



# A Perspective on Chemistry and Society

A Column on the Occasion of the 75<sup>th</sup> Anniversary of CHIMIA

The History of CHIMIA

## The 75<sup>th</sup> Anniversary of CHIMIA

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**Gillian Harvey** completed her chemistry education in the UK (BSc, University of East Anglia; Norwich, PhD, University of Aberdeen). After a year on a Royal Society Fellowship at the Zentralinstitut für Anorganische Chemie, Akademie der Wissenschaften der DDR, Berlin, in 1986, she moved to the ETH as a post-doc in the Institute for Crystallography and Petrography (1986–1988) and then as

Oberassistentin at the Institute for Technical Chemistry (1989–1996). Since 2000, she has worked as the Technical Editor for CHIMIA and since 2019 she has also taken over the Chair of the Editorial Board.

CHIMIA was published for the first time in 1947 by the Schweizerischer Chemiker-Verband (SCHV). To celebrate the 75<sup>th</sup> volume of CHIMIA, the Swiss Chemical Society (SCS) and the Editorial Board are presenting, throughout 2021, opinion pieces by authors in science, industry, education, and society. To start this celebration, a history of CHIMIA from 1946 to the present day is given here.

Prof. Hans-Jürgen Hanssen (Professor and Director of the Organic Chemistry Institute, University of Zurich) wrote an Editorial<sup>[1]</sup> in issue 12/1995 on the eve of the 50th anniversary of CHIMIA. That Editorial covered the beginnings of CHIMIA and subsequent milestones during the first 50 years. The first part of this article is based on Hans-Jürgen Hanssen's Editorial.

### Beginnings and the first 25 Years

The Annual General Meeting of the Schweizerischer Chemiker-Verband (SCHV, Swiss Chemists' Association) on 19. October 1946 voted to publish a new journal with the name of CHIMIA to replace the *Schweizer Chemiker-Zeitung & Technik-Industrie*. In 1947, an Editorial Commission with representatives from academia and industry, under the lead of the President of the SCHV, PD Dr. Hermann Mohler, was called into action to supervise the publication of the new journal. The declared objectives of the new journal:<sup>[2]</sup> to aid in the training and further education of chemists, to inform them of scientific and technological advances, to inform on the economy, patent law, careers and politics, to publish scientific articles and reports, were ambitious and reflected the hope of new beginnings in the post-war era.

The articles in the first volume of CHIMIA (Fig. 1), which began with an article by Paul Karrer (Professor for Organic Chemistry, University of Zurich, Nobel Prize for Chemistry 1937, 1889–1971<sup>[3]</sup>). This article, 'Vitamine als Bausteine von Fermenten' – 'Vitamins as Building Blocks in Fermentation,<sup>[4]</sup> reflects the enthusiasm with which the new Editorial Commission went about its work and the willingness with which authors responded. Selected articles are:

- A report of the celebrations of the 80<sup>th</sup> birthday of Hans Rupel<sup>[5]</sup> (Professor of Organic Chemistry, University of Basel, 9.10.1866–12.1.1951),
- H. Pallmann and H. Deuel of the Agricultural Institute of ETH Zurich on the chemistry and physics of pectins,<sup>[6]</sup>
- C. Rubin, Schweizerische Sprengstoff AG, Liestal-Isleten, 'Über die Entwicklung von Chloratsprengstoffen' – 'Developments in Chlorate Explosives',<sup>[7]</sup>
- H. Mohler and P. Giger, Zurich Chemical Laboratory, 'Absorptionsspektroskopische Untersuchungen von Sonnenschutzmitteln' – 'Absorption Spectroscopy of Sun Protection Agents',<sup>[8]</sup>
- H. Deringer, Gaswerk Winterthur, 'Über ein Absorptionsmittel zur Auswaschung und Gewinnung von Kohlenoxyd aus Gasgemischen' – 'Absorbents for the Extraction and Recovery of Carbon Oxide from Gas Mixtures',<sup>[9]</sup>
- R. Haller, Reihen, a historical review of 'Die Färberei als wissenschaftliches Problem' – 'Dyeing as a Scientific Problem',<sup>[10]</sup>
- The lecture entitled 'Old Dyestuffs and New Textiles and New Dyestuffs and Old Textiles' given by H. E. Fierz-David, Organic Institute, ETH Zurich, at the 11<sup>th</sup> International Congress for Pure and Applied Chemistry, was reprinted in its entirety, in English,<sup>[11]</sup>
- Frey-Wyssling, Plant Physiology Institute, ETH Zurich, reported on the 'Feinbau des Zytoplasmas' – 'The Detailed Structure of the Cytoplasm',<sup>[12]</sup>
- E. P. Hauser, 'Andreas Siegmund Marggraf und zweihundert Jahre Rübenzucker' – 'Andreas Siegmund Marggraf and Two Hundred Years of Sugar Beet',<sup>[13]</sup>
- H. Mohler gave an extensive review of the University of Basel dissertation in political science by R. Baumgartner, 'Die wirtschaftliche Bedeutung der chemische Industrie in Basel' – 'The Economic Significance of the Chemical Industry in Basel',<sup>[14]</sup> a subject that, after 75 years, has lost none of its significance.

