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is often used to examine manuscripts and works of art, results for many of the Leonardo drawings had so far been spotty. (Ultraviolet light excites the surface of paper, producing fluorescence; but dark lines—even invisible traces of lines—will not fluoresce, thus allowing faded markings to reappear.) The authors speculate that since earlier experiments involved chalk landscape drawings on paper coated with calcium, ultraviolet light could not distinguish the lines from the paper.

The drawings in the Roberts-Pedretti study, however, appear to have been made with a metallic instrument—probably an alloy of copper and lead—whose tracings inhibit fluorescence even though they are no longer visible to an unaided eye. Unfortunately, a precise chemical determination cannot be carried out without destroying a part, however minute, of the original drawing.

Settling Scores

"A Reappraisal of Schubert's Methods of Composition" by L. Michael Griffel, in *Musical Quarterly* (Apr. 1977), 866 Third Ave., New York, N.Y. 10022.

Many musicologists have claimed that composer Franz Schubert (1797–1828) wrote his music rapidly, intuitively, almost impulsively, without the laborious reworking that marks the finished scores of Beethoven and other contemporaries. But in this careful analysis of Schubert's autograph scores, Griffel, professor of music at Hunter College, argues that the composer's creative process was in fact arduous and methodical.

Schubert followed his working procedure rigorously. First, the piano score was sketched, then the melody-carrying voices on the orchestral score, followed by the other parts. One shade of ink was used for the melodies, another for other voices, revisions, and corrections. Some drafts would become illegible because of the number of errors; they would therefore be recopied, yielding the clean pages that have misled specialists for so long. (In other words, observes Griffel, the faultless pages in a Schubert autograph score are the very pages that gave him the most trouble.) Once a manuscript was completed, dated, and signed, the composer would destroy all his preliminary sketches—unlike Beethoven, who left behind a record of trial and error.

Thus, the "Great" Symphony, says Griffel, was written and revised over a three-year period (1825–28), and its pencil corrections and different colored inks and paper reveal clearly the various stages of the work. Griffel also throws light on the mysterious "Unfinished" Symphony—the "cleanest" of Schubert's works—which boasts a signed and dated title page (den 30. Octob 1822. Wien) despite the fact that it was incomplete. Griffel speculates that the composer made a gift of it to the Styrian Music Society in Graz (which had elected him an honorary member) because he was too ill, and later too lazy, to compose something new.