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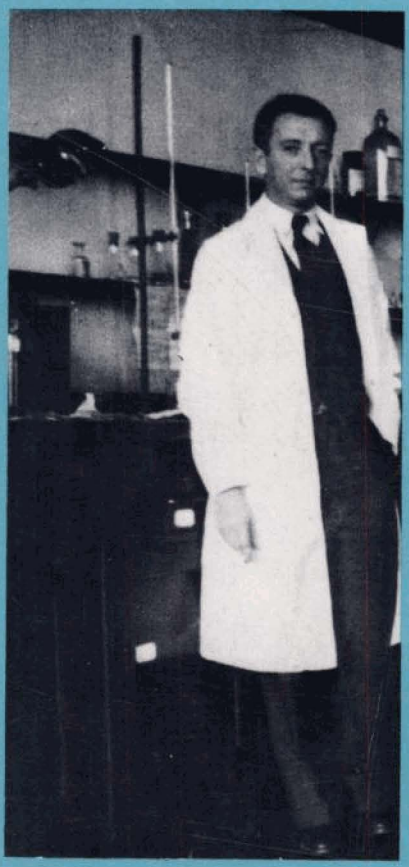
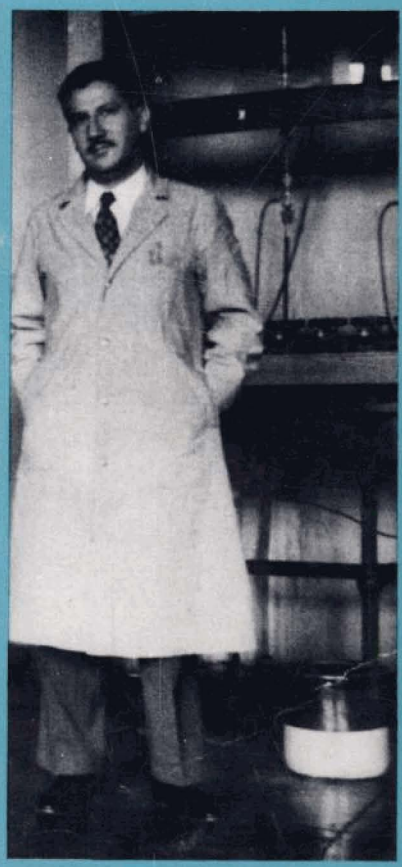
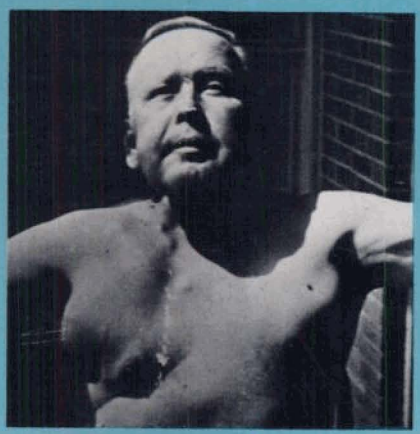
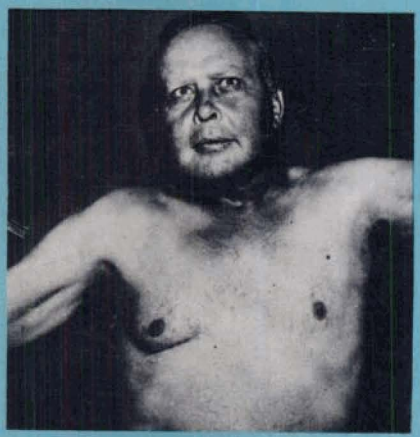
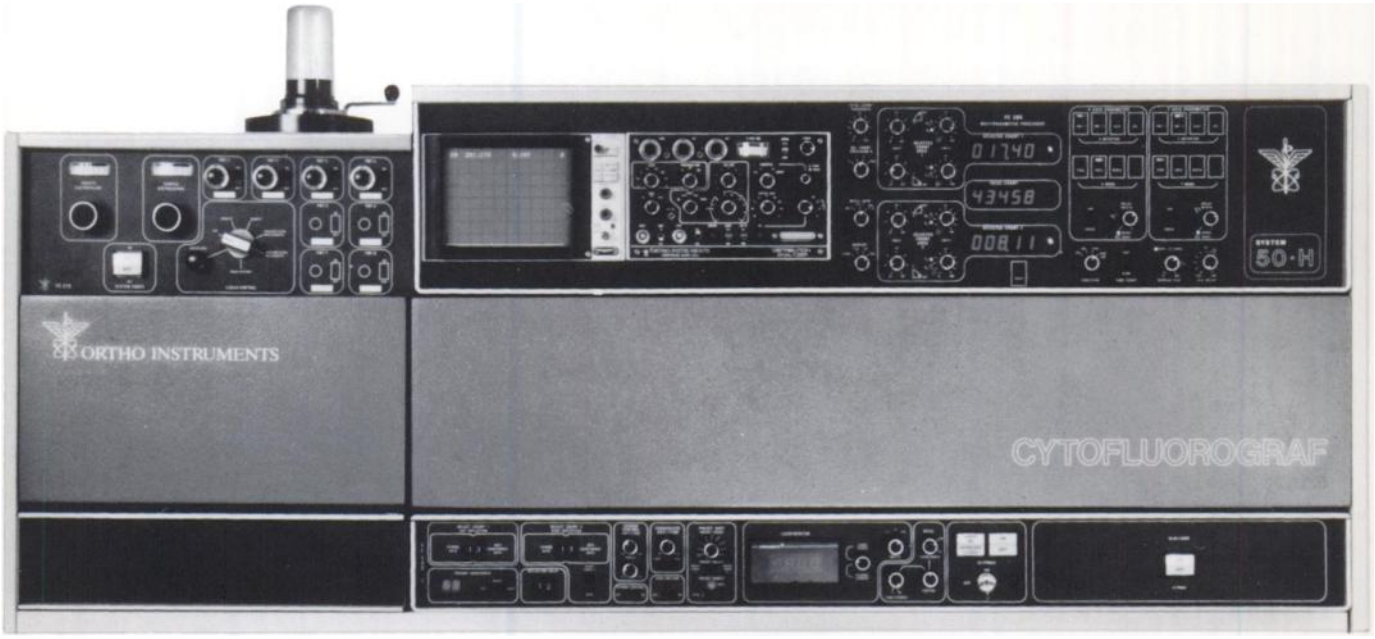