The range of different contributions in this first volume of CHIMIA, comprising 250 pages, is impressive and earns great respect. It also confirms the importance of the chemical industry to the chemical community. This is additionally reflected in the vast number of advertisements, the revenue from which would today go a long way to cover the production costs.

At the time, there was a second chemical society in Switzerland, Schweizerische Chemische Gesellschaft (Swiss Chemical Society SCG), which published *Helvetica Chimica Acta*. The driving force behind the decision to create a Swiss journal of chemistry in 1917 was Karl Friedrich Rudolf Fichter (1869–1952), Professor of Inorganic Chemistry at the University of Basel.<sup>[15]</sup> He was a native of Basel, and became known for having prepared beryllium for the first time in highly purified form, and especially for his fundamental work on organic electrochemistry. In his efforts to find what was to become *Helvetica Chimica Acta (HCA)*, he was actively supported by Philippe-Auguste Guye (1862–1922),<sup>[16]</sup> Professor of Physical Chemistry at the University of Geneva, who was president of the Swiss Chemical Society during 1917 and 1918. (the Swiss Chemical Society came into existence on August 6th, 1901, with Alfred Werner as its first president.) Before the creation of



Fig. 1. The cover of the first issue of CHIMIA in 1947.

*HCA*, Swiss chemists had to rely almost exclusively on foreign periodicals, mainly German and French, for the publication of their scientific results. Only the physical chemists had their own Swiss journal, the *Journal de Chimie Physique* founded in 1903 by Guye. In addition, the *Schweizerische Apothekerzeitung* and the *Mitteilungen aus dem Gebiet der Lebensmitteluntersuchung und Hygiene* accepted contributions from the specialists. For his efforts in creating *HCA*, Fichter was awarded the Paracelsus Medal by the Swiss Chemical Society in 1948. A detailed history of the first 75 years of *Helvetica Chimica Acta* can be found in ref. [17]. *HCA* is now published by Wiley-VHCA AG but the Swiss Chemical Society is still involved and it continues to be perceived as a Swiss journal of chemistry. CHIMIA was never intended to be a competition to *HCA*, which was reflected in the emphasis on review articles in CHIMIA compared to the original research articles in *HCA* and this complementary relationship has been maintained over the years.

A large number of very well-known chemists published review articles and lectures in CHIMIA. For example, in 1950, Thaddeus Reichstein (Professor of Organic Chemistry, University of Basel, 1897–1996) published in two parts the lecture he had held at the Schweizerische Naturforschende Gesellschaft on Sept. 9, 1949, on ‘Chemie der Nebennierenrinden-Hormone’ – ‘The Chemistry of the Adrenal Cortex Hormones’.<sup>[18]</sup> In the November issue of the same year there was a report of the award of the Nobel Prize in Physiology or Medicine to T. Reichstein, together with P. S. Hench and E. C. Kendall, for their discoveries relating to the hormones of the adrenal cortex, their structure and biological effects.<sup>[19]</sup>

In 1966, an extensive issue was devoted to a colloquium in honour of the 70th birthday of Prof. Robert Wizinger. The colloquium was on the subject of organic dyes and sponsored by Ciba, Geigy and Sandoz, reflecting the strong position of dye research and production in Switzerland at that time.<sup>[20]</sup>

An additional feature was introduced that proved to be very popular: ‘Kurze Mitteilungen’ or ‘Notes’, short contributions on experimental chemistry that could be submitted by the 20th of the previous month to be published in the following month’s issue.

