

The early history of "Photosynthetica", "Photosynthesis Research", and their publishers

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Abstract

The history of the journals "Photosynthetica" and "Photosynthesis Research" is traced from its beginning. Their development is related to the history of several publishers (Dr W. Junk Publishers, Martinus Nijhoff, Kluwer Academic Publishers). This account is based on recollections and records of the authors, Ad C. Plaizier, and René Marcelle (the first Editor-in-Chief of Photosynthesis Research).

Additional key words: Kluwer Academic Publishers; Martinus Nijhoff; Photosynthesis Research; Photosynthetica; René Marcelle.

Introduction

In 2002, "Photosynthetica", the first international journal devoted to publication of papers on photosynthesis, celebrates 35 years of service to this area of research. Volume 40 will be published this year. Its younger, but successful brother, "Photosynthesis Research", was launched in 1980, and its volume 70 was published in 2001. These jubilees entitle us to overview the early history of these journals.

Research in photosynthesis had been normally published in several journals in the past. Although the articles continue to be published elsewhere (e.g., *Biochimica et Biophysica Acta*, *Biochemistry*, *Photochemistry* and *Photobiology*, *Biophysical Journal*, *Plant Physiology*,

Physiologia Plantarum, *Proceedings of the National Academy of Sciences USA*, among many others), there are now two journals where all aspects of photosynthesis are covered, *Photosynthetica* and *Photosynthesis Research*. At present, both are distributed internationally by the same publisher, Kluwer Academic Publishers, Dordrecht, the Netherlands. In this article, we present historical information on the publishers of photosynthesis literature (Dr W. Junk Publisher, Martinus Nijhoff, and the Kluwer Academic Publishers), on the origin of the journals and their first Editors-in-Chief (EIC), and the early publication record of the journals.

Dr W. Junk, Martinus Nijhoff, and Kluwer Academic Publishers

First, there were two separate and independent publishers, Dr W. Junk Publishers (starting in 1899), and Martinus Nijhoff (starting in 1853).

Dr. W. Junk was born in Prague, 1866 and died in 1942. He was the son of a well-to-do Jewish family (Fig. 1). On August 14, 1899, he established himself as a publisher and a bookseller for natural sciences in Berlin. His work was much appreciated and he received the honorary degree in Philosophy in 1922 from the University

of Frankfurt am Main in Germany, and in 1923, another honorary degree in Natural Sciences from the University of Innsbruck in Austria. In 1934, he moved to The Netherlands due to the then unfavorable political situation in Germany. He had to hire two ships to carry all the belongings amounting to 120 000 kg of material. He settled at Scheveningsweg 74, The Hague (Fig. 2). In 1935, he sold the bookshop and continued being a publisher under the name of "Uitgeverij Dr W. Junk". The publication of

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Abbreviations: G – Govindjee; WP – W. Peters; ZŠ – Z. Šesták.

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the journal "Enzymologia" was launched in 1936 by Dr. W. Junk. Several important papers in photosynthesis were published there. In 1937, his son-in-law Professor Walter W. Weisbach became his partner and after the death of Dr. Junk in 1942, the sole owner of the firm. After the death of Prof. Weisbach in 1962, his wife Irma Weisbach-Junk carried on the work. In 1967, she, together with her daughter, formed a limited liability company "Dr W. Junk b.v." In 1972, "Molecular and Cellular Biochemistry" replaced "Enzymologia". The Junk company was purchased in 1974 by Martinus Nijhoff.

In 1853, Martinus Nijhoff (Fig. 3), the founder of

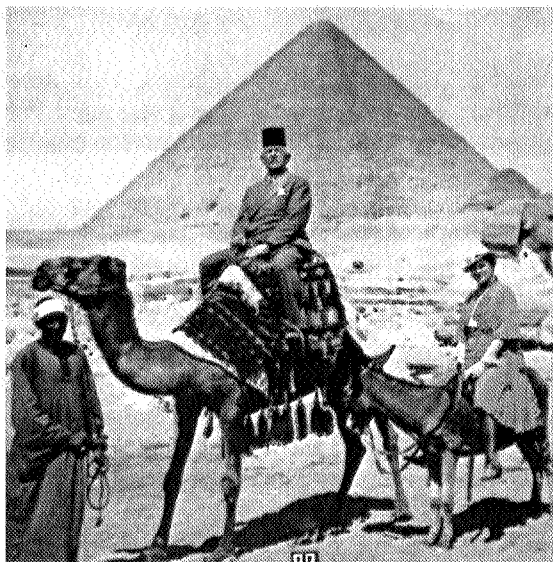


Fig. 1. Dr. W. Junk (center, 1866-1942) and Mrs. Junk during their trip to Egypt in the 1930s.



Fig. 2. Dr. W. Junk publishing house in The Hague. (Photo WP.)

Martinus Nijhoff Publishers, started his company in the Netherlands (Fig. 4) to publish books on philosophy and poetry. As the Dutch market was too small for these specialized publications, international marketing and distribution facilities were developed. In 1903, a Martinus Nijhoff sales office was opened in New York as Nijhoff recognized the tremendous potential of the US market. However, due to the long time it took to send mail across the ocean in those days (they certainly went by ship, and thus took months), this office was closed a few years later. It was only after the Second World War that the publishing activities were expanded into fields such as physical sciences, agricultural sciences, and linguistics; publications on philosophy continued, however.

