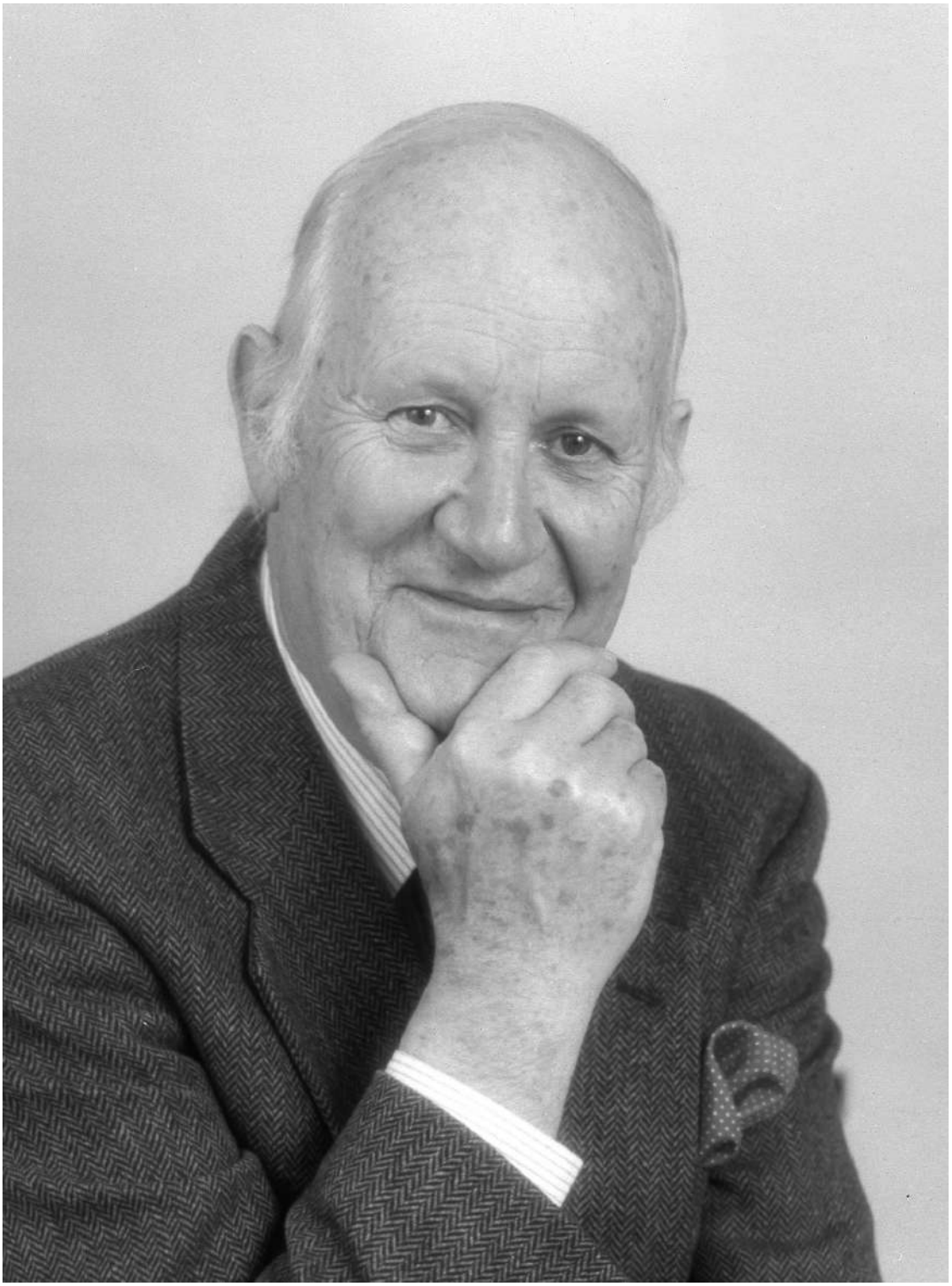