The early years of CHIMIA also contained pages of information as a service to their readers and the members of the SChV, in-

cluding notifications of lectures, conferences, book reports, new Swiss patents, and other communications. One communication<sup>[21]</sup> contained a detailed description of emigration possibilities with very strong recommendations and warnings to, e.g. Australia, Belgian Congo, USA, Belgium, etc. This may appear strange to today’s readers but it reflects the awareness of the SChV of the yearning for wider horizons in the post-war period and thereby providing the necessary information as food for thought.

## 25 to 50 Years of CHIMIA

Hermann Mohler remained the chairman of the Editorial Commission of CHIMIA until 1953, followed by Prof. Hans Amman (1953–1955), Prof. Wilhelm Busser (1956–1959†), and Prof. Hans Nitschmann (1960–1984). In his review of ‘25 Jahre CHIMIA’ – ‘25 Years of CHIMIA’ (Fig. 2), the President of the SChV, Dr. Max Lüthi<sup>[22]</sup> (for whom the SCS Dr. Max Lüthi Award for outstanding degree theses completed in a chemistry department of a Swiss University of Applied Sciences was named) explained that the original objectives had been reassessed to move away from an association journal to a scientific one. Emphasis would be given, in the section ‘Wissenschaft – Forschung’ – ‘Science – Research’, to review articles as before, transcriptions of lectures given in Switzerland, and Notes. A new section: ‘Praxis – Technik – Industrie’ – ‘Practice – Technology – Industry’, for which Max Lüthi was directly responsible, was aimed at the practical chemist and the workers of other disciplines in the chemical industry. The continued large number of advertisements were considered a service to the reader. The commitment of the Swiss Chemical Industry to CHIMIA was reflected in the financial support given to the journal via the ‘Zeitschriftenfonds’ – ‘Publication Fund’, which continued until 1969. The years that followed showed that publishing a journal of CHIMIA’s format was becoming more and more difficult, not only with respect to the workload for the Editorial Commission to attract submissions but also with regard to the financial costs. The Schweizerische Chemische Gesellschaft (SCG, Swiss Chemical Society) as the publisher of *Helvetica Chimica Acta* was experiencing similar problems. For both journals, different options were tried: The SChV created a publishing company for CHIMIA which did not last more than



Fig. 2. Issue 1, 1971, of the 25th anniversary volume of CHIMIA.

a few years, while a full-time editor (Dr. M. Volkan Kisakürek) was appointed for *HCA* to lower print and distribution costs in collaboration with Verlag Birkhäuser AG.

1984 became the final year that CHIMIA was produced by the Editorial Commission, still led by Hans Nitschmann. The effort involved for the members of the commission became too much in addition to their professional activities and it was decided to employ a full-time editor from 1985. An Advisory Board, chaired by Prof. Dieter Seebach (ETHZ), was created to support the editor. In 1985 the new Editor, Dr. O. Smrekar, took up his new assignment and an Editorial in the first issue by Seebach described that the Advisory Board had been extended to include scientists from biosciences, material and engineering sciences with the intention to stimulate authors to submit their articles to CHIMIA and to identify possible subjects for special topic issues.<sup>[23]</sup>

Five years later, in 1990, the experiment with a full-time Editor was abandoned, CHIMIA was again redesigned and published by the Verlag Helvetica Chimica Acta, and the two societies, SchV and SCG began a process of amalgamation to form the 'Neue Schweizerische Chemische Gesellschaft' (official foundation 14. Feb 1992, renamed the Swiss Chemical Society in 2001). Prof. Camille Ganter (Organic Chemistry Institute, ETHZ) was appointed as Editor-in-Chief, responsible for the content and Dr Kisakürek took over the technical editing together with that of *HCA*. The reorganisation resulted in an improvement of the financial situation for CHIMIA, which was declared to be both a scientific journal in the chemical sciences and the official society journal of the NSCG.

