

## The Founding of the Society: Early Developments 1911–1944

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### 2.1 Formation of the Biochemical Club

The events outlined in Chapter 1 which occurred in the first decade of this century made it clear that British biochemists needed a separate forum where they could develop their subject on a national level. The general criteria necessary for establishing a new discipline, summarized at the beginning of Chapter 1, were clearly already achieved.

The time was thus ripe for the formation of a Society devoted to the furtherance of Biochemistry and, on 16 January 1911, J. A. Gardner (Fig. 2.1) and R. H. A. Plimmer (Fig. 1.2), after preliminary discussions with close colleagues, sent out invitations to fifty persons likely to attend a meeting to be held at the Institute of Physiology, UCL at 2.30 p.m. on Saturday, 21 January 1911, to consider the formation of a Biochemical Society. Plimmer was evidently stung into action by an article in the press describing a new science, Biochemistry, which was making rapid progress on the Continent but was apparently unknown in Britain. The invitation, written on a postcard, read

“Numerous suggestions having been made that a Biochemical Society should be formed in the Country, we shall be glad if you could make it convenient to attend a meeting at the Institute of Physiology, University College London, on Saturday 21st January at 2.30 p.m. to discuss the question.”

Today five days would seem very short notice for a meeting — the postcard might even have not arrived in time — but perhaps the diaries of senior biochemists did not fill up quite so quickly in 1911 as they do in 1986. It is also interesting that Saturday afternoon was then considered an acceptable time for a meeting. In fact thirty-two attended the meeting and a further fourteen sent encouraging replies.



**Fig. 2.1.** J. A. Gardner. Founder member of the Biochemical Society. Honorary Treasurer, 1913–1943.

In the words of R. H. A. Plimmer, who wrote the first history of the Society from 1911 to 1949 [1]:

"J. A. Gardner presided and gave the chief reasons for calling the meeting.\* He emphasized the growing importance of Biochemistry both on the animal and vegetable sides. The increasing number of workers rendered the formation of a Biochemical Society desirable for four main reasons: (1) a common meeting place to discuss biochemical problems; (2) the association of the workers on the animal and vegetable sides; (3) a common journal to be owned by the Society; (4) the advancement of Biochemistry in this country.

"Professor W. D. Halliburton, in opening the discussion, was strongly in favour of the formation of such a combined society with its meetings on unconventional lines. He moved a resolution to this effect, which was seconded by Doctors F. G. Hopkins, A. E. Garrod and A. Harden.

"Professor H. E. Armstrong, who was opposed to any specialization, said that the main object should be to have a 'focus point', and that a society or club wherein the social side of the gathering preponderated should be a primary condition. Dr E. J. Russell, speaking for agriculture, said the number of scientific papers was not large, and thought they would be of more value if brought before other biochemists. Dr E. F. Armstrong hoped no omission would be made of workers on the botanical side. Dr Plimmer, in summarizing the subjects so far mentioned said that the chemistry of brewing came into consideration as well.

"Finally, it was proposed by H. E. Armstrong, seconded by W. D. Halliburton and carried unanimously, 'that provisionally a club be established to promote intercourse among those biologists and chemists who are mutually interested and concerned in the investigation of problems common to biologists and chemists.

"To make preliminary arrangements Professor Halliburton proposed that there should be a small committee limited to the conveners of the meeting. As these two gentlemen did not sufficiently represent all the interests, a committee of five was chosen: Gardner, Garrod, Halliburton, Plimmer and Russell. Plimmer was asked to be Secretary."

After immediately circulating interested parties that a Biochemical Club or Society was to be formed, the Committee drew up provisional rules and regulations, which were relatively informal and based on those of the Physiological Society, and called a meeting at UCL for 4 March 1911. Seven communications were presented at the meeting, after which thirty-eight members adjourned for dinner and a consideration of the proposed rules. After prolonged and vigorous discussion the rules were accepted with two amendments: (i) that the group be provisionally named 'The Biochemical Club' and (ii), following consideration of a letter from a lady who wished to

\*In the minutes recorded as "Mr Gardner sitting on the table made some observations".

become an original member, that only men be eligible for membership. Both these amendments were destined to be revoked. The second bizarre decision (carried by 17 votes to 9) was soon challenged and at a Committee meeting on 13 July 1912 it was reversed by 24 votes to 7 and at the first meeting at which new members were elected (5 February 1913) three of the seven new members were women; they were Dr Ida Smedley — later Dr Smedley-McLean, the first woman Chairman of the Committee (1927), Dr (later Dame) Harriet Chick and Muriel Wheldale. The designation 'Club' was considered more appropriate to a group without its own scientific Journal. The saga of the acquisition of the *Biochemical Journal* is discussed later (section 2.2).

The honour of being the first fully paid-up member of the Biochemical Club was claimed by (Sir) Charles Lovatt Evans (UCL) (see Fig. 2.13), who recalls that he paid Plimmer in his laboratory immediately after the first meeting.

At the first meeting a relatively large Committee (14) was set up to function for 1911–1912. This size was necessary so that all aspects of Biochemistry would be adequately represented. The constitution of the original Committee with the members' affiliations is given in Table 2.1. The indefatigable Plimmer acted both as Honorary Secretary and Honorary Treasurer. It is significant that right at the outset the Society cast its net as widely as possible. This policy has continued throughout the years partly deliberately and partly owing to the irresistible pressure of a buoyant and expanding science. There is no doubt that this has been the correct approach and that it accounts in great measure for the scientific strength of the Society today. The location of the meetings in 1911–1912 (Table 2.2) emphasizes the wide range of interests wisely cultivated by our founders.

The visit to Rothamsted on 10 June was particularly memorable in that the members were shown, amongst other

**Table 2.1. The Founding Committee of the Biochemical Club, 1911–1912**

Name	Institution
H. E. Armstrong, F.R.S.	City & Guilds College (eventually Imperial College)
W. M. Bayliss, F.R.S.	U.C.L.
A. J. Brown, F.R.S.	University of Birmingham
H. H. Dale, F.R.S.	University of London
J. A. Gardner	University of London
A. E. Garrod, F.R.S.	U.C.L.
W. D. Halliburton, F.R.S.	King's College London
A. Harden, F.R.S.	Lister Institute
F. G. Hopkins, F.R.S.	University of Cambridge
F. Keeble, F.R.S.	University of Reading
B. Moore, F.R.S.	University of Liverpool
W. Ramsden	University of Oxford
E. J. Russell, F.R.S.	Rothamsted Experimental Station
R. H. A. Plimmer	U.C.L.

Table 2.2 Venues of the Meetings of the Biochemical Club, 1911–1912

Date	Location
4 March 1911	U.C.L.: Physiology Department
6 May 1911	Oxford
10 June 1911	Rothamsted Experimental Station
4 July 1911	City & Guilds College, South Kensington*
14 October 1911	School of Agriculture, Cambridge
17 November 1911	King's College London: Physiology Department
12 December 1911	Lister Institute, London
3 February 1912	St Bartholomew's Hospital, London: Department of Chemical Pathology
2 March 1912	U.C.L.: Physiology Department

\*Now Imperial College.

