DDT – Fifty years since Silent Spring

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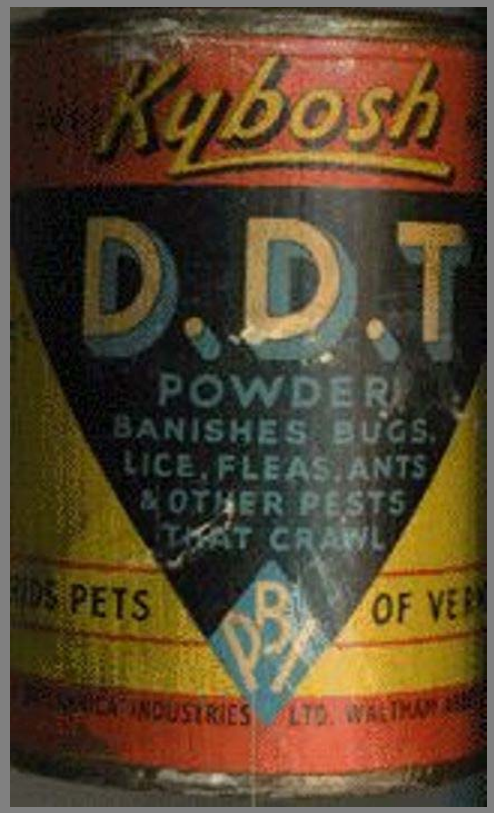
DDT - an efficient insecticide

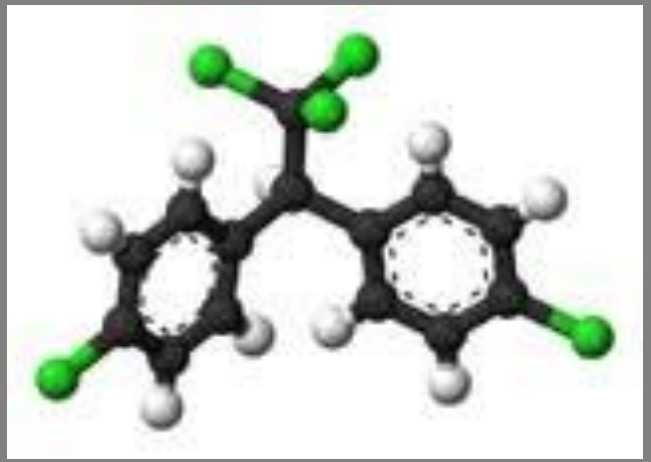
Paul H. Müller

Nobel Prize in Physiology or Medicine 1948

DDT

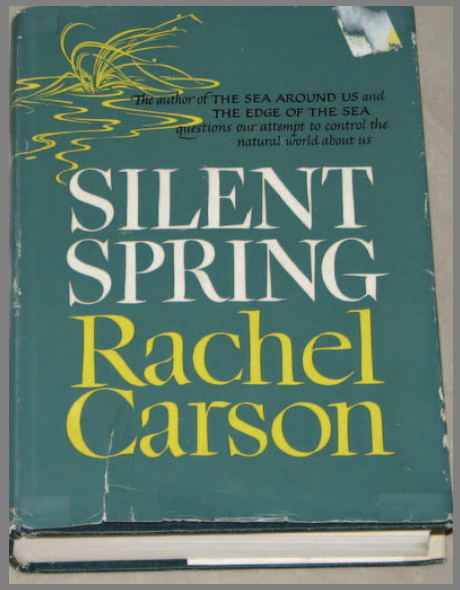
(The "mother" of Environmental Toxicology)





Dichloro-diphenyl-trichloro-ethane

"Silent Spring"



Rachel Carson
(1907-1964)

Silent spring raised awareness of the presence negative impact of DDT in the environment

Søren Jensen

1964 --- A Swedish researcher of Danish orign, Dr. Soren Jensen, was trying to study DDT levels in human blood when a mysterious group of chemical compounds kept recurring in his samples, interfering with his analyses. The compound was found in both wildlife an human samples from as early as 1935, before DDT was introduced. He finally identified the compound as a polychlorinated bisphenol or **PCB**

DDT and PCB

- Lipid- or fat soluble
- Persistent – resistant to degradation
- Bioaccumulating – concentration in the body increases over time
- Biomagnifying – concentration increases along the food chain. Top predators have the highest levels
- Reprotoxic, immunotoxic in wildlife
- Declining population – almost extinction in top predators (white tailed sea eagle, peregrine falcon, kestrel, otters, seals, whales, dolphins
- Human burdens high in Arctic populations

Save us!

