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Clinic of Ludwig Maximilian University in Munich

Collated by Peter Kadar

8(5). Contributions to the Archives

Thomas A. Ban: In memory of three pioneers (Leo Sternbach, Mogens Schou and Roland Kuhn)

Thomas A. Ban: In Memory of Three Pioneers
Leo Sternbach, Mogens Schou and Roland Kuhn

PowerPoint presentation prepared between December 2005 and May 2006. It was written up with the title "In memory of three pioneers" and published in *International Journal of Neuropsychopharmacology*, 2006;9:475-7.

October 31, 2013

**DURING THE PAST TWO MONTHS THREE MAJOR FIGURES IN
THE HISTORY OF PSCHOPHARMACOLOGY PASSED AWAY:**

**LEO STERNBACH
MOGENS SCHOU
ROLAND KUHN**



LEO STERNBACH

The son of a Polish pharmacist Leo Sternbach was born in *Abbazia, Croatia* in **1907**

He studied pharmacy and chemistry at *Jegellonian University*, in *Cracow, Poland*

As a postdoctoral student he was involved in developing synthetic dyes and in the course of this process he synthesized several compounds known as **HEPTOXDIAZINES**, substances with a seven-membered ring

After a short academic career at the *Swiss Federal Institute of Technology* in *Zurich*, he joined **Hoffman-La-Roche** in **Europe**

After leaving Switzerland for the United States, he continued with Roche. He became **Director of Medicinal Chemistry in the Chemical Research Department of Roche in Nutley, New Jersey**

LEO STERNBACH

In the 1940s Sternbach thought that the **HEPTOXDIAZINE** structure might interact with CNS and stabilized one heptoxdiazine with methyl amine. He named the crystalline powder **Ro 5-0690**.

Reprimanded for pursuing his own project on company time he was told to work on synthesizing potential antibiotics.

In the mid-1950s Sternbach in view of the success of Miltown (meprobamate) as a tranquillizer was asked to study the drug and develop something “just different enough to get around the patent.”

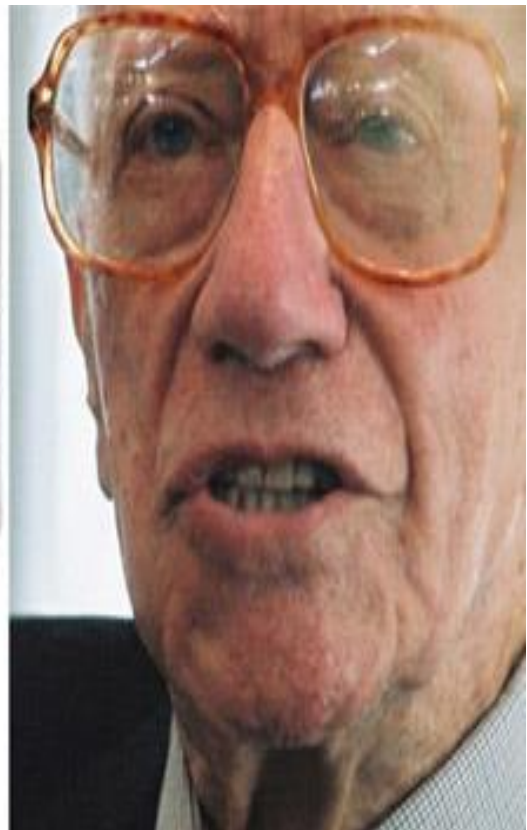
Reminded of his powder (Ro 5-0690) by a colleague who asked whether it should be thrown away, Sternbach decided to test Ro 5-0690 on mice.

In behavioral pharmacological tests Ro 5-0690 was similar to Miltown and different from the barbiturates.

Ro 5-0690, or chlordiazepoxide (methaminodiazepoxide) was given the brand name Librium.



Dr. Leo Sternbach gave the world Librium (1960) and Valium (1963). He doesn't like popping "mother's little helper" himself. He said it makes him feel a tad depressed.



LEO STERNBACH

Between 1969 and 1980 Valium (diazepam) was America's biggest selling drug.

Sternbach continued with his research and developed Mogadon (nitrazepam) for the treatment of insomnia and clonazepam (Klonopin) for epilepsy

He held 241 patents that at a certain point represented a quarter of the sales of Roche.