The Bio-chemical Club 1911		
Date	Name	Address
June 10	Adams	St John's Tech. Institute
"	J. H. Rapp	City's Hospital
"	P. Haas	St Thomas Hospital
"	W. J. Young	Lister Institute
"	J. H. Rapp	Physiol. Assoc. Sec. Sec.
"	H. H. Rapp	University College
"	Arthur H. Rapp	Lister Institute
"	C. H. Rapp	St John's Ave.
"	R. H. Rapp	London
"	S. H. Rapp	London
"	S. H. Rapp	Lister Institute
"	A. H. Rapp	Burton on Trent
"	W. M. Rapp	Hampstead, London
"	Chas. H. Rapp	Univ. Coll. Lond.
"	Henry E. Rapp	Univ. Coll. Lond.
"	R. H. Rapp	Univ. Coll. Lond.
"	George Rapp	Barnet, London
"	C. H. Rapp	Imperial College of Science, South Kensington
"	R. H. Rapp	University, Leeds
"	W. N. Rapp	Reading

Fig. 2.2. Signatures of some of those attending the third meeting of the Biochemical Club at Rothamsted Experimental Station, 10 June 1911. (Reproduced from the Visitors' Book at Rothamsted by kind permission of the Director, Sir Leslie Fowden, F.R.S.)

things, the platinum dishes, about the size of shovels, in which Lawes and Gilbert ashed their pigs in their classical experiments. The first page of the entry in the Rothamsted visitors' book relating to this the third meeting of the Society is reproduced in Fig. 2.2.

The first Annual General Meeting of The Biochemical Club was held on 2 March 1912 at UCL. The policy of holding the A.G.M. at UCL continued for over fifty years but since 1968 the location of the meeting has become decentralized. The first A.G.M. outside London was, appropriately, held in Liverpool in 1968.

At the first A.G.M., which was chaired by W. M. Bayliss (Fig. 2.3), it was reported that at the eight meetings held during the year, forty-five communications were presented to an average audience of about forty; the best attendances were at Cambridge and the Lister Institute. The attendances at the dinners were unsatisfactory. The balance sheet (Table 2.3)



Fig. 2.3. Sir William Bayliss, F.R.S. Founder member of the Biochemical Society. Chairman of the Society Committee, 1914–1915, 1919–1920. Editor of the *Biochemical Journal*, 1913–1924.

Table 2.3 Balance sheet of the Biochemical Club, 1911

Income		Expenditure	
	£ s. d.		£ s. d.
Subscriptions —		Bank Charges	0 1 6
132 Members at 10/6 + 3d	69 6 3	" "	0 2 3
Interest on deposit	0 7 4	Stationery	0 12 4
		Meetings (Tea & Servants)	8 1 0
		Printing	9 15 3
		Postage	4 12 6
		Deposit	40 0 0
		Balance	6 8 9
	<u>£69 13 7</u>		<u>£69 13 7</u>

showed an income of nearly £70 and a balance £6 8s 9d [about £200 today]. The members of the Society numbered 132. All these figures should be contrasted with those for 1984–1985 to emphasize the enormous development of the Society. During the business meeting a squabble arose about the composition of the Committee, which resulted in H. E. Armstrong (Fig. 2.4) resigning his membership and banging out of the room. "This was unfortunate as he did so much to start the club" [2]. Morton [3] recalls that "Armstrong was able and influential and could be cantankerous. The present writer heard him, as an old man, fulminating about what he felt was the dreary lack of style in the *Journal of the Chemical Society*. Armstrong ferociously enjoyed being (partly) right on many issues".

## 2.2 Acquisition of the *Biochemical Journal*

At meetings of the Physiological Society around the turn of the century, the number of biochemically orientated papers



Fig. 2.4. Professor H. E. Armstrong, F.R.S. Founder member of the Biochemical Society. Prominent in the debate over 'Club or Society?'.

presented often crowded out those concerned with pure physiology. If this had continued it would certainly have strained the traditionally good relationship between biochemists and physiologists. Chemical papers produced by biochemists were published in the *Journal of the Chemical Society* but as chemists generally considered biochemists to be physiologists there was no satisfactory outlet for physiologically orientated chemical papers except for the privately run *Biochemical Journal* (see later), which, in any case, was founded only in 1906. The situation in the U.K. contrasted with that in Germany where *Hoppe-Seyler's Zeitschrift für physiologische Chemie* began in 1877 and *Hofmeister's Beiträge* in 1901; these were followed in 1906 by the *Biochemische Zeitschrift*. In the U.S.A. the *Journal of Biological Chemistry* was founded in 1905.

It was an important and immediate aim of the Biochemical Club to develop its own Journal as a mandatory step to becoming a *bona fide* scientific society. The achievement of this aim was not as straightforward as might have been thought because the *Biochemical Journal* already existed. It had been founded in Liverpool by the irrepressible Benjamin Moore with the financial help of his co-worker and patron E. Whitley (see Chapter 1), who also helped with the editing. At the start, the *Biochemical Journal* was mainly a house journal founded because Moore was finding acceptable outlets for the research papers of him and his colleagues increasingly difficult to secure. It is fascinating to read the contents list of the first issue of volume 1 (Table 2.4). However, the *Journal* quickly widened its clientele and expanded its circulation, so that it had 170 subscribers when it was taken over by the Biochemical Club in 1912.

The financial arrangements with the publishers, The Liverpool University Press, are not clear but the *Journal* must have eventually made some profit. Dr T. Moore (Benjamin Moore's son) recalls that "from the death of my father in 1922 until well after I came to Cambridge (in 1925) I used to be greatly helped in my penury by small royalties from the L.U.P. relating to the first four (six?) volumes of the *B.J.*" [4].

The story of this takeover of the *Biochemical Journal* with its delicate and complicated negotiations between strong characters makes fascinating reading as described by Plimmer [1], who was a protagonist in this affair.

"Professor Moore was a member and strong supporter of the Biochemical Club. The Committee met Professor Moore in consultation on 11 February, 1911. It decided not to issue printed proceedings for distribution at the meetings. Professor Moore offered to accept papers of members of the Club and act in conjunction with the Committee in regard to their publication and proposed to issue the new volume under the editorship of B. Moore and E. Whitley with the collaboration of the Committee