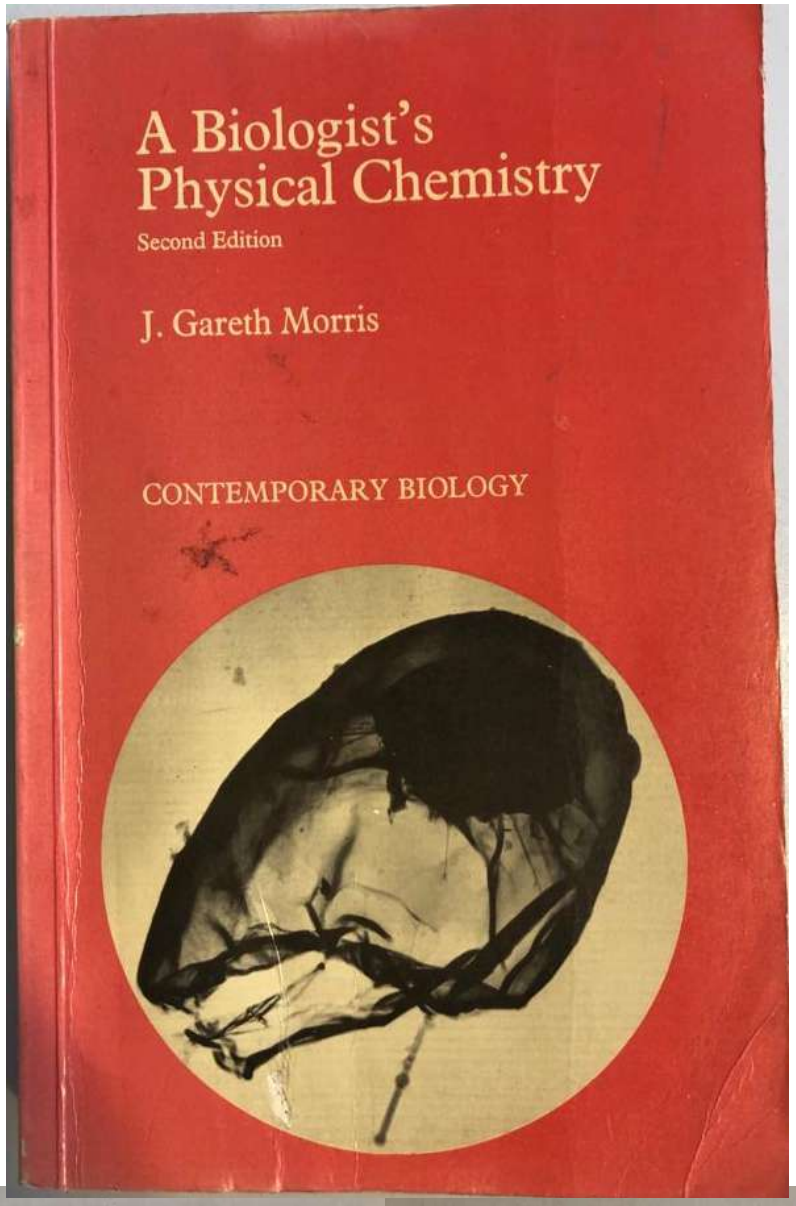




