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ROTHAMSTED  
RESEARCH

## Report for 1982 - Part 1

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### Botany Department

**L. Fowden**

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## BOTANY DEPARTMENT

L. FOWDEN

### Staff

as at 30 September 1982

*Head of Department* §C. P. Whittingham, Ph.D.

*Senior Principal Scientific Officer*

†Gillian N. Thorne, Ph.D.

*Principal Scientific Officers*

\*A. J. Keys, Ph.D.

†D. W. Lawlor, Ph.D.

†G. F. J. Milford, B.Sc.

§Margaret E. Radley, Ph.D.

†P. J. Welbank, Ph.D.

*Senior Scientific Officers*

†I. F. Bird, Ph.D.

\*S. Gutteridge, Ph.D.

\*J. R. Lenton, Ph.D.

\*A. W. Wheeler, Ph.D.

†D. W. Wood, Ph.D.

*Higher Scientific Officers*

\*M. J. Cornelius

\*N. P. Hall, Ph.D.

\*M. A. J. Parry, M.Sc.

†T. O. Pocock, Ph.D.

†A. T. Young

*Scientific Officers*

\*A. C. Kendall, B.Sc.

†I. Pearman, B.Sc.

†K. Plumb

\*C. N. G. Schmidt, B.Sc.

*Assistant Scientific Officers*

\*N. E. J. Appleford

\*S. Burton

†S. P. Driscoll

†Hazel Gilmour

†A. C. Grace

†M. R. Keirle

\*Mrs Barbara N. Millard

†Valerie J. Mitchell

†Heather Pellant

\*Mrs Janice C. Turner

*Students*

§Jane B. E. Ainsworth

\*Frances A. Boyle, B.Sc.

§G. K. Dixon

§G. P. Holbrook, B.Sc.

§Helen M. Johnson

*Secretary*

†Mrs Anita J. Webb

\*To Biochemistry Department

†To Physiology and Environmental Physics Section

‡To Safety Officer Post from 1.12.82

§Retired or left at 30.9.1982

C. P. Whittingham, who had been Head of the Department since 1971, retired at the end of September. At that time, the Botany Department was dissolved, and the staff were assigned to new scientific groups. Those concerned with research on metabolic aspects of photosynthesis and photorespiration transferred to the Biochemistry Department and the remainder became members of a new Physiology and Environmental Physics Section (where they will be joined by a group of physicists at the beginning of January 1983).

Sir Daniel Hall appointed Winifred E. Brenchley as the first botanist at Rothamsted in 1906. She and her colleagues studied weed ecology on the Classical Experiments and elsewhere in Britain, investigated factors affecting the production and germination of weed seeds, and did botanical analyses of the hay from Park Grass. A study of inorganic plant poisons led to the development of nutrient solution systems, and the identification of boron as an essential micronutrient; the roles of other micronutrients were examined extensively. Observations of grain growth made on wheat from Broadbalk in 1907–8 established a pattern to be followed by successive generations of crop physiologists.

Separate observations on the field experiments were begun in 1924 by a physiologist attached to the Field Experiments Section. D. J. Watson was appointed to this post in 1930 and pioneered the application of growth analysis to crop productivity. When Brenchley retired in 1948, six 'botanists' and four 'physiologists' were combined under

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D. J. Watson in a single Botany Department. During the next 23 years under Watson's leadership, the staff increased to 27, and additional research programmes were initiated in the fields of water relations, plant growth regulators and sugar-beet physiology.

When C. P. Whittingham joined Rothamsted from Imperial College London, he was accompanied by members of the ARC Unit of Plant Physiology, and the research was further extended to include studies on carbon metabolism in relation to photosynthesis and photorespiration. The trend away from general botanical to physiological and biochemical types of research was accompanied by the gradual transfer of work on weed biology to the Weed Research Organization, a process completed in 1980 with the retirement of Joan M. Thurston.

Accounts of research done by staff in 1982 appear in the following sections of this *Report*: whole crop physiology and crop productivity—Multidisciplinary; sugar-beet physiology—Broom's Barn; water stress physiology—Physics; plant metabolism—Biochemistry.