**Table 2.4. Part of Contents of Volume 1 of the *Biochemical Journal***

	PAGE
The Oxygen Tension in the Submaxillary Glands and certain other tissues. By Joseph L. Barcroft, M.A. . . . .	1
A method for determining the total daily gain or loss of fixed Alkali, and for estimating the daily output of Organic Acids in the Urine, with applications in the case of 'Diabetes Mellitus.' By Edward S. Edie, M.A., B.Sc. (Edin.), Carnegie Research Scholar, and Edward Whitley, M.A. (Oxon.) . . . .	11
On the treatment of 'Diabetes Mellitus' by acid extract of Duodenal Mucous Membrane. By Benjamin Moore, M.A., D.Sc., Johnston Professor of Bio-chemistry, University of Liverpool; Edward S. Edie, M.A., B.Sc. (Edin.), Carnegie Research Scholar, and John Hill-Abram, M.D. (Lond.), M.R.C.P., Honorary Physician, Royal Infirmary, Liverpool . . . .	28
The Physiological Properties of 'West African Boxwood.' By R. J. Harvey Gibson, M.A., F.L.S., Professor of Botany in the University of Liverpool . . . . .	39
Filtration as a possible Mechanism in the Living Organism. By Leonard Hill, M.B., F.R.S., Lecturer on Physiology, London Hospital, Medical School . . . . .	55
The Pharmacological Action of Digitalis, Strophanthus, and Squill on the Heart. By G. S. Haynes, M.B., B.C. . . . .	62
The Action of Acids and Alkalies, and of Acid, Alkaline, and Neutral Salts upon the Tadpole of <i>Rana Temporaria</i> . By Herbert E. Roaf, M.D. (Toronto). British Medical Association Research Scholar, and Edward Whitley, M.A. (Oxon.) . . . . .	88
Observations on Fehling's Test for Dextrose in Urine. By Hugh MacLean, M.D., Senior Assistant in Physiology, University of Aberdeen . . . . .	111
Studies in the Chemical Dynamics of Animal Nutrition. By S. B. Schryver, D.Sc., Ph.D., Lecturer on Physiological Chemistry to University College, London . . . . .	123
On the Influence of Calcium Salts upon the Heat-Coagulation of Fibrinogen and other Proteids. By Charles Murray, M.A., M.D., D.P.H., formerly Senior Assistant in Physiology in the University of Aberdeen . . . .	167
On some Aspects of Adsorption Phenomena, with especial reference to the Action of Electrolytes and to the Ash-Constituents of Proteins. By W. M. Bayliss, D.Sc., F.R.S., Assistant Professor of Physiology in University College, London . . . . .	175
A Colour Reaction of Formaldehyde with Proteids and its Relation to the Adamkiewicz Reaction. By Otto Rosenheim, Ph.D. . . . .	233
Glycocoll and Total Mono-Amino-Acids in Pathological Urines. By I. Walker Hall, M.D., Professor of Pathology, University College, Bristol; Pathologist to the Bristol Royal Infirmary. . . . .	241
The Influence of X-Rays on the Nitrogenous Metabolism and on the Blood in Myelogenous Leukaemia. By Owen T. Williams, M.D., B.Sc. (Lond.), Medical Registrar to the Liverpool Royal Infirmary . . . .	249
Secretion by the Renal Tubules in the Frog. By F. A. Bainbridge, M.A., M.D., Gordon Lecturer in Experimental Pathology, Guy's Hospital; and A. P. Beddard, M.A., M.D., Assistant Physician to Guy's Hospital. . . .	255

of the Biochemical Club. The subscription to the Club should not include the Journal, but members would be able to obtain it through the Club at a discount of 15% on the published price. These terms were reported at the meeting of the club on 4 March, 1911.

"This proposal was not acceptable to the Club committee which wanted a Journal of its own. Professor Moore was to be asked on what terms he would hand over the *Biochemical Journal* to the Club. He met J. A. Gardner and R. H. A. Plimmer on 4 July, 1911 and explained that he started his Journal because of his desire that contributions should be published as submitted without criticism or editorial suggestions. His view was that authors of poor papers would take the blame and not the Journal. He was prepared to transfer his Journal on this basis of free and unrevised publication. The cost of publication was about £150 a volume, and there was a deficit of about £200 which might be settled satisfactorily. Gardner and Plimmer pointed out that a rival journal would compete with Moore's journal and had a good chance of success as most workers in Biochemistry had joined the Biochemical Club; yet it might not succeed. Moore wrote four days later (8 July) to say that the Club should start its own journal, and in order to give the Committee freedom of action he resigned his membership of the Club.

"The Committee on 8 July, 1911 discussed the pros and cons of publishing. Some journals had guarantors who had never been called upon. It was believed it would be possible to publish a journal without loss. So Dr Ramsden (Fig. 1.7) was asked to make inquiries at the Oxford University Press, Dr Hopkins at the Cambridge University Press, Dr Plimmer at the London University Press and at some private publishers and printers. They reported to the Committee on 14 October, 1911. Comparison of the estimates showed the cost to be from £170 to £200 a volume. A private publisher offered to take the whole responsibility without guarantee and give half the profits to the Biochemical Club.

"A suggestion of H. E. Armstrong that he with Plimmer and others act as guarantors, so that a journal be speedily published, and hand over the journal when published to the Club was not received favourably.

"Professor F. Keeble (Fig. 2.5) then moved that the Journal be published by a University Press, and that detailed particulars be obtained from the Oxford and Cambridge University Presses. Doctors Ramsden and Hopkins were asked to continue their previous negotiations.

"Dr Ramsden and the Oxford University Press felt that in the interests of Biochemistry in this country two journals should not exist, and Ramsden again tried to get Moore's co-operation. Professor Moore sent a draft memorandum of his terms: a sum of £260 [£8600] payable in four yearly instalments of £65 [£2150], Professor Moore and E. Whitley to remain as editors until the money was paid. The *Biochemical Journal* had 170 subscribers of whom twenty-four were members of the Biochemical Club. The Club Committee was told later that the price represented 1½ years' purchase at £1 1s a subscriber. This high price could not be accepted by the Committee.

"Professor H. E. Armstrong, though he considered it desirable to buy the *Biochemical Journal*, said that no more than £100 should be offered. Later at Dr Hopkins's suggestion, he proposed that Principal Miers of Manchester University be asked to assess the value of Moore's Journal to the Club. Moore and Whitley met



Fig. 2.5. Professor F. Keeble, F.R.S. Founder member of the Biochemical Society. Prominent in the acquisition of the *Biochemical Journal*.



the Committee and agreed to the valuation, but neither side was to bind itself to accept. Principal Miers agreed to act if a short statement of the negotiations with Moore were submitted to him. His valuation of £150 [£5000] was reported to the Committee on 20 January 1912. Dr Ramsden was not content with this verdict and asked Moore to send his own statement to Principal Miers. He made no alteration in his valuation. The disparity was great and not pleasing to Moore.

"The Secretary reported to the Committee that he had met Professor Moore in December and asked him if he would agree to a valuation by Mr W. M. Meredith of Messrs Constable and Co. The answer was 'Yes'. Mr Meredith had agreed to act only if he could ask any questions, and that his award was adhered to by both parties. Moore wrote that he could not agree to the conditions.

"Finally, at this meeting of the Committee, to overcome this deadlock Professor Keeble proposed that Principal Mier's valuation of £150 [£5000] for the purchase of all rights in the *Biochemical Journal* as specified in the memorandum below be communicated to Professor Moore as a definite minimum proposal from the Biochemical Club — 'Should he be unwilling to accept the proposal, the offer is made to refer to Mr Meredith for final adjudication, both parties agreeing to accept Mr Meredith's valuation as final'.

#### *"Memorandum*

1. In consideration of the terms contained in subsequent paragraphs the vendors, Messrs B. Moore and E. Whitley and the University Press of Liverpool, agreed to hand over the *Biochemical Journal* to the Purchasers, the Biochemical Club, as a going concern and free from all debts together with a list of subscribers thereto standing at present at 170, but all copies of back volumes and numbers already issued of the current volume shall remain the property of the vendors.
2. The Biochemical Club agreed to pay forthwith to the vendors the sum of £150 [£5000] in purchase of the goodwill and subscription list mentioned in clause 1 and to take over and be financially responsible for the issue and management of the Journal as from a date to be agreed upon.
3. The *Biochemical Journal* shall be wholly and solely held, edited and managed by the Biochemical Club.

