

University of Sheffield Library. *Special Collections and Archives*

Ref: Special Collection

Title: Sorby Research Institute Collection

Scope: A small collection of printed documents relating to the Sorby Research Institute at the University of Sheffield and its experimental work during World War II, and including some other works relating to those principally involved. Also includes visitors' book for 1941-44.

Dates: 1939-1979

Extent: 19 volumes

Administrative / biographical history:

The principal figures associated with the Sorby Research Institute were Dr Kenneth Mellanby, Sorby Research Fellow of the Royal Society in the Zoology Department at the University of Sheffield (the Fellowship was itself named after Dr H.C. Sorby, FRS, an eminent scientist who played a prominent role in both Firth College and University College, forerunners of the University of Sheffield); Dr Hans Krebs, Lecturer in Biochemistry; and Walter Bartley, technician and assistant to Mellanby. Mellanby later became a distinguished figure in the fields of biology and ecology; Krebs became Professor of Biochemistry at Sheffield in 1945 before moving in 1954 to Oxford as Whitley Professor of Biochemistry, and while at Sheffield was in 1953 awarded a Nobel Prize for his discovery of the tricarboxylic acid cycle ('the citric acid cycle'); Bartley, who personally subjected himself to the experiments carried out in the Institute, and who had arrived in Sheffield on the first day of its Blitz, 12th December 1940, later became Professor of Biochemistry at Sheffield in 1963.

At the outbreak of war in September 1939, following consultations with the Ministry of Health, the Institute embarked on a series of experiments intended to benefit humanity, making use of volunteer conscientious objectors. Following Mellanby's initial interest in the problem of head lice it was suggested that the endemic parasitic skin disease scabies would be an important area of research, with the aims of discovering how it was transmitted and how it could be treated most effectively. Initially a team of 12 volunteers was formed, and the Institute acquired a large suburban house, "Fairholme", 18 Oakholme Road, Broomhill, which was adapted for the purpose. The scabies work, apart from its benefits to the population generally, also led to extensive observation and treatment of military personnel in a special hospital which Mellanby set up, and to the instruction of army medical officers at the Institute.

In the Spring of 1942 an experiment to establish the level of water intake necessary to maintain health, which had obvious applications to shipwreck survival, was carried out. Following this came the first nutritional experiment. In consultation with the Government's official Food Policy Committee work was done on the dietary effects of high extraction (85%) wheatmeal as compared with 75% extraction flour on digestibility and calcium absorption. This was of crucial concern because wheat was a staple of the British diet, but, as much had to be imported, the food supply was under serious threat by U-boat action. It was

shown that the higher extraction flour made a valuable contribution to the food supply, and the 'national wheatmeal loaf' replaced white bread in the national diet.

The Medical Research Council's Accessory Food Factors Committee then asked for information on human vitamin requirements. An investigation was set up by the MRC's Vitamin A Sub-Committee. 23 men and women volunteered to live on a diet deficient in only Vitamin A so that the effects could be observed and a treatment level for deficiency established. Because signs of deficiency took a long time to develop this experiment lasted considerably longer than expected, from July 1942 to October 1944, but eventually the aims of the experiment were achieved.

In late 1943 Mellanby left to join the army as a specialist in biological research, and Dr Hans Krebs took over responsibility for managing the volunteers. A similar experiment on Vitamin C followed, set up by the MRC's Vitamin C Sub-Committee, and lasting from October 1944 to February 1946. Signs of Vitamin C deprivation appeared, in the form of the serious disease scurvy, much more quickly than in the Vitamin A work, and a safe daily intake was then established. The nutritional work of the Institute resulted in the publication of two MRC Special Reports.

The work of the Sorby Research Institute continued until early in 1946. Meanwhile, in 1944, an MRC Research Unit was established in Krebs' Department under his direction and called the 'Unit for Research in Cell Metabolism', in which Walter Bartley also participated. This continued in being until 1967, but relocated to Oxford in 1954 with Krebs, together with most of his team, when he was appointed Whitley Professor of Biochemistry there.

Related collections: Eggleston Notebooks; Krebs Papers, Sorby Collection

Source: Bartley Bequest (1994) and items in stock

Subjects: Medical research - Great Britain; Nutrition - Research - Great Britain; Scurvy; Vitamin A deficiency; Vitamin C deficiency

Names: University of Sheffield - Sorby Research Institute; University of Sheffield - Department of Biochemistry - Medical Research Council Unit for Research in Cell Metabolism; Mellanby, Kenneth, 1908- ; Krebs, Sir, Hans Adolf, 1900-1981; Bartley, Walter, 1916-1994

Finding aids: Listed in the finding aid and published material is also on the Library catalogue

List of publications in the Sorby Research Institute Collection

Kenneth Mellanby wrote a manual on scabies based on the work at the Sorby Research Institute:

SORBY COLLECTION 1

MELLANBY, KENNETH

Scabies. (Oxford War Manuals)

London, Oxford University Press, 1943 81p. (200376897)

Inscribed: To W.C. Bartley with best wishes and many thanks, Kenneth Mellanby
18/2/43

Bartley Bequest

Kenneth Mellanby wrote a memoir of his time at the Sorby Research Institute:

SORBY COLLECTION 2

MELLANBY, KENNETH

Human guinea pigs.