Foreword to the First Edition

Until fairly recently, the study of biology in British schools and Universities was characterized by two tacit assumptions. In the first place, it was believed that biological subjects are, in general, more descriptive than are their cousins of the physical (or "exact") sciences; scientifically-inclined pupils who, through lack of mathematical ability, would be debarred from the study of physics and chemistry might thus still settle for the anecdotal pursuit of biology. Secondly, it was held that the amount of detailed information that a student needed to acquire before he could describe himself as a biologist was so great that, possibly even before he came to University, he would do well to specialize in the study of either animals or plants. Even in the late 1960's, the great majority of biology graduates emerge from British Universities with specialist degrees in botany or zoology.

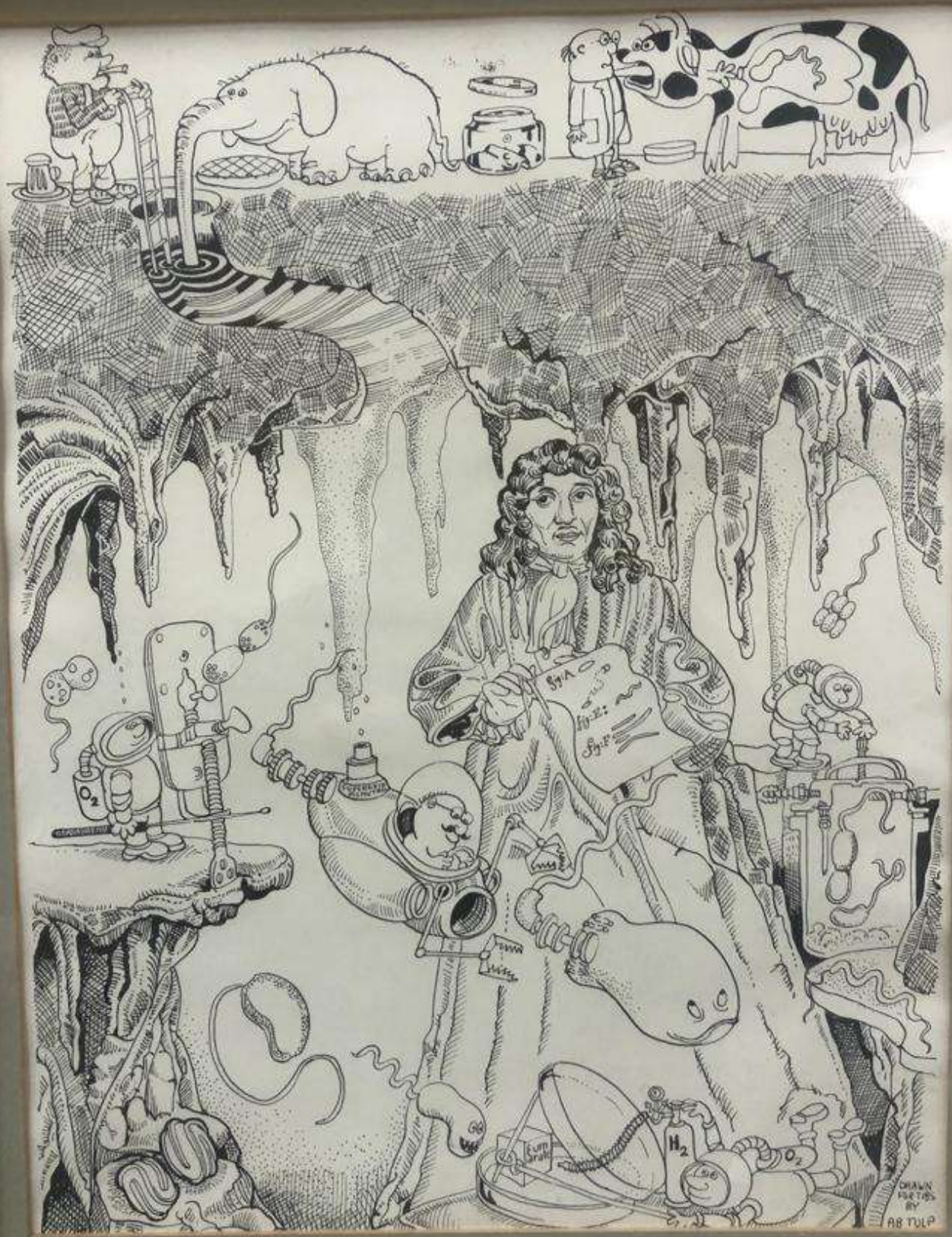
The revolutionary advances in biological knowledge, resulting principally from the researches of biologists working at the cellular and subcellular levels of organization, have shown both assumptions to be untenable. It is now conceded that one of the most important aims of biology is the description of life processes in physical and chemical terms: such a description can only be achieved by biologists thoroughly familiar with the principles of the physical sciences. It is also realized that the vertical divisions of biology into "Kingdoms", such as those of animals and plants, are both inadequate and misleading, and that such divisions obscure the underlying unity of the events which characterize the behaviour of living matter. It has become clear that the education of biologists must include both the molecular and organismic levels of enquiry. In consequence, Universities are instituting more-or-less loosely federated Schools of Biology, which offer first degrees in biology rather than in biological specialisms; due largely to the enlightened sponsorship of the Nuffield Foundation, the teaching of biology in schools is being similarly reorganized.

