

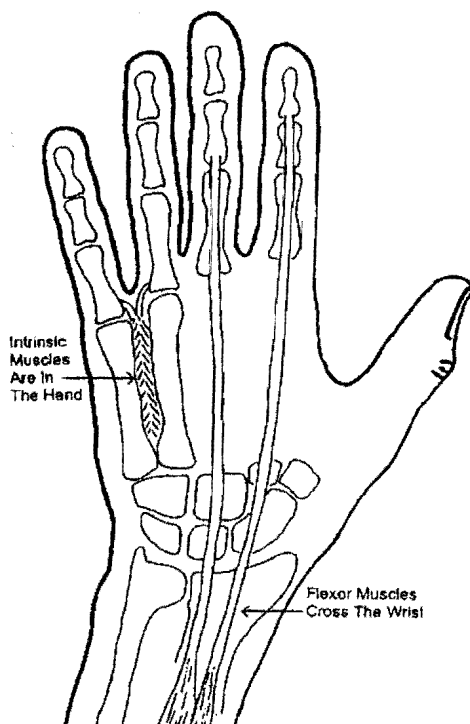
## LICKS & LETTERS

Dear BNL Editor:

After picking self-taught banjo since 1960, I decided four years ago to indulge myself in an annual lesson from instructor Bill Evans to modernize my technique. Banjo musicianship had evolved light-years since the early Pete Seeger how-to manual days, and my fundamentals were obsolete and in disarray. In between jam sessions over the decades, I had gone to medical school and become a hand surgeon. Although the biomechanics and anatomy of the hand are subjects of professional fascination to me, my banjo skills were embarrassingly primitive. Forty years ago, there was no *BNL*, banjo camps, or videos to help learn the fundamentals properly. Tablature was almost unknown. All you could do was hope and wait for a 5-string picker to come to a nearby venue to perform and show some helpful hints from the stage. While in the Peace Corp in 1963, my brother read a feature article on the American folk music revival in an overseas issue of *Life* magazine. A two page layout photograph showed my boyhood idol Eric Weissberg and his group the Tarriers performing in a club in western Massachusetts. In the audience were the young and attentive faces of my brothers and myself. The picture is enshrined in family archives.

For all these years, I had been picking the 5-string with my wrist cocked back instead of arched downward like

Earl. Evans showed me videos of the Master. Students of hand surgery know that an arched-down posture of the wrist diminishes the tendon force of the forearm muscles that cross the wrist and thus transfers mechanical advantage to the intrinsic muscles of the hand that provide power to the big knuckles where the dig-



its join the hand (see figure). The intrinsic muscles are programmed by the brain to perform skilled tasks, whereas the forearm muscles accomplish only simple jobs like hook-grasp for carrying a suitcase. Easy, I thought. It's all in the wrist. Bad habits, especially those self-taught and

imprinted years ago, are hard to exterminate. Without a mental check list, it more than a year before my wrist would automatically arch downward like Earl's.

Several lessons later, mentor Bill Evans had me re-focus again on my truant fundamentals. My finger pick attack on the strings was uneven and lacking clarity between the notes. Bill shared new insight to improve the mechanics of effective finger stroke that he had learned from a British classical guitarist. The big knuckles in the hand should be the primary axis of torque for digital ballistics rather than picking from the smaller joints in the finger. To my satisfaction, or relief, this mechanism was completely compatible with the wrist posture thesis. In my errant pre-lesson days, a cocked-up and incorrect wrist posture had shifted the balance of power in my hand to the tendons of the forearm muscles that cross the wrist and move the smaller joints of the fingers. With this mechanical disadvantage, my picking speed and clarity were never able to gain velocity because of inefficient power to the digits. A no-brainer, I thought. It's all in the knuckles. It should take no more than twelve months to re-train my fingers to deliver pick stroke from the big knuckles.

At my request, Evans next taught me the cruel rudiments of melodic style picking. My first intensive practice session after the lesson was so mentally exhausting that I had to stop and take a nap. Wrist, knuckles? It's all in the head, I thought. My hope was for instant gratification, but it may take years to conquer and internalize the scale exercises. Although the banjo is a magical but sometimes vexing stringed instrument, the hands and brain team-up and learn to liberate the music stored within it. The hand is an evolutionary marvel of biomechanics and compact anatomy, and the cerebral cortex conditions our digits to dance over the fretboard like ballet. In *Leaves of (Blue) Grass*, poet Walt Whitman observed, "And the narrowest hinge in my finger puts to scorn all machinery."

—Barry J. Gainor, MD, Professor of Orthopedic Surgery, University of Missouri Hospitals, Columbia, MO