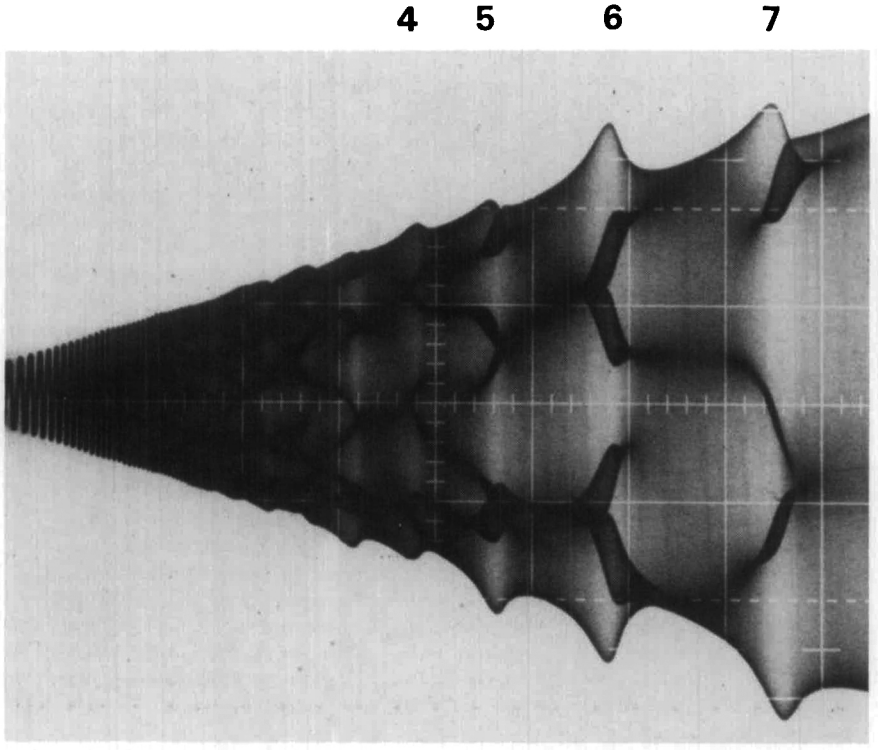
Figures appearing in the EDITOR'S CHOICE are those arising from materials research which strike the editor's fancy as being aesthetically appealing and eye-catching. No further criteria are applied and none should be assumed. When taken out of context, such figures often evoke images beyond and unrelated to the original meaning. Submissions of candidate figures are welcome and should include a complete source citation, a photocopy of the report in which it appears (or will appear), and a reproduction-quality original drawing or photograph of the figure in question.



The shape depicted in this issue's EDITOR'S CHOICE might have resulted from the process of natural selection in the biosphere. This barbed arrowhead could have served as insect stinger or seed-pod protector. It does however come to us from a novel characterization method which, in this case, was applied to one of the new high-temperature superconducting compounds. As reported by C. Jeffries, Q.H. Lam, Y. Kim, L.C. Bourne and A. Zettl (all from the University of California, Berkeley and the Lawrence Berkeley Laboratory) in a rapid communication scheduled for the June 1 issue of *Phys. Rev. B* (Vol. **37**, No. 16), this figure displays the (subharmonic) response voltage picked up from a coil surrounding a powdered polycrystalline sample of $YBa_2Cu_3O7_{-x}$ as a function of the frequency of a driving radio-frequency axial magnetic field. The coil is resonating at about 350 kHz, so the voltage response is seen superimposed on the oscillatory envelope. The horizontal axis represents a sweep of driving frequency from nearly zero to 100 kHz. A marked nonlinear response of the sample accounts for the "barb-like" (sub)harmonic peaks at 1/n of the coil resonant frequency. The authors explain that these arise from loops of supercurrent which span grain boundaries that introduce Josephson junctions (or other weak links) into the current path. For this figure, an additional small (1.6 G) static magnetic field along the coil axis is applied to add the even harmonics (labelled 6 and 4) to the odd ones (5 and 7) which occur in zero field. In power spectra, harmonics up to n = 23 have been observed.

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