However, this desirable integration of biological specialisms in the

schools and in the Universities may also have rather undesirable but inevitable consequences. Owing to difficulties of staffing, of time-tabling (and, of course, of inclination on the students' part), the pre-University education of students entering Schools of Biology may be gravely deficient in mathematics, and may also lack adequate preparation in physics and chemistry. Yet it is impossible, in a three-year degree course leading to a B.Sc. in biology, to allot sufficient time to pursue in depth these essential but non-biological topics. The provision of brief but intensive "crash courses" in physical chemistry, taught by physical chemists, often produces results opposite to those intended: such courses may frighten students, by their tendency towards "rigorous" (by which is usually meant, mathematical) treatment of the subject, and may bore them, by their lack of apparent relevance to biology. It may thus be incumbent upon the staff of a School of Biology to remedy the deficiencies of students' knowledge in these indispensable subjects in a manner which maintains (or even arouses) the students' interest, for, without understanding the basic concepts of physical chemistry as they apply to living systems, students cannot hope to progress beyond the purely anecdotal description of biological events.

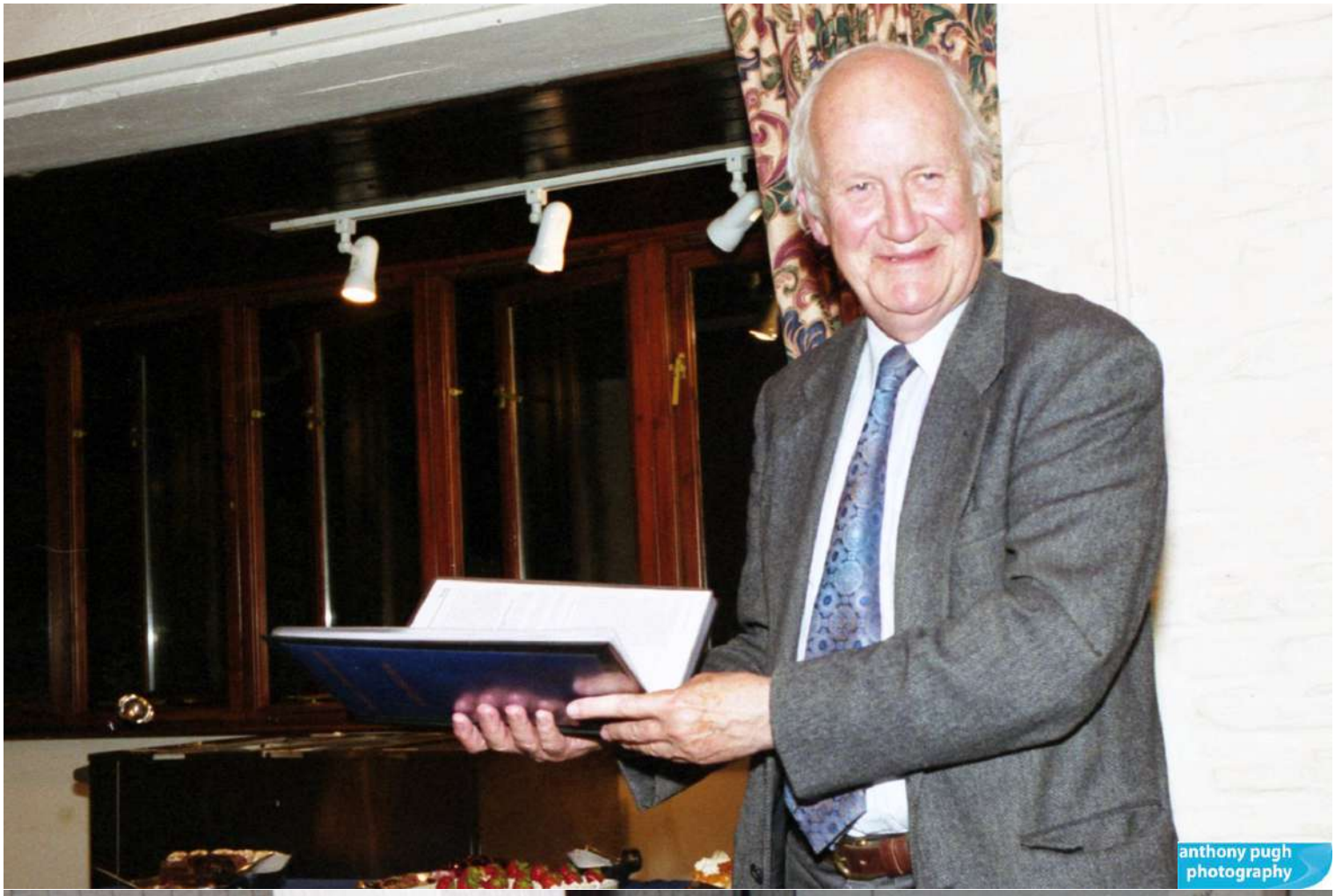
The present book is intended to help students to understand those parts of physical chemistry which, though of immediate relevance to biology, are often also the most poorly understood. Dr. Morris has ensured, by his erudite and often witty treatment, that interest is sustained: his book may be read for pleasure as well as for profit. Numerous biological examples are cited and the solution of specimen problems is illustrated in detail. By working out the questions given at the end of each Chapter, students will acquire confidence that quantitative concepts can be used even without advanced mathematical knowledge; by using such concepts, students will also learn to understand them. I warmly commend this book and believe that, in writing it, Dr. Morris has rendered a real service both to teachers and students of biology.

