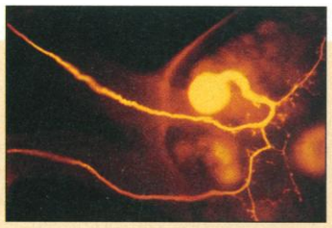
LETTERS

Soundings



DAVID VAN ESSEN

An invertebrate's inner spark provides inspiration for a musical composition (right, leech neuron). Carl Djerassi writes that "the features of a truly novel contraceptive . . . are precisely the economic disincentives" that keep companies from developing such a drug. Another author questions whether new developments in the x-ray analysis of atoms can accurately be described as holography. Clinical trials of "natural" substances to test whether they might prevent cancer are discussed.

Hirudo medicinalis Unplugged

In August 1994, Ken Muller, chair of the neuroscience program at the University of Miami Medical School, asked if I would compose a musical tribute (*1*) to neuroscientist John G. Nicholls (*2*, *3*) for his 65th birthday, as I am a scientist (*4*), a composer, and a former student of Nicholls'.

The "Nichollsfest" was planned for November; I was at the Marine Biological Lab at Woods Hole and had little free time for music until the squid stopped running in September.

Knowing Nicholls' love of Beethoven (whom he often compared to his own mentor, Nobel Laureate Bernard Katz), I based the first movement on Beethoven's music, using thematic gestures and the sonata-allegro form. Nicholls' passion for Peru inspired the rhythms and melodies of the second movement, while the third movement was based on a 15th-century Nahuatl-Aztec poem he translated and sent as a greeting card to all his colleagues in 1993. This movement also uses gestures from a song cycle by Berlioz, "Les Nuits d'Eté."

The thematic material for the final movement was borrowed from the electrical firing patterns of neurons in the central nervous system of the leech *Hirudo medicinalis*, a biological model system (*3*) developed by Nicholls before his current work on the opossum, in which he made significant discoveries about the role of glia and neurons in electrical signalling (*2*, *5*) and about fundamental principles of axonal regeneration (*6*). As an undergraduate student in Nicholls' lab at Stanford in the late 1970s, I was surrounded by these neuronal rhythms, even in my dreams.

To alleviate possible boredom to the noninitiate, I added a Swiss yodel, intended to symbolize Nicholls' position as chair of pharmacology at the BioCenter in Basel, Switzerland.

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References and Notes

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4. E. L. Bearer, J. A. DeGiorgis, R. A. Bodner, A. W. Kao, T. S. Reese, *Proc. Natl. Acad. Sci. U.S.A.* **90**, 11252 (1993); E. L. Bearer, J. A. DeGeorgis, N. A. Madeiros, H. Jaffe, T. S. Reese, *ibid.*, in press.
5. R. K. Orkand, J. G. Nicholls, S. W. Kuffler, *J. Neurophysiol.* **29**, 788 (1966); D. A. Baylor and J. G. Nicholls, *J. Physiol.* **103**, 555 (1969).
6. D. A. Baylor and J. G. Nicholls, *Nature* **232**, 268 (1971); J. G. Nicholls, *The Search for Connections: Studies of Regeneration in the Nervous System of the Leech* (Sinauer, Sunderland, MA, 1987).
7. I thank K. Muller and many other colleagues of J. G. Nicholls for support in producing the CD.

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Striving for Creativity

My joy in seeing the title of Eliot Marshall's article "NIH panel urges overhaul of the rating system for grants" (News & Comment, 31 May, p. 1257) turned to dismay when I read that members of the National Institutes of Health (NIH) panel evaluating the peer-review system "left innovation out," according to Hugh Stamper (extramural research director at the National Institute of Mental Health), "because it seemed a bad idea to suggest that every grant should strive for creativity." The current very low proportion of funded grants coupled with a rating system subject to a ceiling effect effectively results in a blackball system: Even one disgruntled