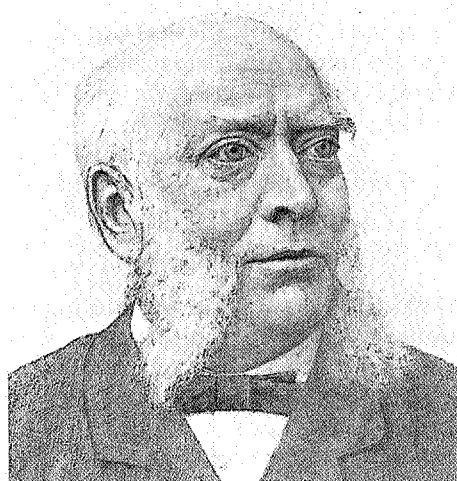


Fig. 3. Martinus Nijhoff (1826-1894). (Courtesy of Ad Plaizier.)

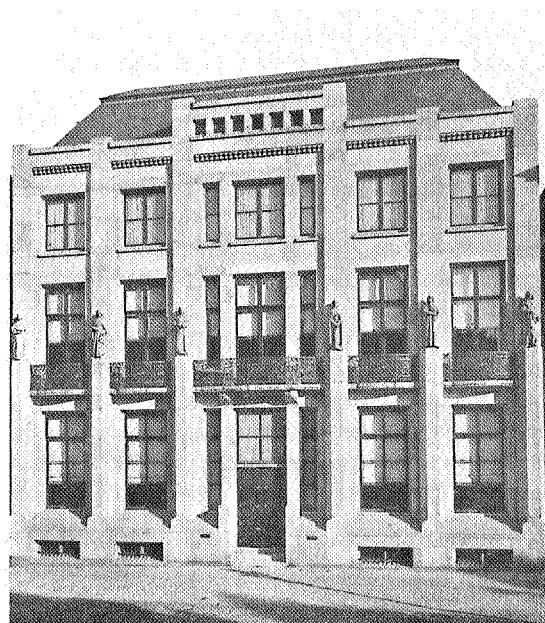


Fig. 4. The main offices of Martinus Nijhoff Publishers at the Lange Voorhout, The Hague, The Netherlands (1910-1984). (Courtesy of Ad Plaizier.)

The "Martinus Nijhoff" Foundation still exists and Ad Plaizier is its current chairman. The books published by Martinus Nijhoff (1853-1978), that were located in The Hague, have been given on permanent loan to the Royal Dutch Library, The Hague. Books and journals published after 1978 are in their archives and two copies of each publication have been donated to the Royal Dutch Library. We note that the father of Martinus Nijhoff, Isaac Anne Nijhoff, was also a publisher, during 1752-1867, and lived in Arnhem (a city in the eastern part of The Netherlands, close to the German border). Most of his books are, however, in Dutch and deal with religion or descriptions of areas in the eastern part of the Netherlands. Currently, this collection (about 150 copies) is in Plaizier's office. Most of the titles in this small collection are very rare and in many cases it is the only copy left in the world. The Foundation makes sure that the contribution of the Nijhoff family to the cultural heritage of the Netherlands is well preserved and accessible to interested parties.



Fig. 5. Aebele E. Kluwer (1861-1933). (Courtesy of J. van Tiggelen.)

Aebele E. Kluwer (1861-1933, Fig. 5) was born in Echten, a village in Friesland, The Netherlands. He was educated to be an "assistant teacher", but he decided to be a bookseller. In 1885 he started in Veendam in the province of Gröningen a bookshop with a partner. By 1891 he already had his own bookshop in Deventer and published

a free advertising paper for schoolteachers. He produced educational books containing fold out plates, textbooks, journal for hunters, four-language technical dictionary, tax and law publications, *etc.* His sons and daughter continued in the publication business and succeeded in forming a very successful publishing company (cf. de Vries 1995).

In the 1970s, Kluwer, now a major Dutch publishing company, decided to expand and internationalize its activities. Dr W. Junk Publishers was purchased in 1974 by Martinus Nijhoff (as mentioned above), but stayed independent as a company till early 1980, when the Kluwer Academic Publishers Group was established: Kluwer Academic Publishers incorporated the publishing programs of not only Martinus Nijhoff Publishers (The Netherlands) and Dr W. Junk Publishers (The Netherlands), but also D. Reidel Publishing (The Netherlands), MTP Press (M = Medical T = Technical P = Publications) (UK), and Graham & Trotman Publishers (UK). In the beginning, each company remained publishing their titles under their own imprint (name). When Kluwer had acquired the family-owned Martinus Nijhoff Publishers, it was decided by the Chief Executive Officers to vigorously expand the STM (Scientific, Technical, and Medical publishing) activities. (Most scientific and academic publishing houses are members of STM - international group of scientific, technical, and medical publishers, an autonomous group affiliated with the International Publishers Association, IPA.)