"If this offer now made to Professor Moore be not accepted the Biochemical Club proceeds to establish its own Journal independently.

"On February 3, 1912 two letters from Professor Moore stated that he agreed to accept the Biochemical Club's proposal to buy the Journal for a minimum price of £150, but he wished for an interview with Mr Meredith to see if the figure could be raised. He desired (1) to have the first option of recontinuing the *Biochemical Journal* if for any reasons the Biochemical Club ceased to publish it, and (2) that the title should not be changed and the volumes renumbered as from the taking over. Professor Moore was

informed that the Committee could not accept the limitations of the second point, and that he should give a statement that he agreed to the original terms.

"On March 2, 1912 the Secretary informed the Committee that Professor Moore was unable to meet Mr Meredith and had written agreeing to accept the valuation of £150.

"The arrangements were thus at last complete, and it was decided to take over at the completion of the current volume (number 6). Professor Moore would state in his next number that in future the *Biochemical Journal* would be issued by the Biochemical Club.

"Later, he inserted a slip repeating this information, setting out the objects of the Biochemical Club, and stating that the subscription was 25s per annum including the Journal for the year. Other subscribers were asked to pay £1 12s per volume.

#### *The Payment of £150*

"Before the negotiations with Professor Moore were completed a generous gift of £25 from Professor Sir William Osler (through Dr Ramsden) was gratefully accepted. There was a deposit of £40 and a balance of £6 from the first year. A similar balance of £40 was expected from the second year. The Secretary felt that members would like to give donations and feel that they had helped to buy the Journal for the Club. In this way £30 was subscribed. A gift of £5 from Mrs Herter was sent from New York through Dr H. D. Dakin. Dr Vincent kindly contributed the last £10.

"An agreement for the purchase was drawn up by a solicitor. The Chairman of Committee (Dr A. Harden) and the Secretary (Dr R. H. A. Plimmer) was authorized to sign the deed of assignment, and the Secretary was authorized to pay £150 [£5000] to Professor Moore and Mr E. Whitley.

"The Biochemical Society and the *Biochemical Journal* are now so well and firmly established and taken for granted that few of the present members know anything of the troublesome negotiations which harassed the Committee of the Biochemical Club during the first two years.

#### *Final Arrangements*

"Some additional details were still necessary. A subcommittee consisting of J. A. Gardner, A. Harden, F. G. Hopkins and the Secretary was appointed to report on (1) the title and constitution of the association, (2) the cost of publication of the *Biochemical Journal*, (3) the amount of subscription, based if necessary on a canvas of members.

"The subcommittee, in view of past argumentative discussions at annual meetings, decided to take a poll by postcard on three questions:

- (1) Is it your opinion that membership of the Club should involve compulsory subscription to the *Biochemical Journal*?

Answer: Yes 65; No 25.

- (2) In the event of the subscription to the *Biochemical Journal* not being compulsory for all members, are you prepared to

subscribe to the Journal at a cost of 15s to £1 per annum, in addition to the present subscription to the Club?

Answer: Yes 72; No 19.

- (3) Are you in favour of changing the name of the association to 'The Biochemical Society'?

Answer: Yes 79; No 10.

"It was clear that the subscription to the *Biochemical Journal* should be compulsory for all members and that the title should be The Biochemical Society.

"The tenders for printing the *Biochemical Journal* showed that the most favourable terms were those of the Cambridge University Press: £200 approximately for an issue of 500 copies of eight parts of 80 pages per volume in the style of the present Journal. It was estimated that a subscription of £1 per member would cover the cost of publication. Under the title of the Journal the words 'edited for the Biochemical Society' should be inserted.

#### *Editorship of the Biochemical Journal*

"The Committee decided that the *Biochemical Journal* should be edited by two editors and a representative editorial Committee.

"No definite record exists of how the first editors were chosen. The Secretary well remembers how he thought that one editor might represent the more chemical side and the other the more physiological, and that if he could secure the services of Dr A. Harden and Dr W. M. Bayliss as editors the greatest benefits would come to the Biochemical Society and the *Biochemical Journal*. He made special visits to Doctors Harden and Bayliss and was agreeably surprised and overwhelmed with delight to learn that both would accept. It was the finest possible culmination to all the work in connection with the *Biochemical Journal*."

The choice of Harden and Bayliss as editors was an inspired one; they worked together until 1924, during which time the high standards always associated with the *Journal* were firmly established. Harden, however, carried on when Bayliss retired and with a succession of assistants, H. W. Dudley (1924–1930, Fig. 2.6), C. R. Harington (1930–1937, Fig. 2.7) and F. J. W. Roughton (1935–1937, recruited to deal with physiochemical papers), carried on to complete 25 years' service. On his retirement Harden was presented with a silver salver bearing facsimile signatures of those still living who had served with him on Biochemical Society Committees (Fig. 2.8). At the presentation the Chairman of the Committee, Professor H. J. Channon (Fig. 2.9), noted that the number of words published per year in the *Biochemical Journal* when Harden began as Editor was 180,000; this had risen to 1,500,000 25 years later. Harden had thus read around 18 million words in proof, many of them travelling by train to the Lister Institute from his home in Bourne End, near Henley. Hopkins emphasized the importance of Harden's accession to the Editorial chair by reporting that he had had his copy of volume 7 (the first edited by Harden) bound in a special colour.

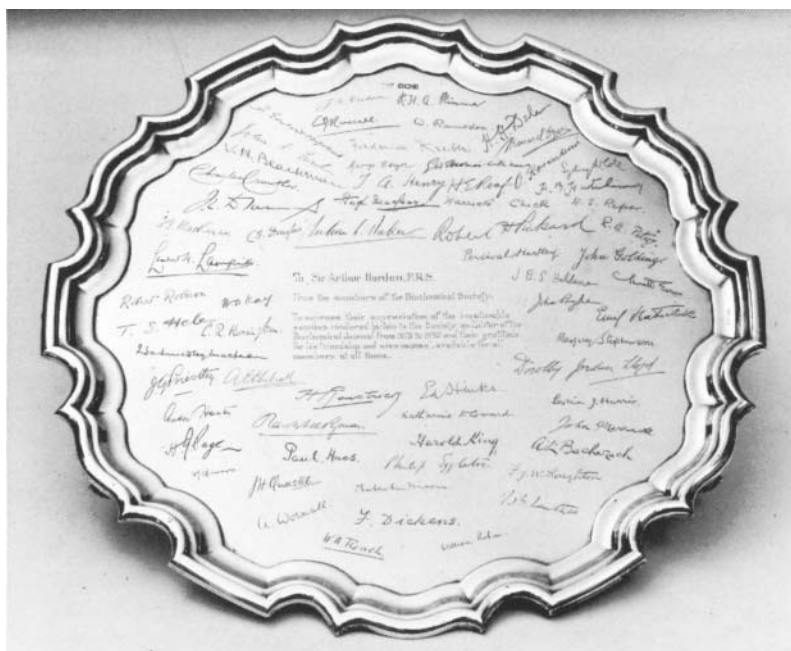


Fig. 2.6. H. W. Dudley, F.R.S. Honorary Secretary, 1922–1924. Chairman of the Society Committee, 1925–1926. Editor of the *Biochemical Journal*, 1924–1930.