H. L. KORNBERG



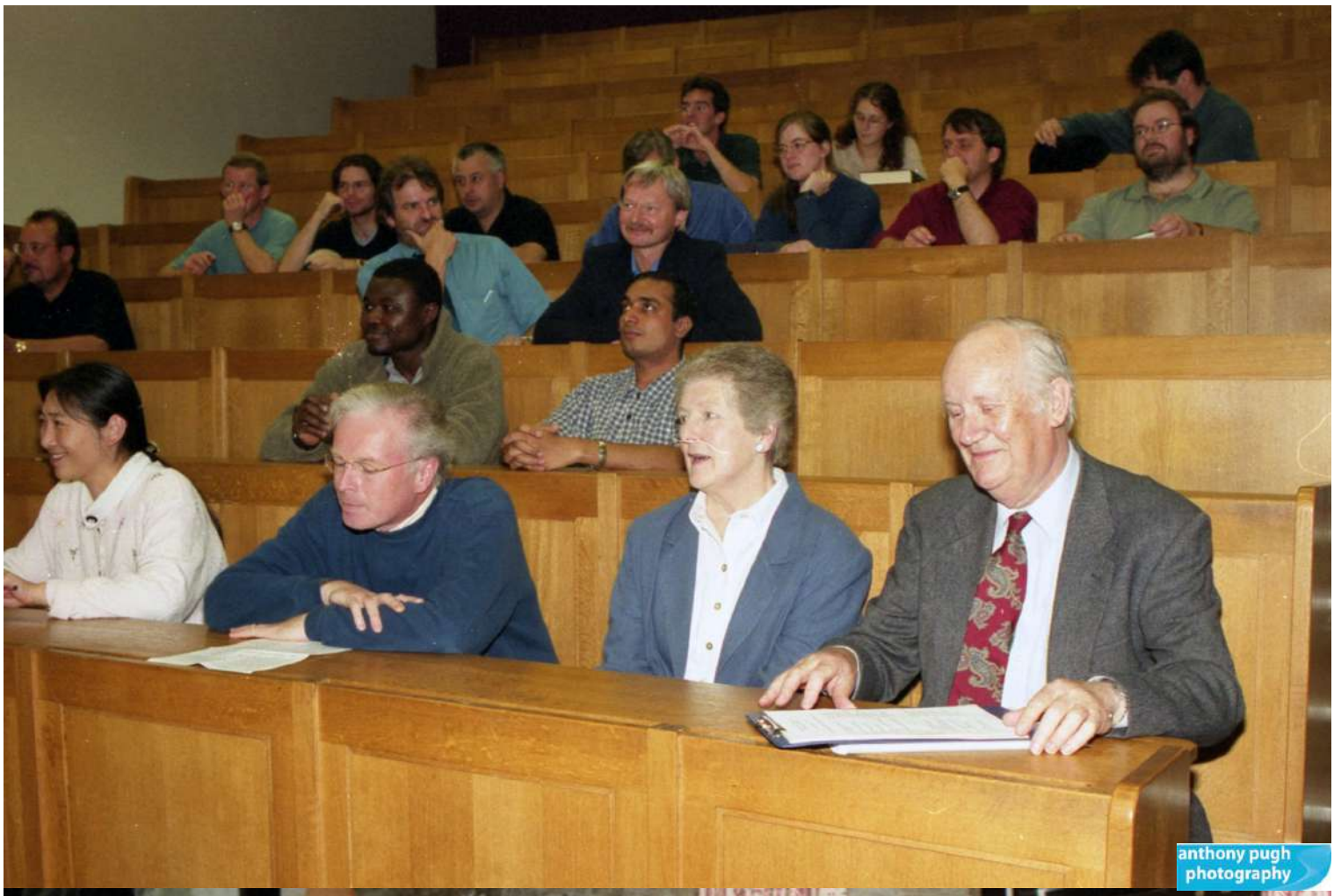
THE ANAEROBES ARE HERE

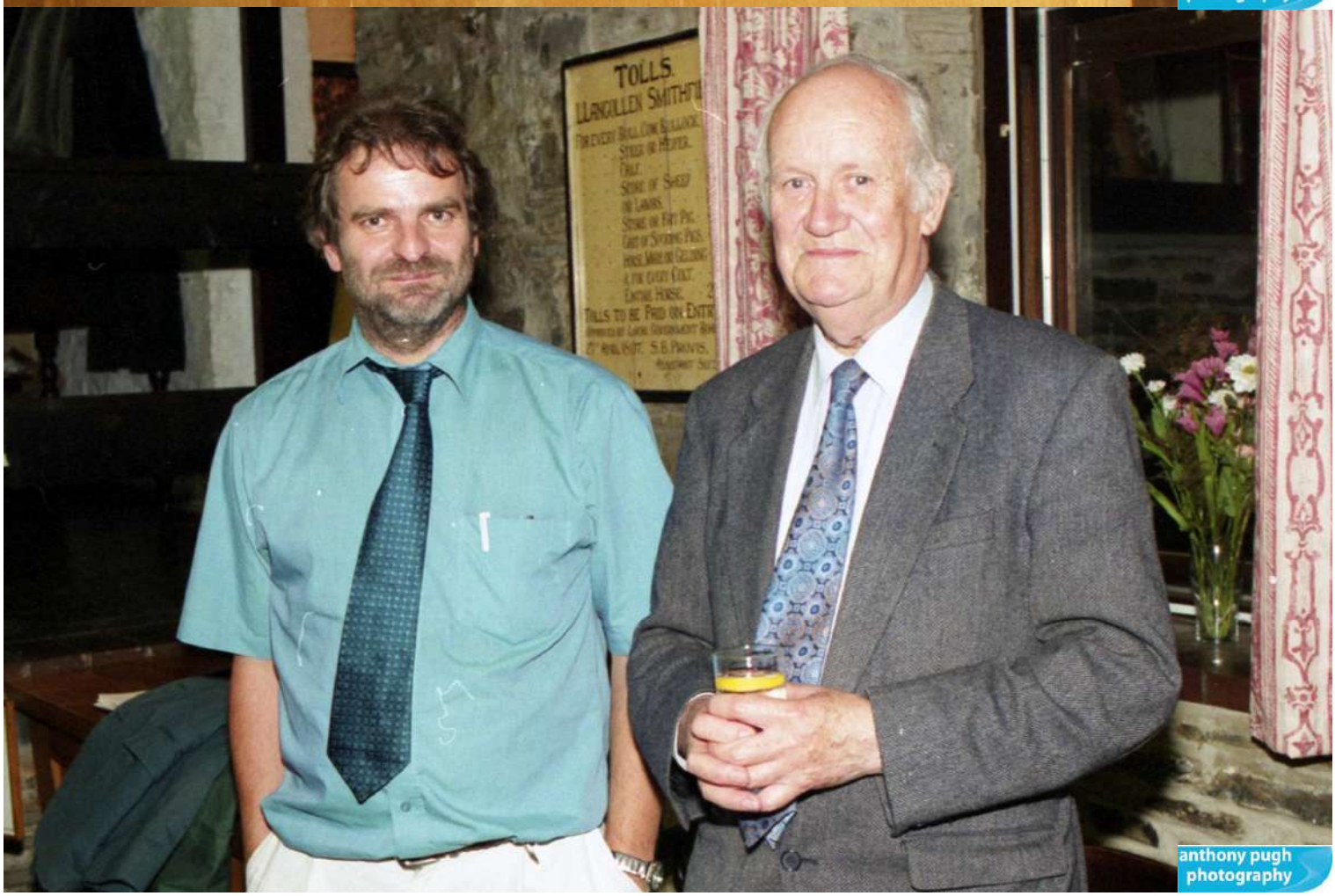
Original Drawing by A.B. TULP (Amsterdam) for:
"Obligately Anaerobic Bacteria" by J.G. Morris
Trends in Biochemical Sciences, 2, 81-83 (1977).