In 1986, Kluwer decided to drop the names of the individual companies and to start using only Kluwer Academic Publishers as an imprint for all their publications. In 1987, a take over by Elsevier Publishers was avoided; instead, Kluwer merged with Wolters whose corporate culture much more closely resembled its own (cf. De Vries 1995). Thus, the company became Wolters-Kluwer Academic Publishers, using the acronym WKAP. (This explains the e-mail addresses of Kluwer employees to end in @wkap.nl.) It is one of the world's leading international publishing companies; it not only participates actively in the emerging multimedia industry but also has a long history. As discussed above, the company traces its origins to a group of publishing entrepreneurs and family firms active in the Netherlands during the Second Industrial Revolution. A brief history of Wolters Kluwer can be found by going to "history" under "About us" at: <http://www.wolters-kluwer.com/frameset>.

The beginnings of "photosynthesis-related publications"

In the 1970s and early 1980s, promising research was being done in molecular biology and it was expected that the volume of research in this area would expand enormously in the years to come. During the period of 1972-1979, one of us (WP), of the Junk Publishers, handled photosynthesis publications (Fig. 6). In 1972, Dr W. Junk

published the three volumes of the Proceedings of the 2nd International Congress on Photosynthesis Research, held in 1971 in Stresa, Italy. These volumes were edited by G. Forti, M. Avron, and B.A. Melandri. WP had attended this Congress with a modest exhibit displaying *Photosynthetica* (a journal published by the Institute of Ex-

perimental Botany of the Czechoslovak Academy of Sciences) and the book "Plant Photosynthetic Production – Manual of Methods" (edited by Z. Šesták, J. Čatský, and P.G. Jarvis).

Since the publishers of the Kluwer group had already a vast interest in agricultural sciences, mainly plant and soil sciences, solid market research was done to see whether their list of publications could be expanded. This ultimately resulted in the publication of journals such as "Photosynthesis Research", "Plant Molecular Biology", "Plant Growth Regulation", "Plant Cell, Tissue and Organ Culture". Nijhoff/Junk published in 1984 Proceedings of the 6th International Photosynthesis Congress held in 1983 in Brussels in Belgium, and organized by Christian Sybesma. This tradition of publishing Proceedings from the International Photosynthesis Congresses has

Photosynthetica was launched in 1967

The origin of the journal *Photosynthetica* has been described in detail by Šesták (1992). The birth of this journal in 1967 was supported by the "International Biological Program" (IBP). This enabled the introduction, for the first time, of an international journal that specialized in photosynthesis research. The idea was to build a communication bridge between photosynthesis research being conducted in the Eastern and the Western countries. Its first EIC was Professor Ivan Málek as the IBP/PP (Primary Productivity) convener, and its Executive Editor was one of us (ZŠ).

The idea to publish a specialized journal dedicated to photosynthesis research was totally that of ZŠ (Fig. 7). He was sitting at his home, with a broken leg, sometimes in 1966; he suggested that idea to I. Málek, who was a microbiologist, not working in photosynthesis research. He immediately and sincerely supported this idea. At that time, Málek occupied a high position in the Czechoslovak Academy of Sciences; he arranged all the necessary infrastructure: start-up funds, and a secretary for its Edito-

continued (see Appendix 1 for a complete list of the international congresses, and the respective publications).



Fig. 6. Wil R. Peters (1995).

rial Office. Thus, ZŠ and his associates could publish Volume 1 in 1967.

International editorial board of *Photosynthetica* included scientists who were active in IBP and those ZŠ had met at previous conferences (see Appendix 2). The size of the journal slowly increased, from 320 pages (volumes 1 through 4) to 448 pages (volumes 5 through 8) and 480 pages (volumes 9 through 13). In volumes 1-25 of *Photosynthetica*, papers could be published in English, French, or German, but the abstract had to be only in English; also, an abstract in Russian was added to each paper. These abstracts in Russian were removed in 1969 (volume 3) as a silent protest against the Soviet (USSR) occupation of Czechoslovakia: happily enough, the Communist censors did not notice or act against this change. Nevertheless, the number of accepted papers written in languages other than English was negligible. Currently, English is the only language used. The members of the Editorial Board were usually chosen as reviewers. *Photosynthetica* was one of the first European journals that introduced questionnaires as a tool for reviewing manuscripts.

From volume 3 (1969) onwards, the distribution of the journal to the rest of the world, with the exception of the so-called socialist countries, was given to Dr W. Junk Publishers, The Hague, The Netherlands. Due to efficient promotion and advertisement, mainly by WP, the number of journal subscribers was doubled during a very short time.

During the Communist regime, all changes in the size of a journal, and in the composition of the Editorial Board, had to be agreed by both the academic and political authorities. The 1990 statements by the editors of *Photosynthetica*, extending greetings to all the photosynthesis researchers from free Czechoslovakia (volume 24, page 1), is worth reproducing here: "Unfortunately, the development of *Photosynthetica* as a free journal was



Fig. 7. Zdeněk Šesták (2002).

dampened by the tanks that occupied Czechoslovakia in August 1968. In 1971 the Brezhnev and Husák 'normalizers' ordered the immediate removal of our EIC, Ivan Málek, the convener of IBP/PP who protested very strongly against the occupation. Even the cover of the already completed issue 2 of the Vol. 5 was torn off and replaced by a new one without Málek's name."