Fig. 2.7. Sir Charles Harington, F.R.S. Honorary Secretary, 1929–1930. Editor of the *Biochemical Journal*, 1930–1942. Chairman of the Society Committee, 1955–1957. Honorary Member, 1960.

**Fig. 2.8.** Silver salver presented to Sir Arthur Harden, F.R.S., on 11 March 1938 to mark the occasion of his retirement after 25 years service as Editor of the *Biochemical Journal*.



**Fig. 2.9.** Professor H. J. Channon, C.M.G. Johnston Professor of Biochemistry, University of Liverpool 1932-1944. Chairman of the Society Committee, 1937-1938.

Harden was such a key figure in the Society in the period between the two World Wars that a short biography outlining his career outside the *Biochemical Journal* is appropriate here. He was born in Manchester on 12 October 1865, the son of a Manchester business man. He was brought up in an austere non-conformist atmosphere and was educated at Tettenhall College in Staffordshire. In January 1881, he entered Owen's College, Manchester to study chemistry under Professor Roscoe, and in 1885 he graduated in the Victoria University with first class honours in chemistry. A year later he was awarded the Dalton scholarship. Then he proceeded to Erlangen and, under the direction of Otto Fischer, prepared  $\alpha$ -nitrosonaphthylamine and investigated its properties. Here he was awarded the degree of Ph.D., after which he returned to Manchester, firstly as junior, and later as senior lecturer in chemistry under Professor H. B. Dixon. Harden remained at Manchester for another nine years, during which his activity seems to have been devoted chiefly to teaching and literary work. The literary work to which he was expected to give most of his time was collecting data for the *Treatise on Organic Chemistry* in three volumes by Roscoe and Schorlemmer. According to Chibnall [4] "The same fate awaited Johnny Russell (later Sir John Russell and Director of Rothamsted Experimental Station) ... Harden told me that the only remuneration he and Johnny Russell received for their gruelling labours was a brief word of thanks in the third organic volume".

In 1897 he was appointed as chemist to the Lister (then called the Jenner) Institute of Preventive Medicine in London. He had a wide knowledge of chemistry and had proved himself to be a successful teacher and became responsible for teaching the chemical course, which was mostly concerned with the analysis of waters and foods, to medical practitioners desiring to become Medical Officers of Health. These courses were later superseded by special teaching for a Diploma in Public Health conducted in London medical schools and Harden then found that he could devote himself fully to research. At the time Harden was in charge of the Chemical Department at the Institute, but in 1905 it was fused with the Biochemical Department and Harden was placed in charge of the composite department. In 1912, in recognition of his outstanding work on bacterial chemistry and alcoholic fermentation, he was made Professor of Biochemistry in the University of London.

It was during his earliest days at the Lister Institute that Harden started an investigation of the fermentation of sugars by bacteria. Subsequently he embarked on some ten years of research on alcoholic fermentation leading to the discovery of co-zymase and the essential role of phosphoric esters in fermentation. Soon after these discoveries other workers found that phosphorylation provided the clue to many other biological phenomena, including the chemistry of muscle and bone.

During the First World War Harden was left in charge of the Lister Institute as Acting Director and since he wished to devote himself to a subject which would contribute to the War effort, he abandoned his researches on alcoholic fermentation and investigated instead two of the then known accessory food factors or vitamins, lack of which there was good reason to believe was responsible for the diseases beri-beri and scurvy respectively. Both diseases had occurred amongst troops in outposts in Africa and Asia.

Recognition of the importance of Harden's researches came from many quarters. In 1907 he was elected Fellow of The Royal Society, on the council of which he served from 1921 to 1923. In 1929 he shared the Nobel prize for chemistry with von Euler. The Universities of Manchester, Liverpool and Athens conferred honorary degrees upon him and the Kaiserlich Leopold Deutsche Akademie der Naturforschung of Halle elected him to its membership.

Harden retired from the Lister Institute in 1930 and in the following year he was appointed to its governing body, on which he served until his death in 1940. He became Emeritus Professor of Biochemistry at the University of London in 1931 and The Royal Society awarded him its Davy Medal in 1935. In 1936 he received the honour of a knighthood.

Sir Arthur was elected to the Honorary Membership of the Biochemical Society in 1938. Before his death he willed part

of his estate to the Society: the income therefrom was to be applied in defraying the cost of publication of the results of original research in Biochemistry. The emergence of the Harden Conferences catalysed by this bequest is described in the next chapter.

As a person Harden was “somewhat shy and not given to gossip, he disliked public speaking. I recollect the occasion, it was in 1928, when the Society gave a dinner to him and Gowland Hopkins in celebration of their Nobel prizes. Unlike that of the latter, his speech was short, the gist of it being that the prize is given to you for having an idea that worked.” [4].

The retirement of Harden clearly marked the end of an era in the history of the *Biochemical Journal*. The overall development of the *Journal* is so crucial to the Society that it deserves a chapter to itself (Chapter 6).

### 2.3 Emergence of the Biochemical Society

Following the purchase of the *Biochemical Journal*, announced at a special general meeting on 12 October 1912, the Biochemical Club was now poised to transform itself into a Society. This it did at the second A.G.M. on 13 March 1913, when the Committee appointed Gowland Hopkins as its first Chairman. In keeping with the general informality of the Society’s organization, it decided to elect a Chairman annually, rather than a President, although in dealing with outside bodies the Chairman would assume the standing of President. This was reaffirmed in 1921. The Society treated “with scorn the Chartered Institution like the Chemical Society with its mace and time honoured formalities” [4]. Plimmer continued as Honorary Secretary and J. A. Gardner was appointed Honorary Treasurer. Plimmer’s term of office lasted until 1919, when he moved to the newly founded Rowett Research Institute at Aberdeen. In 1927 it was decided to appoint two Honorary Secretaries: one to deal with Committee business and one to act as a Meetings Secretary. This general arrangement still stands to this day.

J. A. Gardner served with great distinction for 31 years until 1944 and it was not until 1941 that he felt he needed an Assistant Treasurer. The Society was particularly lucky to have Gardner as Treasurer because he could, and did, call on the expert professional help of his brother, T. E. Gardner, of the Chartered Accountant firm of T. Gardner & Son.

The debt which the Society owes to its founder Honorary Treasurer and Honorary Secretary cannot be overestimated but, as will be obvious as this History proceeds, it has always been extremely lucky and/or perspicacious in attracting able persons as Officers. The names of those who helped the Society as Chairmen and Honorary Secretaries from 1911 to 1944 are recorded in Tables 2.5 and 2.6 respectively. Gardner

**Table 2.5 Chairmen of the Biochemical Society, 1914–1944**

1913–14 F. G. Hopkins, F.R.S.	1929–30 T. S. Hele
1914–15 W. M. Bayliss, F.R.S.	1930–31 T. A. Henry
1915–16 V. H. Blackman, F.R.S.	1931–32 E. Hatschek
1916–17 G. Barger, F.R.S.	1932–33 C. G. L. Wolf
1917–18 A. Harden, F.R.S.	1933–34 R. Robison
1918–19 B. Dyer	1934–35 F. L. Pyman
1919–20 W. M. Bayliss, F.R.S.	1935–36 H. J. Page
1920–21 P. Haas	1936–37 P. Haas
1921–22 S. B. Schryver	1937–38 H. J. Channon
1922–23 R. H. A. Plimmer	1938–39 R. A. Peters, F.R.S.
1923–24 J. C. Drummond, F.R.S.	1939–40 R. H. A. Plimmer
1924–25 P. Hartley	1940–41 G. M. Findlay
1925–26 H. W. Dudley, F.R.S.	1941–42 D. P. Cuthbertson
1926–27 C. Lovatt Evans, F.R.S.	1942–43 J. C. Drummond, F.R.S.
1927–28 Ida Smedley-Maclean	1943–44 J. V. Eyre
1928–29 R. A. Peters, F.R.S.	1944–45 E. C. Dodds, F.R.S.

