gland tissue[3] and erythrocytes[4] from cystic fibrosis patients, Na^+–K^+ ATPase activity has been found to be normal. However a decrease in the ethacrynic acid-sensitive efflux[5,6], a Na^+ exchange mechanism[5], has been reported in cystic fibrosis erythrocytes[6,7]. These findings suggest that there is no fundamental abnormality in the Na^+–K^+ ATPase enzyme in the disease, but there may be a defect in an ethacrynic acid-sensitive transport step. Therefore in order to obtain a better understanding of the cation transport defect one should measure the binding of labelled ethacrynic-acid rather than ouabain.

It is possible, however, that there is no basic abnormality in the mechanism of Na^+ transport in cystic fibrosis but in the action of agents regulating this process[8,9]. Membrane transport of this cation is controlled by hormones and cyclic AMP in a tissue specific manner[10]. Failure of a Na^+ transporting system in exocrine glands to respond to a specific hormone or cyclic AMP could explain why the defect is confined to these organs. Isolated model systems like fibroblasts and erythrocytes might not therefore show up this defect.

Yours faithfully

M. J. DUFFY

Biochemistry Department,
University of Dublin,
Trinity College,
Dublin 2

Drs Quissell and Pitot respond:

Due to the pathophysiology of cystic fibrosis, conclusions derived from data obtained from intact patients with the disease or from biopsy material obtained from CF patients must be carefully scrutinized. Several factors, such as anoxia, infection, malabsorption, liver and pulmonary involvement, and the nutritional and hormonal status of the patient complicate the interpretation of these data.

The Na^+ transport defect could be closely related to the genetic defect or the Na^+ transport defect could be secondary. The small salivary glands and the eccrine sweat glands are affected by the electrolyte defect in cystic fibrosis[11] but the submaxillary and parotid glands secrete normal levels of sodium[2,12].

The decrease in the ethacrynic-acid-sensitive efflux observed in cystic fibrosis erythrocytes[6] is difficult to interpret[13]. Lapey and Gardner[7] observed a normal sodium efflux in heterozygotes and in younger females with cystic fibrosis. The mechanism of action of ethacrynic acid on the overall membrane transport process is not known. In fact, the inhibitory process may involve one or several intracellular metabolic events rather than events on the membrane *per se*[14,15]. Ethacrynic acid does not seem to bind specifically to the membrane but to all cellular fractions[16]. Cystic fibrosis patients seem to have normal kidney function except for a lower metabolic clearance rate and a higher plasma aldosterone level which is probably due to the excessive loss of sodium in the sweat and a subsequent decrease in the intravascular volume[17].

If an alteration in the hormonal response in cystic fibrosis exocrine tissue is observed, the alteration could be intimately related to the primary defect in the disease but the alteration could be secondary to its pathophysiology. Careful evaluation will be required but the results should be very interesting.

Pediatrics Department,
University of Missouri
School of Medicine,
Columbia, Missouri 65201
and
McArdle Laboratory for
Cancer Research,
University of Wisconsin,
Madison, Wisconsin 53706

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obituary

Sir Charles Dodds

SIR CHARLES DODDS, Bt., biochemist and physician, who died on December 16, 1973, was at the time of his retirement in 1965 the senior professor in the University of London, having been elected at the age of 25 to the newly created Courtauld Professorship of Biochemistry at the Middlesex Hospital Medical School. Two years later, when the Courtauld Institute of Biochemistry was built he was its first Director, an appointment that he was to occupy with the highest distinction for 38 years. His originally tiny staff of three graduates expanded steadily so that due to his stimulating and inspiring leadership the Institute has acquired a fine reputation for both teaching and research.

Edward Charles Dodds was born on October 13, 1899, brought up in Darlington and moved with his parents to London, where he was educated at Harrow County School and the Middlesex Hospital Medical School, supporting himself by various scholarships and later by tutorials. He was entirely a 'Middlesex man', who never seemed to wish to work elsewhere. Very early he showed his life-long interest in hormones, developing a method which proved useful for preparing insulin for the Hospital.

When they were both 25, he and F. Dickens wrote *Chemical and Physiological Properties of the Internal Secretions*. Dodds meanwhile was in charge of the Chemical Pathology and pioneered in this country the colorimetric methods of analysis which Folin had recently introduced in the United States. He was called in during the illness of King George V and, then aged 29, received the MVO. With George Beaumont he produced *Recent Advances in Medicine*

which ran to 14 editions. In more recent years, he was one of the first to introduce automation into clinical biochemical analysis in this country.

Dodds own research reached its highest point in the discovery of the highly potent artificial oestrogenic hormone, diethyl stilboestrol and its relatives. With Wilfrid Lawson, he explored the weak activity which they had detected in a range of simple non-steroidal compounds, until they found a highly active by-product arising in the demethylation of the simple phenolic ether anethole. They discovered the structure and synthesis of the compound, in work with Sir Robert Robinson, in 1938. Stilboestrol was even more active than the natural hormone, could be manufactured in quantity, and was effective when given orally. In addition to its value in gynaecology, it proved, following the lead of Charles Huggins, to be the first oral drug to be able to control a form of cancer—carcinoma of the prostate—even when the disease was disseminated.