At that time, one of the Czech members of the Editorial Board, Dr. Bohdan Slavík, was accepted by the Academia authorities to function as EIC. He was more interested in water relations of plants and thus his function as EIC was formal. Slavík remained as EIC till 1990. Starting with volume 25 (1991) he was replaced by the former Executive Editor, ZŠ, and *Photosynthetica* no longer has an Executive Editor.

The editors and publishers of *Photosynthetica* resisted political pressures and remained independent throughout the 20 difficult years. Freedom did come to *Photosynthetica* only after the so-called "velvet revolution". During the last decade of this century, ZŠ has been free to make decisions, with only the agreement of the Director of the Institute of Experimental Botany of the Academy of Sciences of the Czech Republic in Prague. The journal has continuously been published by this Institute. The journal is now free to change its Editorial Board and recently has gone to a larger format (starting with volume 38).

In the years 1992 (volumes 26 and 27), 1993 (28 and 29), 1997 (33 and 34), and 1999 (36 and 37) two volumes

were always published. The largest number of pages was in the exceptional volume 23 of 1989 (768 pp.). Starting with volume 26 the size of each volume has been constant, 640 pages.

Some issues of *Photosynthetica* have included selected papers from specialized symposia: "Biogenesis, Structure and Function of the Photosynthetic Apparatus", Szklarska Poręba, Poland [21(2)], "Investigations of Biogenesis, Structure and Function of the Photosynthetic Apparatus in Connection with Solar Energy Conversion", Tolbuchin, Bulgaria [23(3)], "Photosynthetic Symposium", Kecskemét, Hungary [25(3)], "Biophysical Aspects of Photosynthesis", Eggsdorf/Königs Wusterhausen, Germany [26(4)], "Workshop on Photoinhibition", Třeboň, Czech Republic [27(1-2)], "Photosynthesis and Stress", České Budějovice, Czech Republic [27(3), 27(4), 28(4)], "FESPP Workshop on the Environmental Factors Affecting Photosystem 2", Szeged, Hungary [28(2)], "Chlorophyll: Structure, Biosynthesis, Function", Minsk (Rakov), Belarus [29(2)], "8th Workshop on Photosynthesis", Eggsdorf/Königs Wusterhausen, Germany [30(4)], "9th Workshop on Photosynthesis", Eggsdorf/Königs Wusterhausen, Germany [33(3-4)], "Chlorophyll Fluorescence: Emotions & Reason", Lipno/Šumava, Czech Republic [37(2)], "The Chlorophyll Fluorescence Imaging and its Application in Plant Science and Technology", Lipno/Šumava, Czech Republic [38(4)].

How did the need of another journal in the field of photosynthesis arise?

The amount of good manuscripts increased each year of existence of *Photosynthetica* and the papers in the journal began to be cited. During 1976 and 1978, its impact factor was between 1.1 and 1.2. ZŠ had in his Editorial Office just too many manuscripts, and the time between the acceptance of the manuscript and its publication became longer and longer. Further, the Junk Publishers were interested in making more money out of the sales of *Photosynthetica*. In 1977, Junk Publishers requested ZŠ to increase, as much as possible, the number of pages in the journal. Thus, ZŠ wrote a letter to the authorities of the Czechoslovak Academy of Sciences to increase the number of pages from 480 to 640. Unfortunately, at that time, I. Málek had already been forced to retire, and the political situation was complicated (1977 was the year of the well-known "Charta 77" launched by Václav Havel and other Czechoslovak dissidents). ZŠ did not get any answer for almost two years.

In July 1978, during a symposium on "Photosynthesis and Plant Development" held in Diepenbeek (Belgium),

ZŠ met René Marcelle; they had met much earlier also in Belgium. In 1978, Marcelle told ZŠ that he was contacted by Dr W. Junk Publishers, and that they wanted to start a second journal on "photosynthesis research" in case the increase in size of *Photosynthetica* does not materialize. The publishers asked Marcelle if he would accept the editorship of the new journal. Marcelle and ZŠ discussed the possibility of emphasizing different sub-areas of photosynthesis in the two journals: *Photosynthetica* could focus on the physiological and ecological topics, and the new journal on biophysical and biochemical topics. No agreement concerning the different focus of the two journals was reached then and again at the 1983 International Photosynthesis Congress in Brussels.

The agreement of Czechoslovak authorities to increase the number of pages for *Photosynthetica* came to the Office of ZŠ only in 1979, for the 1980 publication. This was already too late as *Photosynthesis Research* was launched in 1980.

The origin of Photosynthesis Research

During the second half of the 1970s, WP was exploring the possibilities for a second journal on photosynthesis research, mainly because he saw a potential market after

the successes they had with their first publications in the area of photosynthesis research and in the distribution of *Photosynthetica*. Problems were encountered by the pub-

lishers because limited number of well reputed molecular plant scientists were around, which forced the company to appoint Editors with a fine physiological background and an open mind for new developments. One of them was Dr. René Marcelle of St. Truiden, Belgium (Fig. 8).