**Table 2.6. Honorary Secretaries of the Biochemical Society, 1911–1945**

1911–19	R. H. A. Plimmer
1919–22	J. C. Drummond, F.R.S.
1922–24	H. W. Dudley, F.R.S.
1924–27	P. Hartley
1927–29	H. D. Kay, F.R.S. & R. Robison
1929–30	R. Robison & C. R. Harington, F.R.S.
1930–38	A. C. Chibnall, F.R.S. & H. Raistrick, F.R.S.
1938–40	A. C. Chibnall, F.R.S. & F. G. Young, F.R.S.
1940–43	F. G. Young, F.R.S. & W. T. J. Morgan, F.R.S.
1943–45	W. T. J. Morgan, F.R.S. & W. Robson

was the only Honorary Treasurer during this time. The longest serving Secretary during this period was A. C. Chibnall, eventually Sir William Dunn Professor of Biochemistry in the University of Cambridge (Fig. 2.10; see also Plate 1B). In an autobiographical essay in 1966 [5] he painted a clear picture of the informality and bonhomie which prevailed in the Society right up to 1940:

“The only outside commitment I had in those days (1929), was that of Committee Secretary to the Biochemical Society, H. Raistrick dealing in a similar capacity with the business connected with the public meetings. We ran together in harmony with the Treasurer J. A. Gardner, for seven years, foregathering one afternoon each year to check the books and to dine later with Gardner as host. Although the Society was flourishing and its membership had passed the seven hundred mark, the Journal was eating up all our available cash, and as secretaries, our official attendances at meetings, even as far away as Aberdeen, had to be at our own expense. Raistrick and I between us knew almost every member except those few who lived abroad, and the Society to us was just a happy family with Harden and Harington shouldering all the burden of publication.”



**Fig. 2.10.** Professor A. C. Chibnall, F.R.S. Sir William Dunn Professor of Biochemistry, Cambridge 1943–1949. Honorary Secretary, 1930–1940. Honorary Member, 1969.

In 1986, as a very young 93-year-old, Chibnall still remembered those times vividly and realized that the end of an era was rapidly approaching for the Society: "Towards the end of my period of office the number of our members employed in industry was on the increase, and partly because of this I think the subject was beginning to fragment and discussion at meetings was becoming less breezy and spontaneous. In retrospect the seeds of the formal institute were beginning to sprout." [4].

Formalization of appointment of Officers did not take place until 1943, when it was decided that the terms of Office should be seven years.

## 2.4 Financial Position of the Society

It is now generally accepted that the income from the sale of the *Biochemical Journal* to non-members of the Society is the major source of revenue for the Society. It has not always been so. The annual subscription rate for members was set at £1 5s [about £30 today], which included provision of the *Journal*. However, costs of publication rose after the First World War and the Society was kept solvent after 1925 by the use of accumulated profits, occasional gifts, a grant from The Royal Society, rare payment by authors of part or all the costs of printing long papers, a more generous contract from the Cambridge University Press and an increase in subscription rate to £1 15s (£1.75) [£32]. In addition outside subscribers were charged more. By 1931 losses once again appeared on the balance sheets but a further increase in subscription rate, to £2 2s (£2.10) [£43], another grant from The Royal Society, minor concessions from the Cambridge University Press, together with a new outside subscription rate of £3 10s (£3.50) [£72], allowed a balance to be struck.

The hazardous financial position of the Society at this time has been amusingly described by Chibnall [4]:

"Our Finance during my period of office was always in a precarious state, and when Gardner's brother, our accountant, had given us our statement for the year, Gardner and I used to visit a representative of the Cambridge University Press at its warehouse in Euston Road, London, to discuss payment of our bill for the printing and distribution of the *Journal*. Our discussion was always quite amicable and to the best of my recollection we left with the payment of our bill still two to three years in arrears! As the Press representative used to tell us with a smile, we were supported from profits on the sale of the Bible which it was entitled to print under a charter of James I."

It was against this early background that, in May 1925, T. Gardner & Co. strongly advised the Society that it should become incorporated. The Committee felt no sense of urgency over this and it was not until 1928 that they formed a



subcommittee to examine the options open to the Society. The subcommittee rejected the idea of a Royal Charter and of the formation of a limited liability company; the remaining options were (i) incorporation under Section 20 of the Companies Act, which was designed by the Board of Trade to meet organizations, such as learned societies, which wished to have the status of a learned body without being styled 'Limited', or presumably today 'plc', and (ii) a Trustee system. The subcommittee failed to make a clear recommendation and later in the year the full Committee decided, by a narrow majority, in favour of a Trustee system. The original Trustees were J. L. Baker, H. W. Dudley, J. A. Gardner, A. Harden, H. D. Kay and R. H. A. Plimmer. By this time, however, measures just outlined, accompanied by economies in printing (smaller type and a two column format) and coinciding with a rapid increase in membership and in the number of outside subscriptions, resulted in some profit which could be invested for future developments. The matter was not raised again until 1944 when confidence in the Trustee system was affirmed. However, as the Society grew rapidly after the Second World War, reappraisal became urgent and the events leading to the decision to become incorporated in the early 'sixties are described in Chapter 3.

## **2.5 General Developments**

It was agreed when the Society was founded that eight meetings a year would be held and this was generally adhered to during 1911–1944. Up to the early 1920s the attendance at meetings averaged between 40 and 50 but by the 1940s it occasionally reached over 400. A fascinating side-light on the early days comes from Chibnall [4]: "Very noticeable in those days was the virtual absence of members from Cambridge. This was because in Hopkins' laboratory the teaching was 'how it works', based on physiology, whereas elsewhere it was 'what is it', based on (medical) chemistry". In the 'thirties, efforts were made to organize some sort of Scottish Association to arrange meetings in Scottish centres, a powerful argument being the lack of travel funds for visits to London and other English Centres. However, the Committee eventually agreed that at least one meeting a year should be held in Scotland, which was an acceptable compromise. The number of members of the Society steadily increased (Fig. 2.11) from 132 at the first A.G.M. in 1912 and it reached the 1000 mark on 1 January 1944. The membership now (1986) stands at around 6500 (see Chapter 3).

