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This Week

- 228 Age, Depression, Drugs Linked to Suicide
- 228 The return of rheumatic fever?
- 229 Huntington's disease: Clues to the culprit
- 229 NASA sets shuttle launch date, schedule
- 230 Home apnea checks: Caveats for infants
- 230 Financing Superfund
- 230 Patent Office: New rules for 'secrets'
- 231 Largest melt from lightning strike
- 231 Graham is confirmed
- 231 A dizzying orbit for a binary star

Research Notes

- 238 Biology
- 238 Biomedicine
- 239 Earth Sciences
- 239 Physics

Articles

234 Survival of the Fetus

Cover: The birth of a healthy child depends on complicated interactions between fetus and mother, including mitigation of the mother's immune system. The uterus recognizes when a foreign organism such as a fetus is there. But the fetus protects itself by secreting a substance that limits the activity of immune system cells in the uterus, according to David A. Clark of McMaster University. (Photo: Joel Greenberg)

236 Staring at the Poles of the Sky

Departments

- 226 Books
- 227 Letters

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Letters

Archivists left in the lurch

"Putting it on paper permanently" (SN: 9/6/86, p. 153) gave the reader a very negative view of the archival capability of magnetic recording. My reading of the report from the National Academy of Sciences does not support the statement that "magnetic tapes themselves last only 10 to 20 years." My own experience belies that statement. Iron oxide is stable, film base is stable and the binder is stable, as the report states.

What is not stable is the equipment technology. Recording density continually advances, pushing out old equipment to make way for better. This can leave the archivist in the lurch. This may not happen if, for the archival applications, we choose a standard and stay with it for a predetermined period, instead of leaping to the next innovation. After all, we have stayed with paper for 200 years. We do not store data on paper at its ultimate capability of 100 line pairs/mm; rather we stay at a comfortable and adequate 8-10 line pairs/mm. So with magnetic tape we might reason-

ably stay with, say, 10 million bits/square inch (156,000 8-bit-bytes), which represents a real density compression of about 1,500 to 1 of the printing in SCIENCE NEWS.

Since tape is typically less than half the thickness of paper, but written only on one side, this represents the ability to volume compress by 1,500: 1 also.

All we will need, then, is to obtain an undertaking from one or two large companies in the magnetic recording business to provide durable equipment that will be supported for archival time spans.

R.J. McClure
San Diego, Calif.

Correction: "CO₂: An additional source of methane?" (SN: 9/6/86, p. 150) may have implied that all increases in agricultural yields since the Industrial Revolution have been due to fertilization from carbon dioxide. In fact, only about 8 to 12 percent of increased yields may be due to this effect, according to Boyd Strain, a botanist at Duke University in Durham, N.C.

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227