In 1994, the appointment of a newly created new Editorial Board, an Advisory Board with representatives of the four sections of the NSCG, and new CHIMIA regulations secured the publication of CHIMIA in its new form for the foreseeable future. Already at this time there was a tendency to thematic issues, often based on international conferences that had taken place in Switzerland. Camille Ganter took this idea and developed it to become the main scientific content of the journal: thematic issues on subjects of current interest to the chemical community in Switzerland. At the same time, individual articles on a range of chemistry subjects and from the 'Ingenieur Schulen', later the Fachhochschulen or Universities of Applied Sciences, and often opinion pieces on matters of interest for chemists were published. Most articles up to this point were published in German, with fewer in French and English. Authors were generally based in Switzerland with the exception of transcriptions of lectures by international scientists held at conferences in Switzerland.

Also in 1994, the Verlag Helvetica Chimica Acta AG was founded by the NSCG, with the Society holding 54% of the shares with two partners Birkhäuser + GBC AG and VCH Verlagsgesellschaft mbH Holding, Weinheim (24% each), to cover all publishing activities (*HCA*, CHIMIA and books). In 1999, the NSCG sold its shares in the company to Wiley-VCH whilst retaining the rights to the name *Helvetica Chimica Acta*. By the end of 1999 it became clear that Wiley-VCH would no longer undertake the technical editing of CHIMIA and a Technical Editor was employed.

Looking back over the first 50 years of CHIMIA, the support it enjoyed from professors from the Swiss universities can be seen from the large number of excellent review articles. What is fascinating is the number of articles, commentaries and communications that give an insight into the wider societal history of Switzerland. The emigration information for Swiss chemists has been mentioned above. In 1981, Prof. H. Zollinger, wrote an essay on 'Logik, Psychologie und Zufall in der Entwicklung wissenschaftlicher Erkenntnisse' – 'Logic, Psychology and Chance in the Development of Scientific Knowledge', encouraging the reader to expand their thinking far beyond the mere reporting of experimental results.<sup>[24]</sup> In 1985, after a Federal popular initiative

to ban vivisection (animal testing) had been decisively rejected, Prof. G. Patzig wrote an commentary on 'Ethische Aspekte von Tierversuche' – 'Ethical Aspects of Animal Testing', appealing for a return to a rational and ethical discussion of animal testing, away from the aggression and emotional initiative campaigns of both camps.<sup>[25]</sup> In 1986, just a few weeks after the fire at a Sandoz storage facility in Schweizerhalle caused widespread air pollution and devastating ecological damage to the Rhine from the runoff of the water used to extinguish the fire, Dr. Bruno Böhler, Director of the Bundesamt für Umweltschutz (Federal Office for the Environment), wrote an Editorial Commentary 'Umweltkatastrophen – Lehren ziehen' – 'Learning from Environmental Catastrophes' in which he argues strongly for the need for a higher valuation of human life and the environment over the needs of the economy: "Wir haben uns viel zu wenig Rechenschaft darüber gegeben, dass wir bezogen auf die Umwelt auf Pump leben, und dass wir vom Umweltkapital kommender Generationen zehren." "We have held ourselves far too little accountable for the fact that we have been living off the environment at the cost of future generations." He had held a lecture at that year's Annual General Meeting of the Schweizerische Gesellschaft für Chemische Industrie (Swiss Society of the Chemical Industry) in June where he had been optimistic that the Federal environmental laws were fit for purpose, a view that he acknowledges in his commentary, had received quite a blow.<sup>[26]</sup>

### 50<sup>th</sup> Anniversary

In 1996, the 50<sup>th</sup> anniversary of CHIMIA was celebrated by a series of leading articles by invited authors on scientific, industrial, technological, environmental, political and economic aspects. Alexander von Zelewsky, President of the NSCG, addressed the importance of chemistry in society. CHIMIA was described as fulfilling a triple function:<sup>[27]</sup>

- 1) Official publication channel of the NSCS, sections and member societies;
- 2) Information to all NSCS members and a wider chemical public (300 subscribers in 1996);
- 3) Scientific articles on scientific and industrial developments (Fig. 3).



Fig. 3. The 50<sup>th</sup> anniversary cover of CHIMIA.