Landmarks which were reached were the hundredth meeting on 13 March 1926 and the 21st Birthday Anniversary Meeting at UCL on 17 November 1933. At the first meeting, a collection of signatures of those attending the celebration

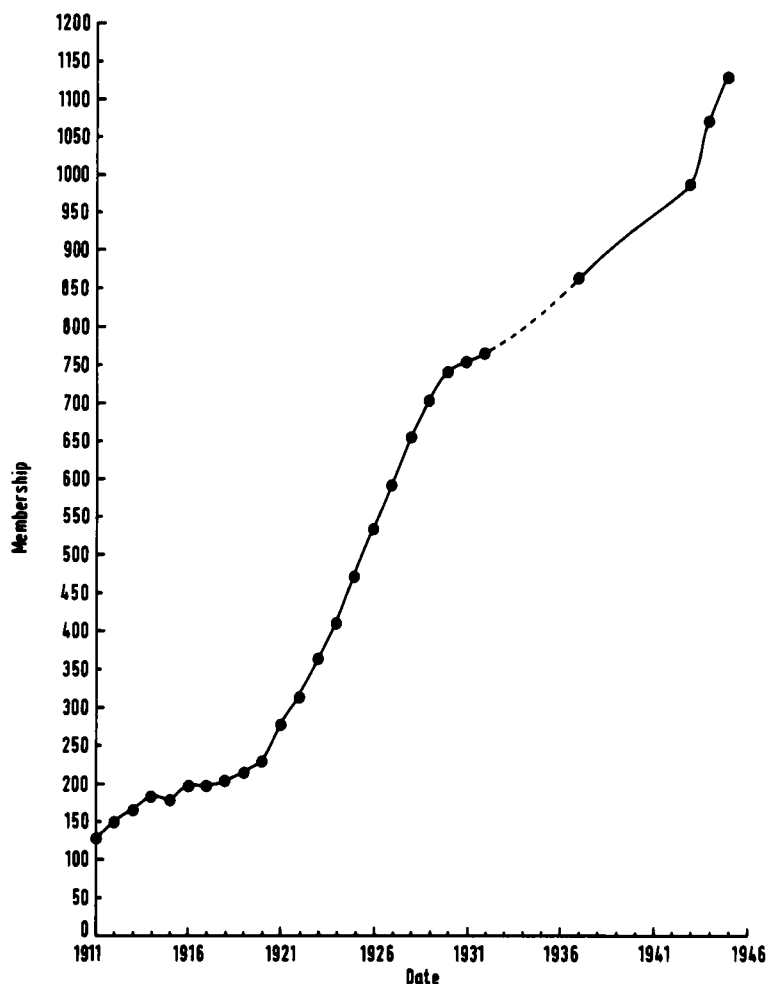


Fig. 2.11. Numbers of members of the Biochemical Society from 1911 to 1944.

dinner at the Grosvenor Hotel was framed and presented to the Lister Institute for custody. It now hangs in the Society's headquarters at Warwick Court (Fig. 2.12). At the second meeting a historic photograph was taken of those original members of the Society attending the meeting (Fig. 2.13).

A special dinner at the Hotel Victoria, London, was held on 3 February 1930 to celebrate the award of the Nobel Prize for 1929 to three distinguished members of the Society, F. G. Hopkins (Medicine) and H. von Euler and A. Harden (Chemistry) (Fig. 2.14). A number of other members also won the Prize during the 1911–1945 period, the first being S. A. S. Krogh in 1920. A full list of Nobel Laureates of the Society between 1911 and 1945 is given in Table 2.7.

## 2.6 Honorary Members

The highest accolade which the Society can bestow on members is Honorary Membership. At this time (1911–1944)

(FOUNDED MARCH 4TH, 1911.)

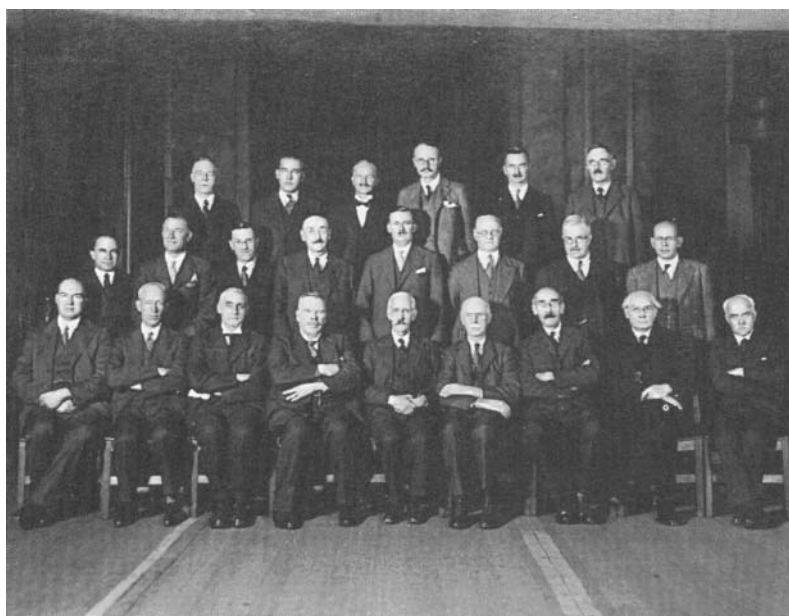
Grosvenor Hotel, Victoria, B.C.

MARCH 13<sup>TH</sup>, 1926.

**Fig. 2.12.** Signatures of members present at the dinner celebrating the hundredth meeting of the Society, 13 March 1926.

apart from the major criteria of high academic distinction and exceptional service to the Society the only rules for election to Honorary Membership were that no appointment should be made whilst a member held an official appointment with the Society and was actively engaged in research (i.e. not retired). However, on election the Honorary Members were deprived of the right to vote. The election of W. D. Halliburton in 1923

