

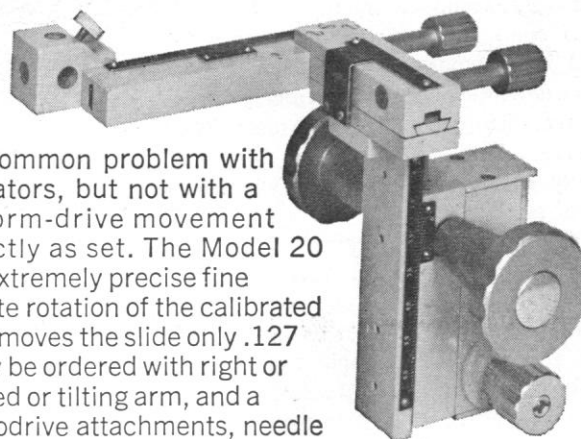
Fight backlash with a Prior Micromanipulator.

Backlash is a common problem with many micromanipulators, but not with a Prior. Its robust, worm-drive movement always remains exactly as set. The Model 20 shown here features extremely precise fine adjustment; a complete rotation of the calibrated fine adjustment knob moves the slide only .127 mm. The Prior 20 may be ordered with right or left-hand controls, fixed or tilting arm, and a variety of bases. Microdrive attachments, needle holders and other accessories are available.

Prior Micromanipulators are made in England, with much the same care and expert craftsmanship as goes into a Rolls-Royce. Every instrument is thoroughly tested and individually adjusted before delivery. For literature on the Prior 20, write: E. Sobotka Co. Inc., 110 Finn Court, Farmingdale, N.Y. 11735.

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LIGHT (18 ounces) AND SMOOTH (ball bearings)... OUR MM-33 MINIATURE MICROMANIPULATOR.

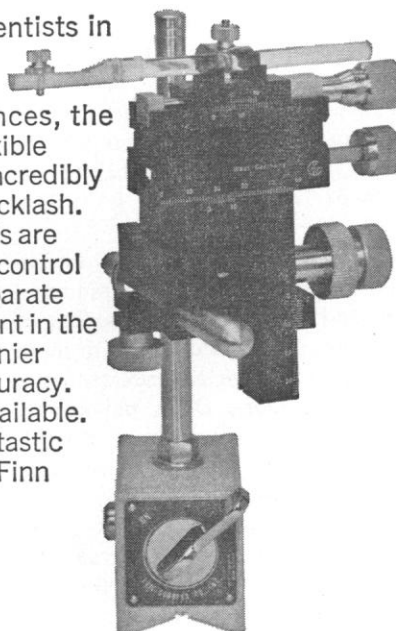
We designed the MM-33 for scientists in need of a lightweight micromanipulator with ultra-precision. Crafted of aluminum and weighing only 18 ounces, the MM-33 eliminates swaying, even on flexible stands. Ball-bearing slideways assure incredibly smooth, wear-free operation without backlash.

For ease of adjustment, all controls are aligned in a linear plane. Coaxial knobs control vertical and horizontal movements. Separate knobs control coarse and fine adjustment in the X plane, with micrometer drum and vernier readings to 0.1 mm with 10 micron accuracy. For mounting, a variety of stands are available.

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To achieve community control of breeding, would it "be just as effective," as Webb says, "to sterilize all men as to sterilize all women"? *By definition*, yes; but there has been no proposal to sterilize *all* of either sex. If only some are sterilized, and those only after they have had children, the effectiveness of the two alternatives is not the same.

Debaters tend to forget that we are not a perfectly monogamous people. Extramarital intercourse is not rare; and divorce and remarriage create what has been called "serial polygamy." For these reasons the sterilization of *x* men can be expected to be less effective in reducing births than the sterilization of *x* women.

My statement that women "want more children than the community needs" was based on the evidence assembled by Kingsley Davis [*Science* **158**, 730 (1967)]. But it must be admitted that "wants" are not permanent facts of life like chemical valence and specific chromosome numbers. We may be able to modify wants; we should seek to do so.