Sternbach was a recipient of several awards including the chemical pioneers award of the American Institutes of Chemistry (1979).



LEO STERNBACH DIED ON SEPTEMBER 28, 2005
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MOGENS SHOU

The son of a psychiatrist Mogens Shou was born in Copenhagen, Denmark in 1918.

He graduated in medicine from the University of Copenhagen in 1944 and was trained in psychiatry at St. Hans Hospital in Roskilde and at Dikmark Hospital in Norway (with Rolv Gjessing).

After a post-doctoral fellowship in neurochemistry with Heinrich Waelsch in New York, he became a research associate of Erik Strömngren at the Psychiatric Hospital in Risskov.

He continued at the hospital throughout his professional life, becoming chief of the research laboratories and head of the psychopharmacology unit.

In 1971 he was appointed to the first chair in biological psychiatry in Denmark

MOGENS SCHOU

In 1951 Strömngren brought to Schou's attention some publications on the use of lithium in psychiatric patients.

Schou followed it up and:

- in 1954 in collaboration with Strömngren and others he demonstrated the therapeutic effect of lithium in mania
- in 1967 in collaboration with Poul Christian Baastrup he demonstrated the prophylactic effect of lithium in manic depressive illness



MOGENS SCHOU

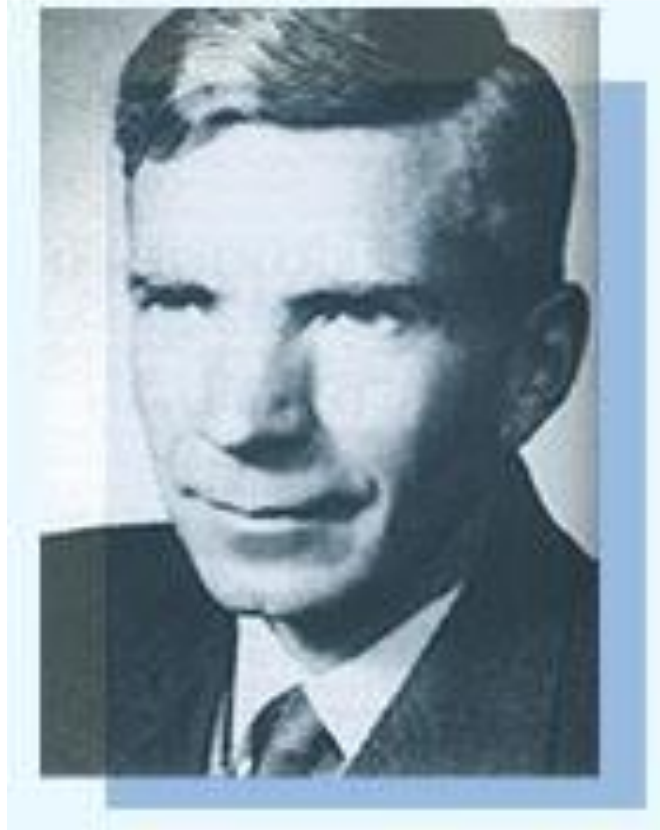
For a long time lithium was neglected by clinicians. The main reason for this according to Schou was: ***“.....quite simply that lithium salts are so inexpensive that no commercial interests are involved. This drug has therefore completely lacked publicity which is invariably given to drugs of higher money earning capacity.”***

In spite of all the difficulties lithium has become one of the most important contributions to pharmacotherapy in psychiatry.

For his research with lithium Mogens Shou received numerous distinctions. He shared the prestigious ***Kittay Prize*** with John Cade and in 2000 he was a recipient of the ***CINP-Pfizer Pioneers in Neurspsychopharmacology Award***.



MOGENS SCHOU DIED ON SEPTEMBER 29, 2005
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ROLAND KUHN

Roland Kuhn was born in Biel, Switzerland in 1912.

He graduated in medicine from the University of Bern in 1937 and was trained in psychiatry at the University Psychiatric Clinic in Waldau/Bern from 1937 to 1939 with professor Jakob Klasi. His direct supervisor was J Wyrsh.

In 1939 Kuhn was appointed senior physician at the “lunatic asylum” of Münsterlingen in the Swiss county of Thurgau.

