

HARVARD UNIVERSITY

DEPARTMENT OF CHEMISTRY

The Discovery of the Structure of DNA

12 Oxford Street
Cambridge 38, Massachusetts, U.S.A.

Introduction

appt for presentation (Kenny played)
title

story incomplete: early history
one note esp the anecdote.

Descrip. of Structure
and Rep. Scheme

Imp. of DNA (Terminology. Hypoth.)
DNA formula comp.
DNA structure.

Slide

Rep. Scheme.

The diff. of x-ray crystallography - value of c foot guess.
- helical.

Historical account

- Pauling: ~~1926~~ 1927

- Chargaff: base ratios

- Wilkin & Franklin: x-ray data

- W. C.: base pairing & structure.

Watson - Biologist } ETC
Crick - Chemist }

History

Early x-ray work Astbury

Wilkin & Franklin

Watson - slide

α-helix

Pauling story

Cooper, Crick & Ward

- power of helix

- strategy of solving structure

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The visit to Oxford 1952? end 51?

discussion of King's Colours... 4 lines per letter point

Not metted. visit to Bookshop.

see schemes of Nat/Pow nets.

disturbances.

visit of Watkins, Franklin et al.

John Guthrie (Summer 51)

Gold the perfect form. Purple.

attack of flu later, like with take.

Guthrie's own scheme $A \begin{matrix} A \\ \vdots \\ I \end{matrix} B \begin{matrix} G \\ \vdots \\ C \end{matrix}$

replication mechanism.

(a) doubts because of size of ~~base~~ attraction.

~~Expts with UV~~

Visit of Chargaff to Camb.

Re 1:1 ratios. (now then reading the literature).

(Guthrie, Lhany)

expts with U.V.

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Walter announced about here - ratios
Wright date.

Kings Group Dec '52

Ros. concludes there no helical

history of helical idea (Stokes unpublished)

our conviction reasons for. "10" bases is a new
[List them per for model] second grandis

MRC mimeographed report
give our cell dimensions.

A, B form.

Parlings Paper : Briggs upstairs.

3 chem. Attachments + very picture.

Walter about H atom.

Wilkins visit our wants to U.
permission to Kricheldorf structure.

(4)

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Watson's early effort - discarding of base pairing

backbone in order (for proteins)

difficulties.

making of models of the bases

- literature data of Gulland and

our system or their size.

base pairing:
 - Franklin's data (Dorset)
 - like with like (Francis Brookhead their)

no. and direction of chains:

2 or 3?

(see Franklin)

↑↑ or ↓↓

either a screw.

either a base-pairing:

our model for base-pairing could be included.

Watson solution. (Griffiths. letter) (Wilkins letter)

backbone difficulties. 180° or 360°.

Building of accurate model - hard work 4 days.

fact-time nature of previous work

Franklin & me having J.V. in Paris.

Wilkins visit - their x-ray data - their letters.

Tell us Brookhead

publication

Franklin's visit Fisher '53

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Lennon

~~History~~

① Scientific discovery is teamwork. adv. of collaboration.

② value of preconceived ideas
plus rigorous thinking
plus advertisement

③ can persuade matters.

History

Walter "Boo" : death of Base-pairs.

Crick "Crick" : idea of replication.

"helix" : my Parity : - our fault in space of evidence.

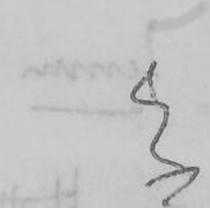
base-pairs : revealed but initially discarded.

base-pairs : is part of pub. opinion.

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Conn
Jim Watson
F.H.C.C.

London
Maurice Wilkins
Rosalind Franklin
(Gosling)
Stokes

Calif
L. Pauling

New York
E. Chargaff

John Griffiths

Peter Pauling }
Jerry Drenth }

Sir Lawrence Bragg,
(Cochran)

(Goldschmidt)