State-of-the-art cell sorting and analysis



with the Ortho Cytofluorograf System 50.

Ortho announces the most powerful, precise, and versatile instrument for cell sorting and analysis ever available commercially: the Ortho Cytofluorograf™ System 50. It combines a rapid cell sorter (based on the electrostatic droplet deflection principle) with a flexible, wide-ranging analysis package in a single versatile unit.

Ortho System 50 for analysis.

Its dual-laser excitation system provides three modes of excitation. There are two single individual-excitation sources for different purposes: a .8 milliwatt helium-neon laser for ultra-high-precision scatter measurements, and a 5-watt argon laser for fluorescence measurements.

There are four detectors: two are photomultiplier tubes for broad visible-range response, two are solid-state photo sensors for axial light loss and narrow forward-angle scatter. A photomultiplier tube provides for measuring wide-angle scatter.

12 measurement parameters.

The System 50 Cytofluorograf permits for the first time yielding of morphological information by a flow cytometric instrument. Because pulse height analysis, pulse area analysis, and pulse width analysis can be selected for every detector output, a total of 12 distinct measurement parameters is available with the System 50. Other features of the system include two bi-dimensional regions of interest, dual histogram multi-channel analyzer with cytogram mode, ultra-sensitive optics, and easy sample entry.

Complete details of System 50 are available in a new brochure from your Ortho representative or direct from Ortho Instruments.