In 1974, Marcelle had organized at the Limburgs Universitaire-Centrum (in Diepenbeek) a symposium entitled "Environmental and Biological Control of Photosynthesis". Dr W. Junk Publishers agreed to publish the proceedings of this symposium. As noted earlier, Marcelle had organized a second symposium in 1978 on "Photosynthesis and Plant Development", also in Diepenbeek; he had invited ZŠ to attend this symposium. When Marcelle visited the Hague, in 1979, delivering the manuscripts, he met WP. At this time, WP inquired if Marcelle

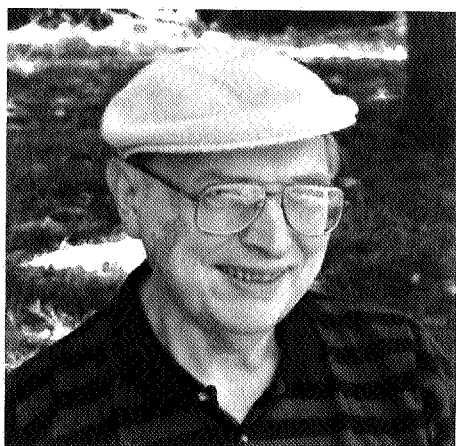


Fig. 8. René Marcelle (2001).

be interested in becoming the EIC of a new journal they were planning to publish. Although Marcelle recalls being approached for a new journal already in 1977, this offer came as a surprise to him, and he requested some time to reflect on this. On the one hand, this job would encroach on his research and administrative activities in Plant Physiology, but on the other hand, it was an interesting challenge.

Marcelle was aware of Dr W. Junk Publishers, The Hague, Netherlands, since early 1970s. These Publishers had published several books on topics related to photo-

synthesis. They included, in addition to the first manual of methods used in photosynthesis research mentioned above, R. Marcelle (ed.): *Environmental and Biological Control of Photosynthesis* (1975); Yu.S. Nasyrov and Z. Šesták (ed.): *Genetic Aspects of Photosynthesis* (1975); R. Marcelle, H. Clijsters, M. van Poucke (ed.): *Photosynthesis and Plant Development* (1979). Later, they (under different names of the branches of the Kluwer company) published R. Marcelle, H. Clijsters, M. van Poucke (ed.): *Effects of Stress on Photosynthesis* (1983); R. Marcelle, H. Clijsters, M. van Poucke (ed.): *Biological Control of Photosynthesis* (1986). They also published volumes 1-13 of *Photosynthesis Bibliography* edited by Z. Šesták and J. Čatský (1974-1985); the series was then published by SPB Academic Publishing of S.P. Bakker. The final three volumes (23-25) of the series were, however, published by the Institute of Experimental Botany of the Academy of Sciences of the Czech Republic. The bibliography volumes contain 104 874 references to photosynthesis papers published in 1966-1974, with author, subject, and plant indexes.

At the time Marcelle accepted to be EIC of the Dr Junk's new proposed journal, he wondered if the new journal could be made into a "European Journal of Plant Physiology". The French had *Physiologie Végétale*, the Germans had *Zeitschrift für Pflanzenphysiologie* (currently, *Journal of Plant Physiology*), the Czechs and Slovaks had *Biologia Plantarum*, the Scandinavians had *Physiologia Plantarum*, and the British had *Journal of Experimental Botany*. However, Junk Publishers told Marcelle at the 1979 meeting in The Hague, that they were interested in a new journal in the field of photosynthesis. This decision was made with the agreement of ZŠ and the new journal would allow the timely publication of research papers that *Photosynthetica* could not have handled.

WP continued contacts with Marcelle, but he handed over his charge to Herman Spruyt in the spring of 1979. Spruyt did the final discussions and arrangements with Marcelle who accepted to be EIC of the new journal called *Photosynthesis Research*. Ad Plaizier became the successor of H. Spruyt in 1981. He pushed the *Photosynthesis Research* very hard into the market.

Photosynthesis Research is born in 1980

A large Editorial Board of the new journal was set up by Marcelle: he had selected about 30 scientists that included almost all the people he knew who had good ideas and/or good experience (Appendix 3). Marcelle decided that (1) he would not publish papers that primarily dealt with experiments on market-bought spinach; and (2) he would institute a new referee system. He wrote to each member of the editorial board asking for their opinion on whether to use (a) anonymous referees; (b) anonymous author as well as the referees; and (c) known referees. To

his disappointment, most (60 to 70 %) chose the usual (a); 10-20 % chose (c); and almost no one chose (b). He, however, gave referees the choice to disclose their names. This system worked well.

Marcelle was always very appreciative of the job members of his editorial board did for the journal. Serving on Editorial Board is a honorary job without any remuneration. He was, however, sometimes miffed with severe opinions of certain referees. He wondered if they may have had some personal problems. When this hap-

pened, he always appointed a third referee before taking a final decision. When he had to reject a paper, he always wrote to the author "Don't worry! Make revisions and submit your paper to another journal". Surely, he thought, that some good papers could be rejected because they are not 'in the line' of the present knowledge and/or 'dogma'. Marcelle was a kind-hearted Editor.

The first number of *Photosynthesis Research* appeared in 1980 with 5 papers, book reviews and instruction for authors (see Appendix 3). The Aims and Scope of the journal were published in the second issue the same year. Although the journal did not have an easy start, as not very many high quality research papers were submitted to the journal at that time, the publishers managed to publish four slim issues per year. Gradually, well-reputed scientists took an interest in *Photosynthesis Research*.