I do not think my identifying women as the intrinsically responsible sex in reproduction is the result of "blatant but possibly unconscious male supremacy," as Butler put it. Once women have at their command a perfect system of birth control (contraception plus elective abortion as a backstop), they will have almost complete power over the reproductive process. A woman who wants a child can easily find a man to furnish spermatozoa.

When women can completely avoid having children they do not want, men become powerless to "have children" by a unilateral decision. The sexes are not equal.

Power and responsibility need to go together; there really is no defensible reason why women should reject responsibility once they possess—and realize they possess—power.

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Wasting Waste

In "Waste-water treatment: The tide is turning" (31 July, p. 457), Robert Holcomb comments on the problems of disposing of the sludge produced by sewage treatment plants. He writes that the "sale [of sludge] as fertilizer or soil conditioner . . . will probably decrease

as disposal by incineration increases." If true, this is very sad, for the land in this country is in need of the organic material which the sludge would provide, while the air is abundantly full of the pollution caused by incineration.

MARION E. PERKUS

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Oneonta, New York 13820

. . . Perhaps my ignorance makes me unduly alarmed, but can we really afford to continue to destroy the potential soil-conditioning and fertilizing components of sewage? What do the ecologists say—are we wasting waste?

M. LIEB

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Vigor of Northern Hardwoods

In his article "Effects of pollution on the structure and physiology of ecosystems" (24 Apr., p. 429), G. M. Woodwell mentions that nutrient losses from cutting all trees on a watershed "will cause a large reduction in the potential of the site supporting living systems as complex as that destroyed—until nutrients accumulate again." I hope readers of this portion of Woodwell's article are not misled into believing that total tree removal per se (or "clearcutting" as referred to by foresters) will consistently bring about a deleterious change in the terrestrial plant community (1).

When a mature stand of timber is clearcut, an almost identical living system as that removed can be regenerated immediately (2). Silvicultural studies at the Barlett Experimental Forest in New Hampshire show that northern hardwoods renew themselves when the mature stand is completely removed in small blocks, patches, or strips. In fact, species composition and tree quality of the regenerated stand in many cases are better than that found in the natural ecosystem.

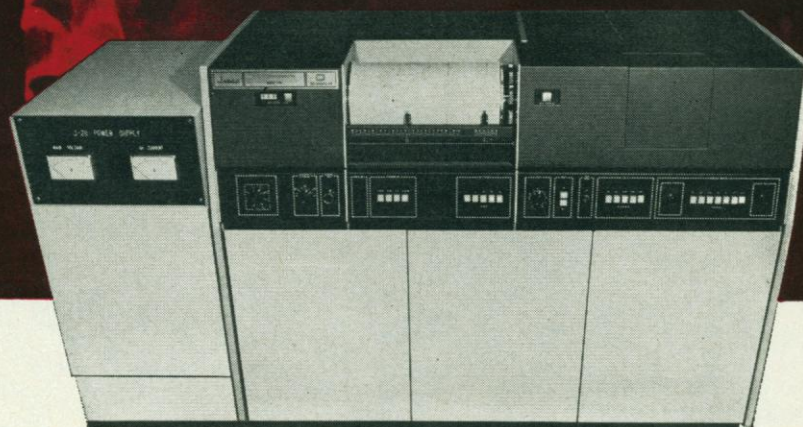
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USDA Forest Service,
Post Office Box 640,
Durham, New Hampshire 03824

References

1. W. B. Leak, D. S. Solomon, S. M. Filip, "A Silvicultural Guide for Northern Hardwoods in the Northeast," *U.S. Dep. Agr. Forest Serv. Res. Pap. NE-143* (1969).
2. D. A. Marquis, "Clearcutting in Northern Hardwoods: Results after 30 Years," *U.S. Dep. Agr. Forest Serv. Res. Pap. NE-85* (1967).

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