Protocols No. 26: Determination of Purity of Yeast Cells

We would like to bring your attention to an interesting application note contributed by Dr. K. J. Hutter of the Frauenhofer Gesellschaft Institute for Aerobiology, West Germany, No. 26 in the Ortho Protocols series, which describes an immunofluorescent method for differentiating wild strains of yeast cells in cultured yeast using the Cytofluorograf. This method makes available a rapid and precise assay of the degree of contamination.

For a copy of Protocols No. 26, write or call Ortho Instruments.

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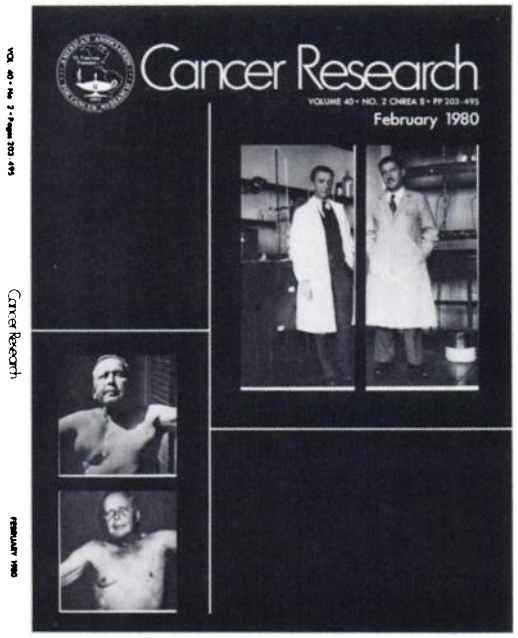
COVER LEGEND



Cancer chemotherapy by alkylating agents was discovered during World War II, under the cloak of secrecy. The full story was published in 1963 by Alfred Gilman (Am. J. Surg., *105:* 574–578, 1963). Work on chemical warfare agents started at Yale University under contract with the Office of Scientific Research and Development (OSRD) in 1943. Nitrogen mustards, particularly the bis- and tris (β-chloroethyl)amines, were studied by chemists and pharmacologists, especially Louis S. Goodman, Alfred Gilman, and Frederick S. Philips. The remarkable sensitivity of normal lymphoid tissue to the cytotoxic action of the nitrogen mustards led to a test by Thomas Dougherty on one mouse with a transplanted lymphoma, with results that encouraged a more extensive investigation. A therapeutic trial in humans was organized by Gustav E. Lindskog, with the first patient being an X-ray-resistant patient with lymphosarcoma. A 0.1-mg/kg dose of bis(β-chloroethyl)amine daily for 10 days was selected. "The response of the first patient was as dramatic as that of the first mouse." Five additional patients were treated at Yale, and the studies shifted to Chicago under Leon O. Jacobson and to the Memorial Hospital in New York under David A. Karnofsky. Reports of their findings were published in 1946 (L. S. Goodman *et al.*, J. Am. Med. Assoc., *132:* 126–132, 1946).

Elaboration of analogs of nitrogen mustard and related compounds led to the eventual clinical use of a wide variety of such drugs. Of particular interest were busulfan (Myleran), an alkyl alkanesulfonate discovered by G. M. Timmis in England; cyclophosphamide (Cytoxan), introduced by G. Domagk of Germany; chlorambucil (Leukeran); and L-phenylalanine mustard (melphalan).

Louis Stanford Goodman was born in 1906 in Oregon and obtained an M.D. degree at the University of Oregon in 1932. Alfred Gilman was born in 1908 in Connecticut and was graduated from Yale with a Ph.D. in pharmacology in 1931. Both became chairmen of departments of pharmacology, at the University of Utah School of Medicine and Albert Einstein College of Medicine in New York, respectively. They collaborated in the writing of the influential *Pharmacological Basis of Therapeutics*, issued in 1941 and in a fifth edition in 1975.

We are indebted to Dr. Goodman for the photographs of himself (*right*) and Dr. Gilman (*left*), taken *circa* 1942, and of the first patient before and after treatment with nitrogen mustard, showing reduction in lymph nodes and facial edema.

M.B.S.