He continued at the hospital throughout his professional life, nurturing a close friendly relationship with L. Binswanger who directed a private sanatorium in Kreuzlingen.



ROLAND KUHN

Kuhn became involved in clinical testing of new drugs for Geigy, a pharmaceutical company through his teacher E. Grünthal, a neurologist and brain anatomist.

Geigy was looking for a chlorpromazine-like substances for the treatment of schizophrenia and Kuhn suggested to test one of their antihistamines with the closest structural resemblance to chlorpromazine.

The drug G 22 355 was ineffective in schizophrenia but when administered to three severely depressed female patients it had therapeutic effects. In all 3 cases discontinuation of treatment resulted in relapse that was reversed by resumption of the medication. He followed up his observations by treating 40 depressed patients with the drug and on the basis of his findings he concluded that the drug is effective in patients with vital depressive disposition.

Kuhn published his findings on the therapeutic effects of G 22 355 (imipramine), that was given the brand name Tofranil, in vital depression on August 31st 1957 in the Swiss Medical Journal, and presented his findings on the September 2nd 1957 at the 2nd World Congress of Psychiatry to an audience of barely a dozen people.

ROLAND KUHN

There was a strong opposition by academic psychiatry against drug treatment of depression but Kuhn prevailed and by the 1970s pharmacotherapy became the primary treatment modality of depression.

In spite of being one of the key figures in opening up the psychopharmacological era in psychiatry Kuhn remained an outsider of the psychiatric and psychopharmacological establishment. He maintained that the indications of imipramine must be based on the establishment of the vital symptoms and that therapeutic progress in psychiatry is based strictly on the clinical evaluation of the psychopathological changes. In the late 1990s he wrote:

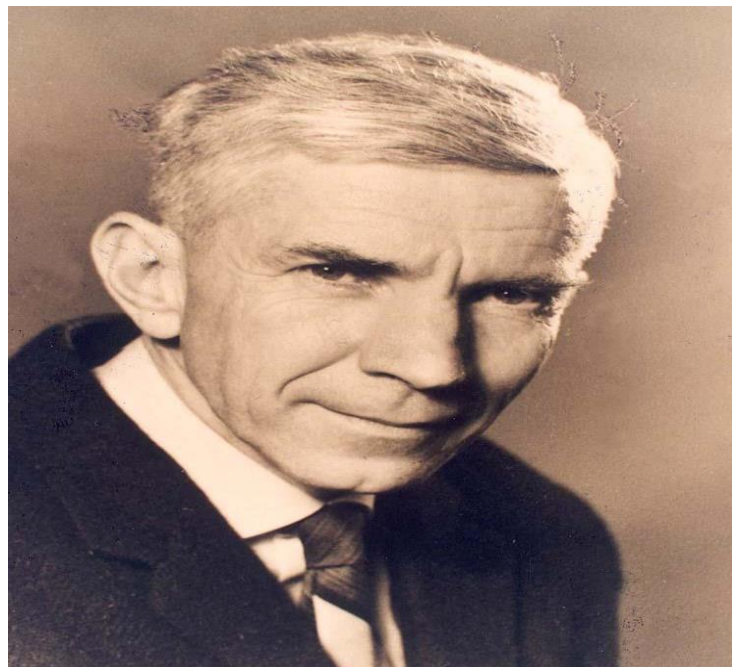
Since the 1960s “there has been a world-wide use of surveys, whose results are exactly tabulated with numbers, statistically evaluated, and represented in tables. People are fascinated by the scientific nature of this sort of activity and overlook just how disproportionately slight such gains are in the treatment of patients.”

ROLAND KUHN

As one of the pioneers of biological treatment in psychiatry, he was one of the speakers at the 2nd Taylor Manor Hospital Scientific Symposium on Discoveries in Biological Psychiatry in Baltimore, Maryland in April 1970.

He was made an honorary doctor of medicine at the University of Louvain and at the University of Basel. He was made also an Honorary Doctor of Philosophy at Sorbonne for his contributions to “dasein analysis”.

May 6, 2021



ROLAND KUHN DIED ON OCTOBER 10, 2005
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The historical contributions of Leo Sternbach, Mogens Schou and Roland Kuhn opened the path for the development that led to the current state of art in pharmacological treatment in psychiatry.