London, Gollancz, 1945. 96p. (1 196192 01)

E. Black Bequest

The nutritional work of the Institute resulted in two Medical Research Council reports:

SORBY COLLECTION 3

HUME, E.M. and H.A. KREBS

Vitamin A requirement of human adults: an experimental study of Vitamin A deprivation in man. A report of the Vitamin A Sub-committee of the Accessory Food Factors Committee, compiled by E.M. Hume and H.A. Krebs. (MRC Special Report Series no. 264)

London, H.M.S.O., 1949. 145p, illus.

Signed on cover : W. Bartley

Bartley Bequest

SORBY COLLECTION 4

BARTLEY, W., KREBS, H.A. and O'BRIEN, J.R.P.

Vitamin C requirement of human adults. A report by the Vitamin C Subcommittee of the Accessory Food Factors Committee, and A.E. Barnes, W. Bartley, I.M. Frankau, G.A. Higgins, J. Pemberton, G.L. Roberts and H.R. Vickers; compiled by W. Bartley, H.A. Krebs and J.R.P. O'Brien. (MRC Special Report Series no. 280)

London, H.M.S.O., 1953. 179p, illus.

Signed on cover: W Bartley

Bartley Bequest

Hans Krebs included a chapter on the work of the Institute in his book:

SORBY COLLECTION 5

KREBS, HANS

Reminiscences and reflections. In collaboration with Anne Martin.

Oxford, Clarendon Press, 1981. 298p, illus. (200034905)

Walter Bartley preserved offprints of his published papers 1942 - 1974, which include 4 papers relating to the work on scabies at the Sorby Research Institute, as well as later work in connection with the MRC Unit for Research in Cell Metabolism at both Sheffield and Oxford, and at the Department of Biochemistry, University of Sheffield. (4 volumes).

SORBY COLLECTION 6

(i) Reprints up to 1960

(ii) Reprints from 1961

(iii) Reprints from 1965

(iv) Reprints from 1972

Bartley Bequest

Other volumes relevant to the work of Mellanby, Krebs and Bartley:

SORBY COLLECTION 7

ROCHE PRODUCTS LTD.

Vitamins in medical practice: a survey of present-day knowledge. 3rd ed.

Welwyn Garden City, Roche Products Ltd., 1949. 64p, illus.

Bartley Bequest

SORBY COLLECTION 8

BARTLEY, W., BIRT, L.M. and BANKS, P.

The biochemistry of the tissues.

London, Wiley, 1968. 375p, illus.

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 9

[German language edition of “The biochemistry of the tissues”]

Biochemie: eine Einführung für Mediziner

Weinheim / Bergstrasse, Vlg.Chemie GmbH, 1970. 319p, illus

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 10

[Italian language edition of “The biochemistry of the tissues”]

Biochimica umana.

Firenze, Uses Edizioni Scientifiche S.p.A., 1979. 503p, illus.

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 11

[Japanese language edition of “The biochemistry of the tissues”]

1972. 336, 21p, illus.

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 12

[Malaysian language edition of “The biochemistry of the tissues”]

Biokimia tisu.

Kuala Lumpur, Dewan Bahasa dan Pustaka, 1978. 447p, illus

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 13

BARTLEY, W, KORNBERG, H.L. and QUAYLE, J.R.

Essays in cell metabolism: Hans Krebs dedicatory volume.

London, Wiley-Interscience, 1970. 290p, illus.

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 14

[Another copy of the above]

Signed: W. Bartley

Bartley Bequest

SORBY COLLECTION 15

Visitors' Book, 'Visitors to the Sorby Institute, Sheffield, 1941-1944'. Includes signatures from 23rd October 1941 to 24th October 1944. 22cm x 17cm. 32 p.

SORBY COLLECTION 16

Draft copy of report on "Experimental Vitamin A Deficiency in Human Volunteers and Vitamin A requirements of Human Adults". Written by Professor Krebs and Miss E.M. Hume, and dated 15 April 1946. 178 p. Ts. & ms. (see Sorby Collection 3, above)

SORBY COLLECTION 17

Photocopy of article written by Professor Kenneth Mellanby "Scabies research during the 1939-45 war", in MRC News [n.d.]. Printed

Additional material

Documentation of the work of Professor Sir Hans Krebs is included in the Krebs Papers held at the University of Sheffield Library, including an incomplete set of the "Sorby Newsletter" issued at the end of the war to help members of the Sorby Research Institute team to keep in touch.

No contemporary photograph of "Fairholme", 18 Oakholme Road, Sheffield has so far been traced but recent photographs of the house (1998) are kept in the University Library Photograph Collection.