Some years later, Ad Plaizier asked Marcelle whether he would agree to appoint a second editor from the US. Plaizier had attended the 7th International Photosynthesis Congress in 1987, organized for the first time in USA at Brown University (Providence, RI, USA), and returned to Europe with the idea of appointing Govindjee, first as an Associate Editor [vol. 4(1), 1983] and later as co-EIC [vol. 6(3), 1985]. He had realized that appointing an additional editor from the US was necessary for its international coverage as well as for expanding the expertise

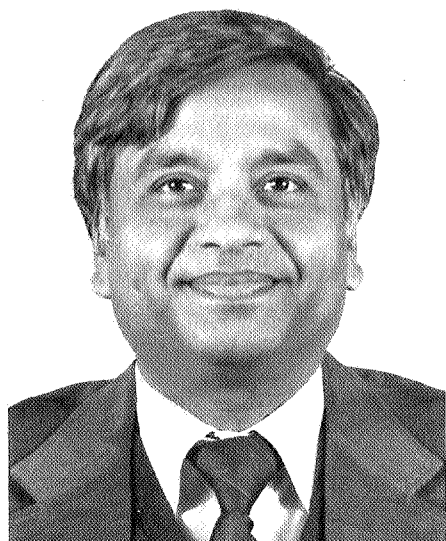


Fig. 9. Govindjee (~1990).

Growth of Photosynthesis Research

Volume 1 (1) (1980) had the imprint of Dr W. Junk Publishers (The Hague). From volume 1(4) (1980) till volume 8 (4) (1985), the imprint was of both Martinus Nijhoff and Dr W. Junk. From volume 9 (1-2) (1986), it was only under Martinus Nijhoff. It was not until volume 15 (3) (1988) that Kluwer Academic Publishers replaced

of the Editorial Board to Biophysics and Biochemistry of Photosynthesis since Marcelle was more into Physiology of Photosynthesis and CAM (Crasulacean Acid Metabolism). Marcelle agreed; Plaizier approached G, and he accepted. Govindjee (Fig. 9) continued as co-EIC until 1988 [vol. 15(3)]. Although he resigned as co-EIC, he has continued to serve the journal as its Historical Corner Editor since then. Robert Blankenship (of Arizona State University, Tempe, AZ, USA; see Fig. 10) replaced G as co-EIC, and has served the journal for a long period, until 1999 [vol. 62(1)]. Bob's co-EIC was Marcelle for a short time [until vol. 18(3), 1988]. Marcelle was replaced by John Gray (of Cambridge, UK) until 1991 [vol. 27(1)] when Bob became journal's sole EIC. *Photosynthesis Research* is highly indebted to him for more than a decade of service. In 1999, from vol. 62 (2), David Knaff (of Texas Tech University, Lubbock, TX, USA) replaced Bob as journal's EIC.

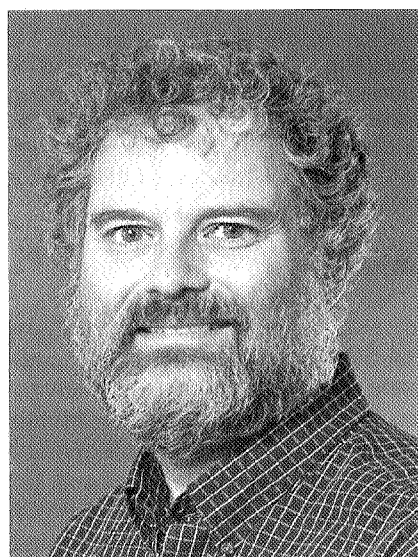


Fig. 10. Robert Blankenship (~2000).

René Marcelle, the first EIC of *Photosynthesis Research*, retired from academic research and teaching position on January 1, 1995. G retired from academic research and teaching on July 21, 1999; he continues to edit its historical corner, he had initiated in the 1980s, publishing "Personal Perspectives", obituaries, and other historical articles. This activity has culminated in special historical issues of the journal celebrating the Millennium (see Govindjee and Gest 2002).

Martinus Nijhoff.

Fig. 11 shows the total number of pages published per year from 1980 to 2000. The biggest jump in the total number of pages/year was recorded during the transition from 1985 to 1986. The journal went from a single volume (4 issues) to 4 volumes (12 issues). In 1986, a special

issue dedicated to L.N.M. Duysens, and a memorial issue to Warren Butler was published. G initiated and co-edited several special issues on the "Molecular Biology" of photosynthetic systems explaining the *ca.* 1 600 pages pub-

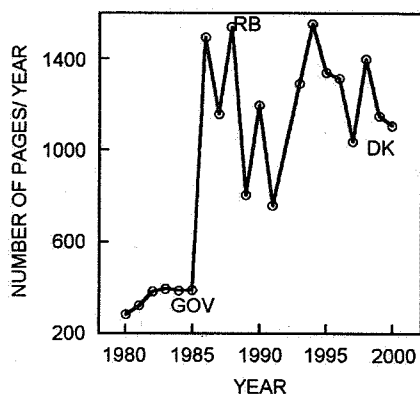


Fig. 11. Growth curve of number of pages per year published in Photosynthesis Research. Data collected by G directly from the past issues of the journal. GOV = Govindjee; RB = Robert Blankenship; DK = David Knaff. A major explanation of the dip in the graph during 1989-1991 is the increased size of pages in the journal. The rise that follows is real, and the 1994 peak is the maximum reached thus far.