## The past 25 Years

In 1997, the New Swiss Chemical Society went online for the first time. All CHIMIA scientific articles, backdated to 1990, are online (presently at *Ingentaconnect.com*) and are open access.

Camille Ganter remained the driving force behind CHIMIA for many years and his influence is reflected in the structure of the journal to this day. He was responsible for producing 16 years of content in CHIMIA before retiring as Editor-in-Chief in 2006 and becoming chairman of the Editorial Board until 2009. He was also responsible for the finances and the general running of the journal. He introduced recurring issues dedicated to New Professors, Hot Topics, SCS Prizewinners (issue 4, containing articles by the Junior Laureates of the previous year's Fall Meeting, was introduced in 2004) and ensured that the thematic issues covered areas of current interest and significance to Swiss chemistry.

Special topic issues featuring 'classical' chemistry subjects such as analytical chemistry, organic chemistry, physical chemistry and computational chemistry were published many times, but also related disciplines like biotechnology, food science, material science, environmental sciences appeared at an ever-increasing rate. Topics have evolved over the years to reflect the increasingly interdisciplinary nature of the chemical sciences.

printers.<sup>[37]</sup> This issue was followed in 2001 by Conservation of Cultural Heritage.<sup>[38]</sup> Other issues covered areas that held particular significance at the time: 'Intellectual Property',<sup>[39]</sup> 'Analytical Chemistry at Forensic Institutes',<sup>[40]</sup> covered doping controls, and 'REACH: Registration, Evaluation, and Authorization of Chemicals',<sup>[41]</sup> described in detail the consequences arising from the planned EU new chemicals legislation, which came into force in June, 2007.

The Swiss National Science Foundation (SNSF) projects National Centres of Competence in Research (NCCR) and Swiss Competence Centres (SCCER) in the chemical sciences have also been featured regularly in CHIMIA, giving the project leaders the opportunity to present the range and progress of the research: NCCR MUST,<sup>[42]</sup> NCCR Chemical Biology,<sup>[43]</sup> SCCER BIOSWEET,<sup>[44]</sup> SCCER Heat Energy Storage,<sup>[45]</sup> NCCR Molecular Science Engineering,<sup>[46]</sup> NCCR Bio-Inspired Materials,<sup>[47]</sup> and NCCR RNA & Disease.<sup>[48]</sup>

Women authors were increasingly represented in the articles, and also, with time, as professors and senior scientists but the first issue to contain articles exclusively with women group leaders was published very recently in 2020, 'Innovative Tools in Organic / Organometallic Chemistry' guest edited by Prof. Cristina Nevado.<sup>[49]</sup>

By 2006, it was recognised that the many tasks undertaken by Camille Ganter were too much for one person and new roles on the Editorial Board were created. The Editor-in-Chief is responsible for the scientific content and thematic issues are organised by Swiss University professors (Philippe Renaud, University of Bern, 2006–2010; Jerome Lacour, University of Geneva, 2011–2013; Paul Dyson, EPFL, 2014–2017; E. Peter Kündig, University of Geneva 2018–2020; Catherine Housecroft, University of Basel 2021). The thematic issues are collated by guest editors who invite authors to submit their review articles. Roland Kunz, University of Zurich, took over the role as Chairman of the Editorial Board and Associate editor and was instrumental in guiding CHIMIA's development from 2003 to 2018. Each new Editor-in-Chief brought and continues to bring his or her own expertise and professional interests to the role. The other roles on the Editorial Board: Chairperson, Managing Editor, Associate Editor, News Editor, Technical Editor, Treasurer, Web Editor, Swiss Science Concentrates Editor, Advisory Board contact, Universities of Applied Sciences contact, have developed over the years and reflect the large amount of work that is necessary to produce a quality scientific journal ten times a year. The only employed (part-time) person is the Technical Editor, the other EB members work as volunteers or receive a small honorarium. The Managing Director of SCS (currently David Spichiger) is also a member of the EB and contributes in particular to the Community pages and the CHIMIA Report.

