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COVER Photomicrograph of *Anabaena* species strain DW12-2.2 filaments containing a mutant *xisA* gene that was inactivated by site-directed insertion of an antibiotic gene cassette. The mutant strain forms heterocysts when transferred to a medium lacking a source of combined nitrogen, but the heterocysts are unable to excise an 11-kilobase DNA element from the chromosome and do not fix nitrogen. See page 1421. [James W. Golden, Texas A&M University, College Station, TX 77843]

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