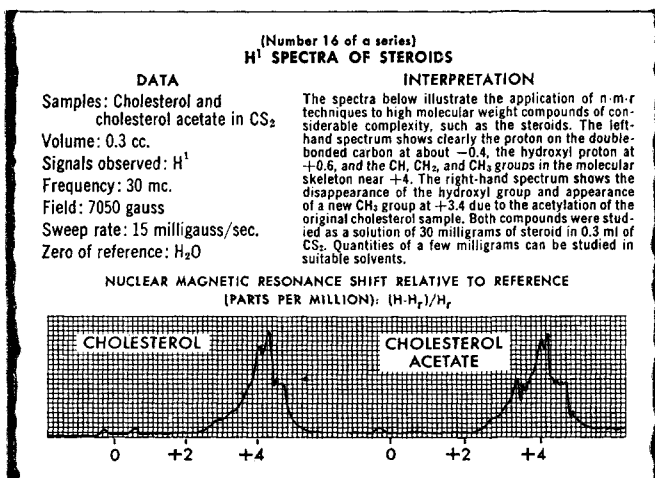


# N-M-R at work ... a 3 year progress report

(Nuclear Magnetic Resonance)

37

## 16 of a series...1955



Compare these early and late examples from Varian's "This is N-M-R at Work" series. N-M-R Spectroscopy has come this far during three short years.

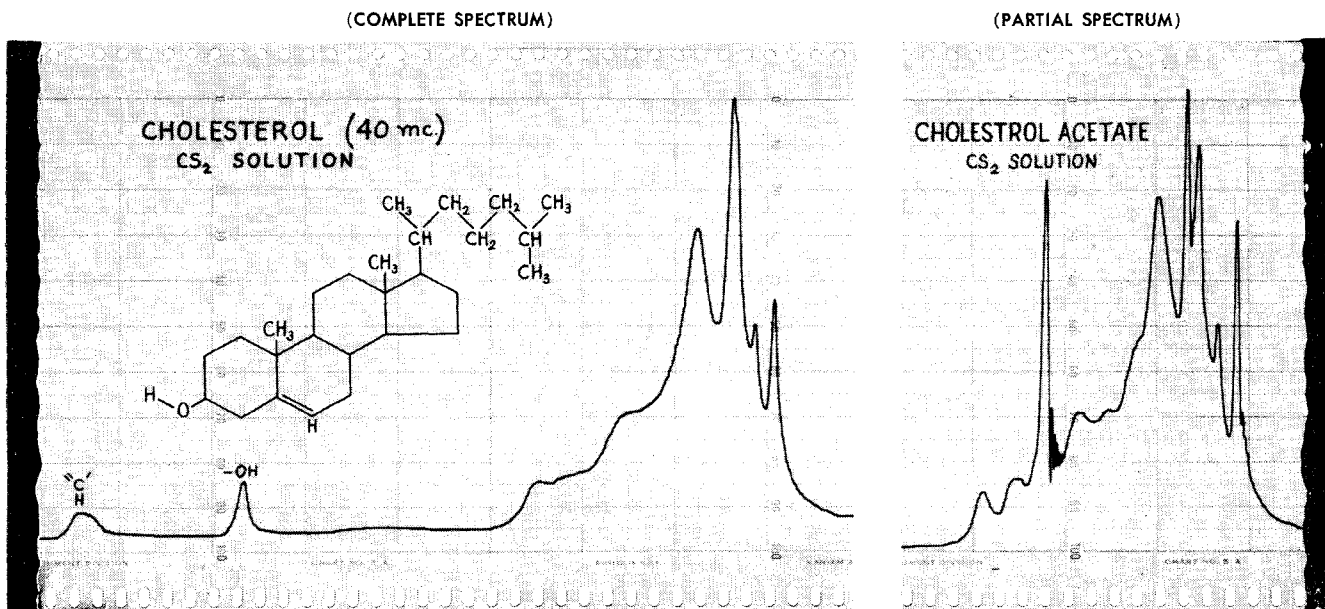
When the spinning sample technique dramatically improved N-M-R resolution, this was reported in the series. When Varian's "Super Stabilizer" extended the time-stability of the applied magnetic field to an almost unbelievable 1 part in 100 million, this too was immediately reported in #22 of the series. These technical improvements have been achieved with careful attention to *compatibility*; the earliest instruments are inherently capable of the high degree of performance available today.

When the series began, there were but three Varian Spectrometers in existence. Today they are spread throughout the free world in Universities, Industry and Government. Not only has the N-M-R series developed into a steady progress report, but in many cases it has included examples which were original contributions to scientific knowledge — an unusual occurrence, we believe, in advertising.

## 37 of a series...1957 SUPER HIGH RESOLUTION IN STEROIDS

**INTERPRETATION:** Before the development of the flux stabilizer presently used with high resolution electromagnets, the full details of the H<sup>1</sup> spectra of many compounds could not be displayed because of the high recording rates required to maintain a monotonic sweep. Flux stabilization now permits very slow sweep rates to be used and the enhancement which results is illustrated below in the spectra of the compounds previously studied in No. 16 of the series. The sweep rate is approximately 0.5 milligauss/sec. An interesting result of this

study is that although the resolution is identical for the two samples, the lines from cholesterol are clearly broader than those from the acetate. This is probably due to the formation in cholesterol of hydrogen-bonded aggregates whose molecular weights preclude completely effective motional averaging of dipole-dipole broadening at room temperature, while the necessarily monomeric acetate molecules tumble about rapidly enough to give narrow lines.



Write for our latest Radio Frequency Spectroscopy Bulletin (Vol. 2-#1). Full technical information on both N-M-R and E-P-R Spectroscopy and the complete "N-M-R at Work" series will be included.



For further information, circle number 10 A on Readers' Service Card, page 77 A