need to bring together the state of knowledge on the neural basis of oral-facial function and a need to establish criteria for determining whether neurons participated in the encoding of sensory-discriminative aspects of pain. Barry Sessle, Art Storey, and I like to think that our book provided some impetus in a field that was often overlooked outside the dental community. Since 1977, there has been a steady stream of publications dealing with oral-facial sensory and motor function,[1-3] reflecting the expanded interest in the field. The review article by Don Price and me is cited today probably not because of its outdated references in a major field of research, but because it provided a methodological framework for judging whether neurons transmitted information about the sensory aspects of the pain experience.

The origins of the book probably go back to the early 1960s when Storey, a Canadian dentist, and I were seeking doctoral degrees in physiology at the University of Michigan. It was unusual at that time for dentists to pursue research careers in basic science and to find two in the same department at the same university was almost unheard of. I returned to the National Institute of Dental Research, NIH, while Storey took a position at the University of Toronto Dental School. Sessle, another dentist (and an Australian) who had similarly undertaken basic science training and had just completed his doctoral degree in physiology, joined me at the NIH in the late 1960s where we collaborated on studies of presynaptic primary afferent mechanisms in the trigeminal system. When Sessle subsequently took a position at the University of Toronto Dental School, the ideas for the book were born. Our research interests were related, but separated enough that we were able to divide the writing successfully. We decided that our audience would be neuroscientists and academic dentists and physicians with an interest in sensorimotor function of the head and neck. We believe that we succeeded in this effort because of the strong need for source material in a field that was ready to expand.

The 1977 review was a follow-up on ideas that were first raised at a symposium on pain held in Issaquah (Seattle), Washington, in 1973.[4] At that time there was still some question about the existence of specific pathways in the brain subserving pain sensations. Price and I at the NIH decided to expand these methodological issues and to review the existing literature in relation to the lines of evidence that we proposed. The major thrust of our approach was the need to correlate neural activity with measures of behavior related to pain and to develop a strategy for determining whether a given class of neuron participated in the sensory-discriminative aspects of pain. These issues are clearly just as important today as they were in 1977. Recent studies by us and by others continue to utilize this approach in determining the role of different neuronal populations in the sensory aspects of pain.[5-7]

1. **Anderson D J & Matthews B,** eds. *Pain in the trigeminal region.* Amsterdam, The Netherlands: Elsevier/North-Holland Biomedical Press, 1977. 453 p.
2. **Matthews B & Hill R G,** eds. *Anatomical, physiological and pharmacological aspects of trigeminal pain.* Amsterdam, The Netherlands: Excerpta Medica, 1982. 311 p.
3. **Pubols L M & Sessle B J,** eds. *Effects of injury on trigeminal and spinal somatosensory systems.* New York: Liss, 1987. 547 p. (Cited 5 times.)
4. **Bonica J J,** ed. International Symposium on Pain. (Whole issue.) *Advan. Neurol.* 4, 1974. 850 p.
5. **LaMotte R H & Campbell J N.** Comparison of responses of warm and nociceptive C-fiber afferents in monkey with human judgments of thermal pain. *J. Neurophysiol.* 41:509-28, 1978. (Cited 100 times.)
6. **Hoffman D S, Dubner R, Hayes R L & Medlin T P.** Neuronal activity in medullary dorsal horn of awake monkeys trained in a thermal discrimination task. I. Responses to innocuous and noxious thermal stimuli. *J. Neurophysiol.* 46:409-27, 1981. (Cited 55 times.)
7. **Dubner R, Kenshalo D R, Maixner W, Bushnell M C & Oliveras J-L.** The correlation of monkey medullary dorsal horn neuronal activity and the perceived intensity of noxious heat stimuli. *J. Neurophysiol.* 62:450-7, 1989.

*Received September 12, 1990