Peregrine falcon

Kestrel

Dolphin

Seal

European otter

DDT ban Europe (EU): 1981

PCB ban Europe (EU): 1985

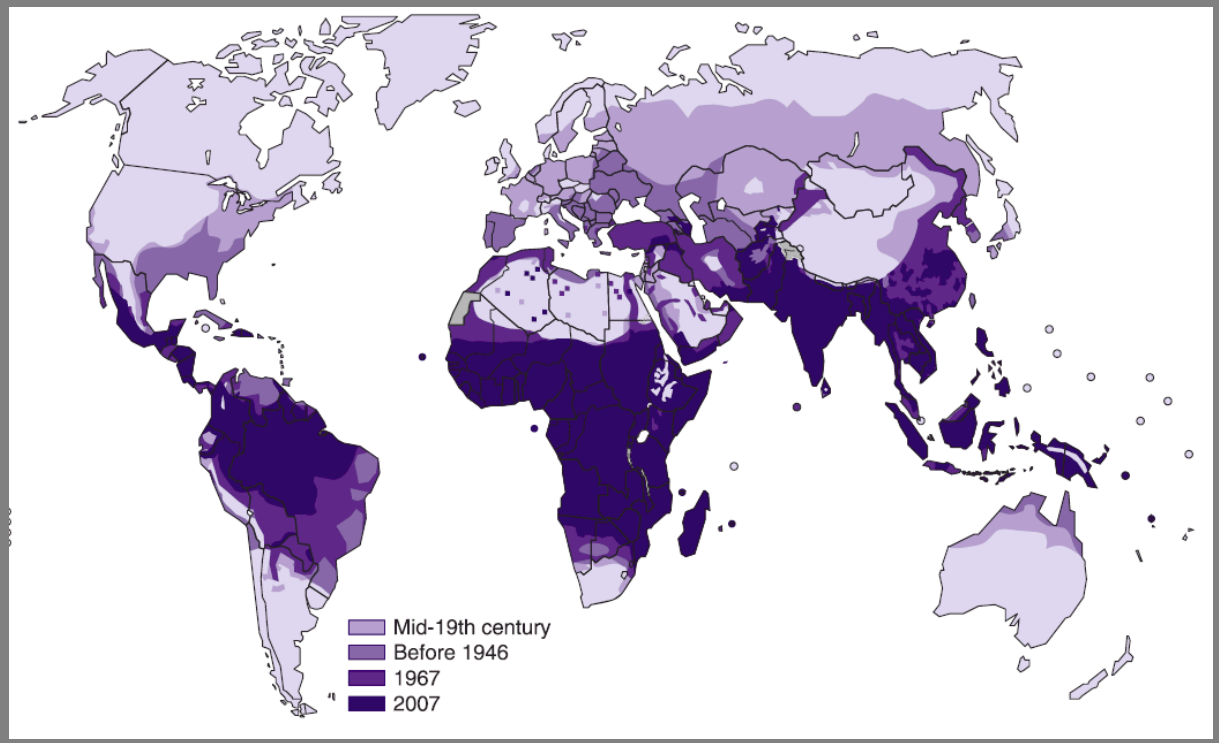
PCB, UNEP Stockholm Convention on POPs: 2001

DDT use today

Only permitted for malaria prophylaxis

(UNEP Stockholm Convention)

Indoor Residual Spraying (IRS)



DDT effects in humans

- Breast cancer
- Endomertrial cancer
- Male reproductive effects
- Testicular tumors
- Diabetes
- Infertility
- Neurodevelopmental effects
- Immune effects

DDT today

Cost/benefit analysis

DDT still the most effective tool to control malaria

DDT still made more good than bad for our lives and the environment

It opened our eyes!

Thank you!