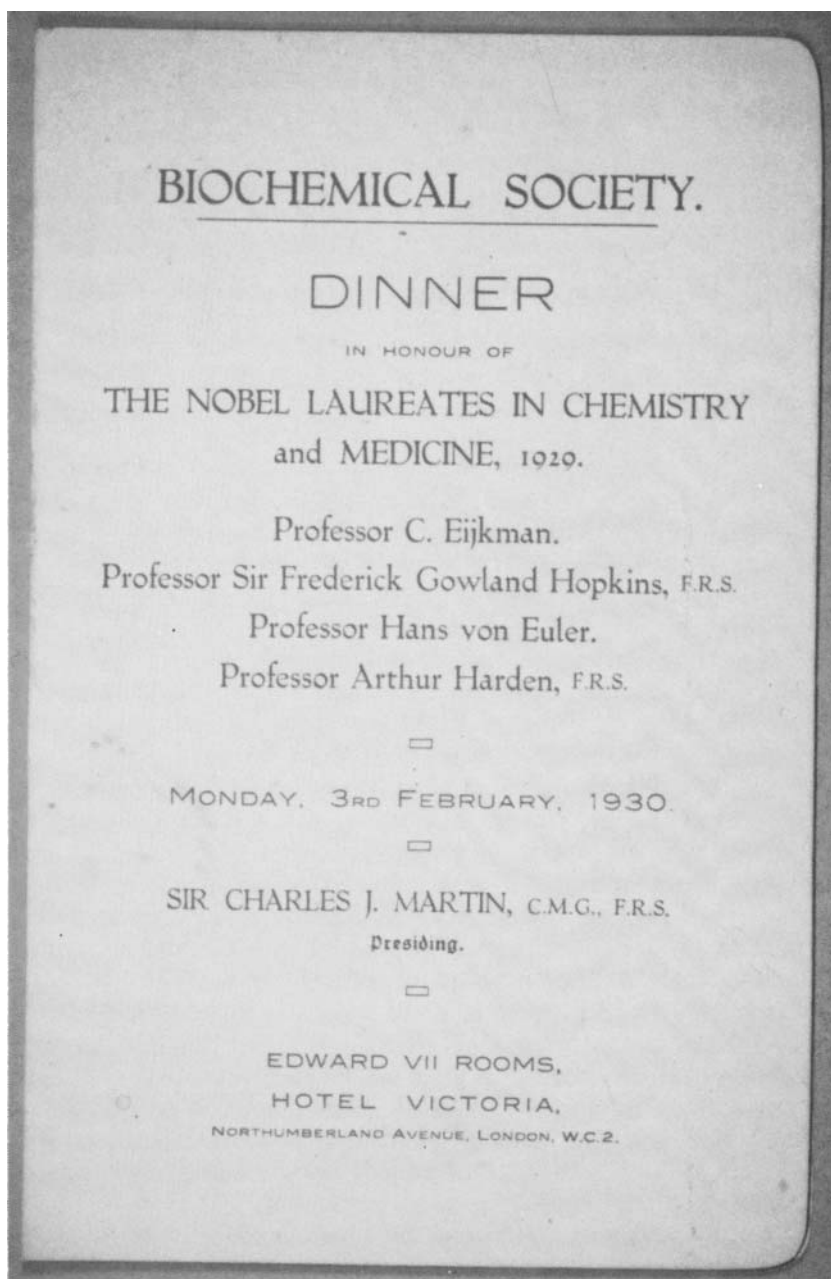
**Fig. 2.13.** Group of original members present at the 21st Anniversary dinner at the Grosvenor Hotel, 17 November 1933. Left to right: (back row) F. P. Worley, C. Lovatt Evans, P. Hartley, E. L. Kennaway, H. W. Bywaters, W. H. Hurtley; (middle row) J. V. Eyre, S. A. Mann, C. Dorée, J. K. Close, H. J. Page, S. G. Paine, J. Golding, W. Cramer; (front row, seated) E. Mellanby, W. Ramsden, R. H. Plimmer, J. A. Gardner, F. G. Hopkins, A. Harden, C. J. Martin, B. Dyer, T. A. Henry.



as the first Honorary Member has already been noted (Chapter 1) and contemporary members must have been delighted to hear of the election in 1930 of A. Harden and F. G. Hopkins, and of R. H. A. Plimmer in 1943.

## 2.7 Discussion Meetings

The organizing of meetings for discussion was proposed at the second meeting of the Club in 1911 and the first was held in December 1914, when “Micromethods of Analysis” were demonstrated at the Lister Institute. Another, which was a joint meeting with the Society of Public Analysts, was held in May 1915. This was the first joint meeting held by the Society and the subject discussed was “Methods Adopted for the Estimation of the Nitrogenous Constituents of Extracts from Albuminous Substances, such as Meat Extracts, with Special References to the Interpretation of the Results”. At least no-one present could complain that they were lured to the meeting under false pretences! An early discussion meeting threw up one of the best anecdotes in the Society’s history, related by N. Pirie. In October 1924, J. B. S. Haldane, then Reader in Biochemistry at Cambridge, and colleagues discussed the effect of inducing acidosis in Haldane (Haldane was never unwilling to use himself in experiments). After a longish silence for discussion, Sir Charles Martin commented: “these are very interesting and important findings, so interesting and important indeed that they ought to be repeated on a normal subject” [3].



**Fig. 2.14.** Frontispiece of the menu for dinner in honour of the Society's Nobel Laureates in 1929.

Other Societies with which joint meetings were held in the early days were the Physiological Society (1918), the Society of Chemical Industry (London Section, 1923, 1926, 1927) and the Institute of Brewing (1923). Later the Pathological Society (1944) and the Nutrition Society (1944) were similarly involved. As will be obvious in later chapters, the policy of joint meetings has continued with only occasional gaps and the constant willingness to take the initiative and to discuss key

**Table 2.7. Members of the Biochemical Society who were awarded Nobel Prizes, 1911–1942**

Details for 1945 on are given in Table 3.17.

Chemistry*		Medicine	
1927	Prof. H. O. Wieland	1920	S. A. S. Krogh
1929	Sir Arthur Harden, F.R.S. H. K. A. S. von Euler	1923	A. V. Hill, F.R.S. J. J. R. Macleod
1937	Sir Norman Haworth, F.R.S. Prof. P. Karrer, Foreign Mem. R.S.	1929	Sir F. Gowland Hopkins, O.M., F.R.S.
1939	Prof. A. F. J. Butenandt, Foreign Mem. R.S. Prof. L. Ruzicka, Foreign Mem. R.S.	1936	Sir Henry Dale, F.R.S. O. Loewi
		1937	A. Szent-Gyorgi

\*T. Svedberg (1926) was not a member of the Society at the time of his award.

areas of biological research with other Societies has been a great strength of the Society. It has emphasized the integral position of Biochemistry in modern biology and helped to prevent various specialized aspects being hived off as separate societies.

The biggest gap in the formal organization of discussion meetings occurred between 1928 and 1934, when the matter was raised in Committee by H. J. Channon. It was probably stimulated by the knowledge that the Chemical Society was active in the field and the Committee decided to approach the Chemical Society unofficially about the possibility of taking part in their discussion meetings. The approach bore fruit and within three months it was reported that the "Biochemical Society would be officially invited to help arrange and take part in biochemical discussions which the Chemical Society would hold". The first such meeting was that on "The Chemistry and Biochemistry of Lipoids" proposed for later in 1934. Furthermore in 1937 the Committee decided to hold one discussion meeting a year additional to the normal eight meetings of the Society. In 1940 a joint discussion meeting was held between the Faraday, Physiological, Biochemical and Chemical Societies on "Chemical Structure in Relation to Membrane Permeability".

In 1942 the Committee acknowledged the widespread desire amongst the members for discussion meetings and also agreed that a 700 word summary of the main papers presented at these meetings should be precirculated. Inevitably, after this slight opening of the stable door, there was a request that the proceedings of the next discussion meeting on "Tetrapyrrolic Pigments" should be published *in toto*. This was not accepted by the Committee but as we shall see in Chapter 3 the pressure for publication mounted and soon a very successful Symposium series was established.

In May 1944 the Committee further acknowledged the increasing importance of discussion meetings in the Society's

activities by accepting the recommendations of a special subcommittee set up to look into the proposal that at least two discussion meetings be held per year and that they should be an integral part of the meetings programme. The main Committee did not accept a further rather odd proposal that 'for the time being' such meetings should be held only in Oxford, Cambridge or London.

## 2.8 Proceedings

In the early days there was no outlet for permanently recording the proceedings of the meetings of the Society but in 1924 the Editor (S. Miall) of the newly established journal, *Chemistry and Industry*, offered the Society the hospitality of his pages for prompt publication of short abstracts of papers presented at the Society's meeting. This proposal appealed to the Committee and was gratefully accepted. The practice was continued until 1941, when the possibility of printing unrefereed abstracts in the *Biochemical Journal*, rejected by the Committee in 1926, was reopened. The new proposal was accepted with the provisos: (i) that the abstracts were printed in a style different from that of the *Biochemical Journal* and (ii) that a clear statement was made absolving the Editors (of the *Biochemical Journal*) from responsibility for the content and method of presentation of the abstracts.

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