In 2020, the journal became a platinum open access journal (no page charges to author and free to the reader, under license CC BY, copyright retained by the author) as a proactive move to the widespread recognition of open science. Over previous years, the number of external subscribers had been falling steadily, reflecting the difficulty of a small independent publisher to maintain subscribers in the face of the large publishing houses offering journal packages. For the past 15 years, advertising revenue also became increasingly difficult to access in the print media in general, which also reduced the overall income for CHIMIA. The review articles in CHIMIA present the research that is being undertaken in Swiss Institutions funded by the public purse and therefore should be accessible to all who are interested. It was also acknowledged that the main resource of CHIMIA are the contributing authors and guest editors, who, it is hoped, would be more willing to write for an open access journal. Therefore, the SCS agreed to take over the full costs of producing CHIMIA, financed mainly through the membership fees. The print version



Fig. 4. Front cover of issue 10, 2016, 'Malaria Vector Control' as an example of the excellent cover pictures provided by the guest editors: in this case Paul Dyson and Peter Maiefisch.

Industry continued to be strongly featured with issues such as '100 Years of Progress with Lonza',<sup>[28]</sup> 'The First 100 Years of the Roche Group',<sup>[29]</sup> 'Safety and Environmental Protection in Chemistry',<sup>[30]</sup> 'Bauchemie' – 'Chemistry for Construction',<sup>[31]</sup> 'Outsourcing',<sup>[32]</sup> 'Industrielle Produktion mit Hochreaktiven Stoffen' – 'Industrial Production with Highly Reactive Materials',<sup>[33]</sup> 'Fluorine in the Life Science Industry',<sup>[34]</sup> 'Quality Aspects in Industrial Chemistry',<sup>[35]</sup>

Other topics were presented for a general readership: 'Art and Chemical Sciences',<sup>[36]</sup> including 'Arts and Sciences. A Personal Perspective of Tibetan Painting', by Prof. Richard Ernst (Nobel Prize for Chemistry, 1991), which contained wonderful colour photos of the artworks that presented quite a challenge to the



Fig. 5. Issue 11, 2020, showing the new cover design of CHIMIA.

continues to be produced and is distributed to the SCS membership.

### Current Role of CHIMIA

As the society journal of the Swiss Chemical Society, CHIMIA will continue to represent and inform the wider chemistry community in Switzerland: in academia, industry, education.

The Swiss Chemical Society is seeking to evolve and grow and expand its contacts to related scientific fields: Chemistry and the Environment, Material Chemistry, Flow Chemistry, AI/ Computational Chemistry, *etc.* Where possible the activities of the Society are reflected in the content of CHIMIA, *e.g.* Green and Sustainable Chemistry issue<sup>[50]</sup> coincided with the same topic at the SCS Forum at ILMAC, or Chemistry and the Environment issue<sup>[51]</sup> to mark the launch of the new SCS section Chemistry and the Environment and the Spring Meeting in 2021 on the same subject. All divisions have the right to produce short columns featuring innovations in their fields.

Information for the SCS membership is included in the Community News and Events sections.

The layout and front cover design of CHIMIA has been updated over the past two years. The cover retains the CHIMIA font and therefore is still recognisable, but without the previously used 'Saarland green' (Fig. 5).

In the immediate future, the plan is to host the journal entirely on one online platform, which is scheduled to be completed in mid-2021. This will enable one-stop access from submission through to online publication and all articles, columns and information will be visible and directly available for download. This is made possible by the move to open access in 2020, and the objective is to improve the visibility of CHIMIA online, far beyond the borders of Switzerland. CHIMIA is listed in the most important databases: Current Contents/Physical, Chemical and Earth Sciences, Chemical Abstracts, Science Citation Index, Research Alert, Scisearch, Index Chemicus, Chemistry Citation

Index, Current Chemical Reactions, Reaction Citation Index, Biological Abstracts, and the Directory of Open Access Journals.

The Swiss Chemical Society and the Editorial Board are working to ensure that CHIMIA will continue to thrive and evolve to its 100th anniversary and beyond. For this to happen, we can quote the words of Hans-Jürgen Hanssen, in the conclusion of his Editorial in 1995: "Let us not forget that the publication of CHIMIA can only succeed as a society effort of the NSCG (now SCS) and its members and a willing pool of authors from all parts of Switzerland. For CHIMIA, let us wish for the coming 50 years, wise, forward-looking Presidents of the Society, intelligent, well-informed authors, and a supportive readership".<sup>[1]</sup>

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