

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.

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. . . 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?

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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.

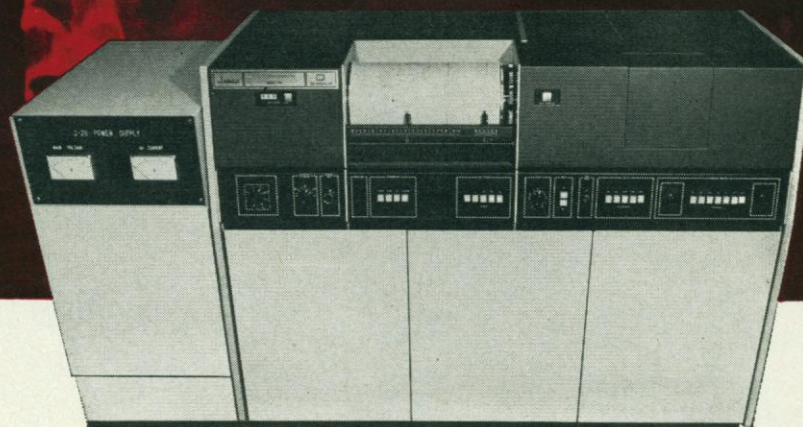
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### References

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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