Gareth Morris and colleagues/friends at the dinner organized to celebrate his election as a Fellow of the Royal Society (1988).

Gareth Morris being congratulated on his election as a Fellow of the Royal Society by fellow Aberystwyth microbiologists John Hedger and Douglas Kell(1988).





Gareth Morris sat next to his wife Mary (upper) and with his former PhD student Prof. Nigel Minton (Nottingham University)

Clarke. Life of a Microbial Biochemist: Professor Patricia H. Clarke FRS in conversation with Professor J. Gareth Morris FRS, 10 May 1994.

Film & Sound Online > Description > Collections > Biochemical Society Collection > Clarke. Life of a Microbial Biochemist: Professor Patricia H. Clarke FRS in Conversation with Professor J. Gareth Morris FRS, 10 May 1994 (Currently available via subscription from https://alexanderstreet.com/

Gareth Morris with David Lloyd (Cardiff; L), Bob Lovitt (Swansea, postdoc alumnus of Morris lab; R) at the 2010 All-Wales (formerly Gregynog) Microbiology meeting. ©GWG

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The family wish to acknowledge with gratitude all expressions of sympathy and kindness extended to them in their bereavement.

You are warmly invited to join them for light refreshments after the service at
Starling Cloud, Aberystwyth SY23 1PD.

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Donations will be gratefully accepted towards
Oxfam
c/o D J Evans Funeral Directors.

DJ Evans Funeral Directors/Cyfarwyddwyr Angladdau,
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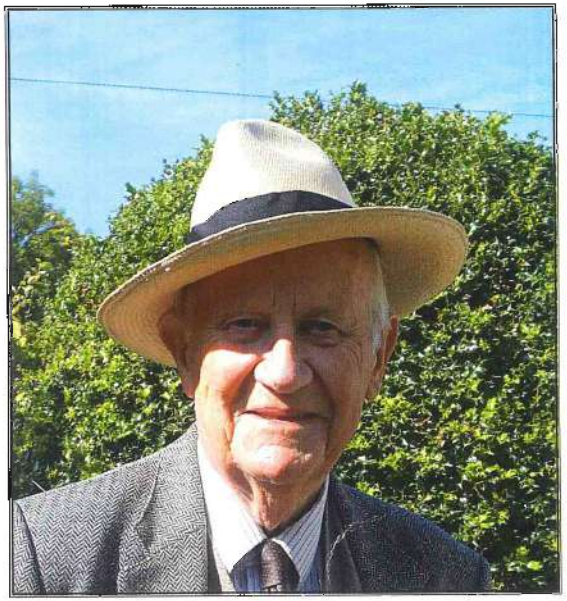
In Loving Memory

of



Professor J Gareth Morris CBE DPhil FRS

Devoted husband of the late Mary and a beloved father, grandfather and great-grandfather.

Passed away on Sunday, 10th December 2023
aged 91 years.

Aberystwyth Crematorium
Friday, 29th December 2023 at 1pm.