The honours and decorations conferred on Dodds over the years occupy a whole column of Who's Who, but among these were his Knighthood in 1954 and Baronetcy 1964. He was elected FRSE. 1941; FRS 1942 (Vice-President 1957-9); FRCP 1933 (Harveian Librarian later) and President of the Royal College of Physicians in 1962—unique for a professor of biochemistry to be so honoured. He held honorary degrees from universities all over the world, was widely travelled and had lectured—though this did not come easily to him—in many countries. He succeeded Lord Horder as Chairman of the Scientific Committee of the Cancer Research Campaign; an excellent chairman, he was in constant demand in this capacity, serving on numerous Government and other scientific committees. His medical school owes to him the revolutionary reorganisation of the teaching of biochemistry, and of chemistry, which he insisted should be integrated subject; he built up a devoted staff of gifted teachers.

Though somewhat shy by nature, he was never aloof with his colleagues, always ready to discuss their problems, tempering his shrewd advice with a nice touch of humour. It delighted him when he became Master of the Society of Apothecaries in 1947–9, and nothing pleased him better than entertaining his many friends to good food and good wine, on which he was something of an authority.

His marriage in 1923 to Constance Elizabeth Jordan of Darlington was a happy one and he never seemed to his close friends quite to recover from her death in 1969. Their only son Ralph succeeds to the baronetcy.

Announcements

Corrigendum

In the article "Heavy ion transfer reactions in nuclear astrophysical processes" by T. W. Conlon (*Nature*, **247**, 268; 1974) the third paragraph from the end should read as follows. "A study of the α-transfer reaction $^{12}C(^{16}O,^{20}Ne)^{8}Be$ at energies in the region of the Coulomb barrier has been made possible by the development of a particle identification system based on position-sensitive counters mounted in the focal plane of a Buechner spectrograph. Preliminary results indicate that significant amounts of ^{20}Ne are produced with respect to ^{24}Mg, which results from the principal compound nucleus channel (Table 2)."

In the same article, the following corrections should have been made; para. 1, line 12 should read "corresponds to the transfer of an α particle, . . ."; para. 10, line 5, "available for later evolutionary . . ." and the last column in Table 1 should be "Q optimum (MeV) corresponding to (E_{min} to E_{max})".

International meetings

May 14, **Our Environment—Museum or Habitat?** (Lisa Strange, The Ship and Boatbuilders' National Federation, 31 Great Queen Street, Kingsway, London WC2B 5AD)

May 15, **The Possible Role of Anti-Tumour Immunity in Radiotherapy** (The General Secretary, British Institute of Radiology, 32 Welbeck Street, London W1M 7PG)

May 16, **Friction, Wear and Lubrication** (The Meetings Officer, The Institute of Physics, 47 Belgrave Square, London SW1X 8QX)

May 19–22, **Second International Banff Conference: Man and His Environment** (Miss E. M. Buchanan, Conference Supervisor, Division of Continuing Education, The University of Calgary, Calgary, Alberta T2N 1N4)

May 20–23, **The Impact of Offshore Oil Operations** (Mrs Jill de Wardener, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR)

May 20–23, **5th National Convention of the Royal Australian Chemical Institute** (Professor B. J. Ralph, School of Biological Technology, University of New South Wales, P.O. Box 1, Kensington N.S.W. 2033, Australia)

May 20–24, **2nd International Symposium on Biotelemetry** (ETHZ Turnen and Sport, Labor. für Biomechanik, Plattenstrasse 26, CH-8032 Zürich, Switzerland)

May 20–25, **7th World Congress on Occupational Safety and Health** (World Congress Secretary, Ansley House, Dublin 4, Ireland)

May 21–23, **Rubber Processing 1974** (Martin J. Quinlan, Publications Officer, The Institution of the Rubber Industry, 4 Kensington Palace Gardens, London W8 4QR)

May 21–24, **The Science and Technology of Powders and Fine Particle Systems** (Institute for Fine Particles Research, Summer School, 1974, Laurentian University, Sudbury, Ontario, Canada P3E 2C6)

May 22–24, **Workshop/Symposium on Compliance with Therapeutic Regimens** (David L. Sackett, Room 3H2, McMaster University Medical Centre, 1200 Main Street West, Hamilton, Ontario, Canada L8S 4J9)

May 23, **Structure and Function of Intracellular Junctions** (R. C. Hughes, National Institute for Medical Research, Mill Hill, London NW7 1AA)

May 24, **The Future of the Polytechnics** (The Secretary and Registrar, The Institute of Mathematics and its Applications, Maitland House, Warrior Square, Southend-on-Sea, Essex SS1 2JY, UK)

May 29–31, **28th Annual Symposium on Frequency Control** (Commander, US Army Electronics Command, Attention: AMSEL-TL-MF, (J. R. Vig), Fort Monmouth, New Jersey 07703)

May 29–31, **26th Annual Brookhaven Symposium in Biology: Processing of RNA** (John J. Dunn, Biology Department, Brookhaven National Laboratory, Upton, New York 11973)

May 29–June 1, **Electronic Properties of Oxides: Applications and Science** (Professor R. W. Vest, School of Materials Engineering, Purdue University, West Lafayatte, Indiana 47907)

May 29–June 2, **5th International Congress of Cytology** (Alexander Meisels, Secretary General, 5th International Congress of Cytology, 1050, Chemin Ste. Foy, Quebec 6, PQ, Canada)

May 31–June 1, **International Symposium on Jaundice** (Gordon Awade, Executive Director, The Canadian Hepatic Foundation, 65 Queen Street West, Toronto, Ontario, Canada)