Concluding remarks

Both Photosynthetica and Photosynthesis Research now thrive, with somewhat different emphasis and with somewhat different clientele as authors. In particular, Photosynthetica has served well authors mainly from Middle and East European countries and Asia, particularly India and, in last years, China. In addition, its emphasis has been more on the physiological and ecological side. On the other hand, Photosynthesis Research has published greater number of papers in biochemical, molecular bio-

logical, and biophysical aspects of photosynthesis. In addition, its historical papers (perspectives, obituaries, articles, and announcements) are unique and serve the World community. A feather in its cap has been its being the current official organ of ISPR.

Other items of interest are: (1) the small format size of the journal was replaced by large size format in 1989, starting with volume 21(1); (2) the tables of contents were eliminated in 1993 from the back cover starting with volume 36(1); (3) inclusive pages were introduced in 1995 starting with volume 43(1); and finally (4) the cover and the logo was changed for the first time in volume 57(1) when the journal became the official organ of the "International Society of Photo-synthesis Research" (ISPR).

Photosynthesis Research is available on line by clicking on "Journals Content" (on the left panel) at: <http://www.kluweronline.com/issn/0166-8595>.

For Photosynthetica, see <http://www.ueb.cas.cz/ps>.

References

- De Vries, J.: Four Windows of Opportunity: A Study In Publishing. (Translated by Maarten Ultee.) – Wolters Kluwer, Amsterdam 1995.
- Govindjee, Gest, H. (ed.): History of Photosynthesis Research: Celebrating the Millennium. Part 1. – Photosynth. Res., in press, 2002.
- Govindjee, Krogmann, D.: A list of "Personal Perspectives"; selected quotations; lists of Tributes, Historical Notes and Nobel prizes related to photosynthesis. – Photosynth. Res., in press, 2002.
- Šesták, Z.: History of photosynthesis research in Czechoslovakia. – Photosynthetica 27: 1-37, 1992.
- Ultee, M.: Four windows of opportunity: a study in publishing. – Wolters Kluwer, Amsterdam 1995.

Appendix 1. A list of International Photosynthesis Congresses

In early 1960s, Jan B. Thomas of the State University of Utrecht, The Netherlands, pushed for the idea of Congresses in Photosynthesis to be held every 3 years in Western Europe. The Americans had their Gatlinburg conferences. Thus, his initiative led to two congresses, one in France (1962), and another in the Netherlands (1965). The late Helmut Metzner was the first one to have expanded this idea into a real International Congress in Germany (1968). We present below a list of publications from all the international congresses held thus far. Junk/Nijhoff/Kluwer have published proceedings of the second, and sixth to the eleventh Congresses.

1962

Wurmser, M.R. (President): Colloques Internationaux du Centre National de la Recherche Scientifique (CNRS). No. 119: La Photosynthèse. Held 23-27 July, 1962, at Gif-sur-Yvette and Saclay, France, 645 pages. Published by CNRS, Paris 1963.

1965

Thomas, J.B., Goedheer, J.H.C. (ed.): Currents in Photosynthesis. Proceedings of the second western-Europe conference on photosynthesis, Woudschoten, The Netherlands, September 1965. 486 pp. Ad. Donker Publisher, Rotterdam 1966.

1968

Metzner, H. (ed.): Progress in Photosynthesis Research. 3 volumes, 1807 pp. plus index. Proceedings of the first international congress of photosynthesis research, Freudenstadt, Germany, June 4-8, 1968. Publication sponsored by International Union of Biological Sciences. H. Laupp Junior, Tübingen 1969.

1971

Forti, G., Avron, M., Melandri, A. (ed.): Photosynthesis: Two Centuries After its Discovery by Joseph Priestley. 3 volumes, 2745 pp. plus index. Proceedings of the second international congress of photosynthesis research, Stresa, Italy, June 24-29, 1971. Dr W. Junk N.V. Publishers, The Hague 1972.

1974

Avron, M. (ed.): Proceedings of the Third International Congress on Photosynthesis. 3 volumes, 2194 pp. plus index. Proceedings of the third international congress of photosynthesis research, Rehovot, Israel, 1974. Elsevier Scientific Publishing Company, Amsterdam – Oxford – New York 1975.

1977

Hall, D.O., Coombs, J., Goodwin, T.W. (ed.): Photosynthesis 77. 1 volume, 821 pp. plus index. (This is the only proceedings that did not include all the papers; only the symposia papers.) Proceedings of the fourth international congress of photosynthesis research, Reading, UK, September 4-9, 1977. The Biochemical Society, London 1978.

1980

Akoyunoglou, G. (ed.): Photosynthesis. 6 volumes, 4553 pp. plus index. Proceedings of the fifth international congress of photosynthesis research, Halkidiki, Greece, September 7-13, 1980. Balaban International Science Services, Philadelphia 1981.

1983

Sybesma, C. (ed.): Advances in Photosynthesis Research. 4 volumes, 3439 pp. including index. Proceedings of the sixth international congress on photosynthesis, Brussels, Belgium, August 1-6, 1983. Martinus Nijhoff/Dr W. Junk Publishers, The Hague – Boston – Lancaster 1984.

1986

Biggins, J. (ed.): Progress in Photosynthesis Research. 4 volumes, 3286 pp. including index. Proceedings of the seventh international congress on photosynthesis, Providence, RI, USA, August 10-15, 1986. Martinus Nijhoff Publishers, Dordrecht – Boston – Lancaster 1987.

1989

Baltscheffsky, M. (ed.): Current Research in Photosynthesis. 4 volumes, 3731 pp. plus index. Proceedings of the eighth international congress on photosynthesis, Stockholm, Sweden, August 6-11, 1989. Kluwer Academic Publishers, Dordrecht – Boston – London 1990.

1992

Murata, N. (ed.): Research in Photosynthesis. 4 volumes, 3308 pp. plus index. Proceedings of the ninth international congress on photosynthesis, Nagoya, Japan, August 30-September 4, 1992. Kluwer Academic Publishers, Dordrecht – Boston – London 1992.

1995

Mathis, P. (ed.): *Photosynthesis: From Light to Mechanisms*. 5 volumes, 4932 pp. plus index. Proceedings of the tenth international photosynthesis congress, Montpellier, France, August 20-25, 1995. Kluwer Academic Publishers, Dordrecht – Boston – London 1995.

1998

Garab, G. (ed.) *Photosynthesis: Mechanisms and Effects*. 5 volumes, 4397 pp. including index. Proceedings of eleventh international conference on photosynthesis, Budapest, Hungary, August 17-22, 1998. Kluwer Academic Publishers, Dordrecht – Boston – London 1998.

2001

12th International Congress on Photosynthesis was held in Brisbane, Australia, from August 18-23, 2001. Its proceedings are available only on CD entitled "PS2001 Proceedings" (ISBN: 0 643 06711 6). CSIRO Publishing, 150 Oxford Street (PO Box 1139), Collingwood VIC 3066, Australia (E-mail: publishing.sales@csiro.au; web site: www.publish.csiro.au) 2001.

Appendix 2. Editorial Board of volume 1, number 1-2 of *Photosynthetica* and table of content of this issue

Editor-in-Chief: I. Málek, Prague (Czechoslovakia)

Executive Editor: Z. Šesták, Prague (Czechoslovakia)

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Papers published in volume 1, number 1-2, 1967

S. Fousová, N. Avratovščuková: Hybrid vigour and photosynthetic rate of leaf disks in *Zea mays* L.

E. Bartošová, J. Koníček: The use of combustion calorimetry in the study of the metabolism of algae

L. Nátr, J. Gloser: Carbon dioxide absorption and dry weight increase in barley leaf segments

J. Neumann, M. Avron: A dual effect of atebriin on photoinduced changes in light-scattering of isolated chloroplasts

G. Meinel: Assimilationsvermögen als Sortenmerkmal. I. Vergleich der apparenten Assimilation von Kartoffelsorten verschiedener Reifezeit

P. Strebeyko: Rapid method for measuring photosynthetic rate using ¹⁴CO₂

Y. Mathieu: Sur l'isolement, en milieu aqueux, de chloroplastes "intacts" à partir de feuilles de plantules d'Orge

M. Czopek, W. Starzecki, J. Łagisz, H. Motyka: An automatic registrator as a supplement of an electronic integrator of photosynthetically active radiation and their adaptation to ecophysiological studies

A.H. Nagy, Á. Faludi-Dániel: On the nature of the binding forces stabilizing carotenoid-protein and chlorophyll-protein complexes *in vivo*

A. Mencáková: Genetic analysis of chlorophyll content in maize and tobacco

I. Šetlík, N. Avratovščuková, J. Křítek: An annular irradiation chamber for photosynthesis measurements in leaf disks

J. Nečas, J. Zrůst, E. Partyková: Determination of the leaf area of potato plants

C. Shimony, J. Spencer, Govindjee: Spectral characteristics of *Anacystis* particles

J. Květ, J. Svoboda, K. Fiala: A simple device for measuring leaf inclinations

J.L. Monteith: Climatological measurements

R.L. Specht: The photosynthesis of plant communities in relation to structure, physiology, and environment

J. Čatský, H. Metzner, Z. Šesták (ed.): Bibliography of review papers. Bibliography of methodological papers

Appendix 3. Editorial Board of volume 1, number 1 of Photosynthesis Research and table of content of this issue

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Papers published in volume 1, number 1, 1980

- B. Lagoutte, P. Setif, J. Duranton: Contributions to the structural characterization of eucaryotic PSI reaction centre I. Critical analysis of the polypeptide composition of different P700 enriched fractions
- P. Setif, S. Acker, B. Lagoutte, J. Duranton: Contributions to the structural characterization of eucaryotic PSI reaction centre II. Characterization of a highly purified photoactive SDS-CP1 complex
- H.K. Lichtenthaler, G. Burkhard, K.H. Grumbach, D. Meier: Physiological effects of photosystem II herbicides on the development of the photosynthetic apparatus
- Z. Kaminska, S. Maleszewski: The effects of O₂ and CO₂ concentration on photosynthesis and glycolate accumulation in bean leaves treated with α -hydroxy-2-pyridine-methanesulfonic acid (α -HPMS), the glycolate oxidase inhibitor
- R. Zerbe, A. Wild: The effect of kinetin on the photosynthetic apparatus of *Sinapis alba*