

125 Years “Monatshefte für Chemie/ Chemical Monthly”

Gerhard W. Pohl* and Werner Soukup

This year the 125th anniversary of the most important chemical journal of Austria can be celebrated. On January 8th, 1880 in a session of the Imperial Academy of Sciences in Vienna, the full member *Ludwig Barth von Barthenau* (1839–1890) proposed to edit papers of the sections Chemistry and Physics presented at sessions of the mathematical-scientific class in an Austrian journal [1]. He supported his proposal by the urgency to publish submitted papers more quickly and to promote their distribution [2]. A committee was selected to give an expert opinion. Its members were *Josef Stefan* (1835–1893), secretary of the mathematical-scientific class of the academy and the professors *von Lang*, *Loschmidt*, and *von Hauer*. The commission in the session of January 22nd, 1880 recommended to accept the proposal and suggested the title “Monatshefte für Chemie und verwandte Theile anderer Wissenschaften” (Monthly notes for chemistry and related parts of other sciences) [3]. This was accepted and the first issue of the first volume “Monatshefte für Chemie, Jahrgang 1880” appeared at the beginning of the year 1881. Thus, Monatshefte/Chemical Monthly is one of the oldest chemical journals of the world still existing.

The main supporters of this enterprise were the chemists *Ludwig Barth* and *Adolf Lieben* [4] and their friends *Josef Loschmidt* (1821–1895) and *Victor von Lang* (1838–1921). *Barth*, whose research mainly concerned aromatic compounds and *Lieben*, who was mainly concerned with aliphatic compounds dominated the new journal. From 66 papers of the first volume 41% came from their laboratories, about two thirds of it from *Barth*'s I. Chemical Institute and one third from *Lieben*'s II. Chemical Institute. Later on *Lieben*'s II. Institute took the lead.

Barth published his papers on the structure of various natural compounds together with *Guido Goldschmiedt*, *Michael Kretschy*, *Josef Herzig*, and *Hugo Weidel*. When *Barth* died at the age of 52 years in 1890, in volume 11 of “Monatshefte” an obituary appeared. This showed the importance of *Barth* for the journal, which never published anything about its editors and authors before. After *Barth*'s death, *Weidel* (1849–1899) and after *Weidel*'s death in 1899, *Herzig* (1853–1924) contributed a large number of papers to the “Monatshefte”. For instance, *Herzig* published 25 papers between 1890 and 1901.

* Corresponding author. E-mail: g.pohl@aon.at

Adolf Lieben (1836–1914) with *Barth* the second founder of “*Monatshefte*” came to Vienna in 1875 after positions in Palermo, Turin, and Prague [5]. To become a professor in the Hapsburg monarchy was only possible for a Jew after 1868. His main scientific accomplishment was to synthesize a complete homologous series of aliphatic acids from one to seven carbon-atoms. He and his pupils and assistants published a large number of articles in “*Monatshefte*”. As an example, the famous papers on the synthesis of quinoline by *Zdenko Hans Skraup* (1850–1910) appeared in the first two volumes of “*Monatshefte*” [6]. *Skraup* in 1906 followed his teacher *Lieben* as head of the II. Chemical Institute of the Vienna University, but unfortunately died in 1910 before *Lieben*. With *Simon Zeisel* (1854–1933) *Lieben* published a series of papers about aldehydes between 1879 and 1886 [7]. *Moritz Kohn* (1878–1955) another pupil of *Lieben* published 59 papers between 1910 and 1931. *Kohn* was forced to emigrate in 1938. The most important pupil of *Lieben* was *Carl Auer von Welsbach* (1858–1929), who started his studies under *Lieben* in 1878 and later accomplished his thesis under *Robert Bunsen* in Heidelberg. *Auer* used spectral analysis to discover four new elements. Two of them were named according to his suggestion neodym and praseodym. *Auer*’s first papers on that matter appeared in “*Monatshefte*” 1883 and 1884.

In the beginning “*Monatshefte*” were printed in an edition of 300 copies. Due to its success a commission (*Adolf Lieben*, *Ludwig Barth*, *Josef Loschmidt*, and *Eduard Suess*) decided on November 26th, 1885 to increase the number of copies to 400. Also the earlier volumes had to be reprinted. An example of the high interest in these reprints is a letter of *Lothar Meyer* (1830–1890) with *Mendelejew* the discoverer of the Periodic Table of Elements, who ordered a reprint of the first volume in 1889.

In 1902 three members of the Imperial Academy, *Adolf Lieben*, *Zdenko Hans Skraup*, and *Guido Goldschmiedt* (1850–1915), wrote a long letter to the Academy. Besides other things they complained about the long periods between submission and printing of papers for “*Monatshefte*”. Some authors had to wait even more than 200 days, which makes their contributions out of date when they appear. Complaints about long publication times can be found in the correspondence of the academy until 1936. In recent years this has been improved substantially, and in particular online-publications (Online First) by the Springer-publisher now appear very fast.

Around the end of the 19th and beginning of the 20th century more physico-chemical papers appeared in “*Monatshefte*”. The main authors were *Rudolf Wegscheider* (1859–1935) in Vienna, *Robert Kremann* (1879–1937) in Graz, and *Caesar Pomeranz* (1860–1926) in Prague. Several very important papers laying the chemical basis of photography were published in “*Monatshefte*” by *Josef Maria Eder* (1855–1944) and *Eduard Valenta* (1857–1937) [6]. *Georg Vortmann* (1854–1932), 1887/88 an assistant of *Barth* had contributed a paper to the first volume of “*Monatshefte*” and later published on methods of inorganic analytical chemistry nearly in each volume.

Browsing through the old volumes it becomes evident what vanished at the end of the Hapsburg Monarchy. Assistants and professors from Brno, Prague, Cracow, and Tscherniwzi (Czernowitz) rivaled those from Vienna, Graz, and Innsbruck to be present in the “*Monatshefte*”. Also research from outside the universities was

accepted. Collaborations between universities and higher schools from different parts of the monarchy are documented.

The Time Between the World Wars and Under the National Socialist Regime

After World War I the “Monatshefte” faced great problems. Comparing volume 34 (1913) with volume 40 (1919) we see that the content decreased from 2178 to 491 pages. The contributions from Prague and Tscherniwzi in volume 34 numbered 15, for volume 40 only two contributions from Brno were submitted. Also the number of foreign institutions and editors of journals who were subscribers to “Monatshefte” decreased at the end of 1927 to only 23. In 1928 *Moritz Kohn* suggested to add a summary to all papers and to publish biographies and obituaries regularly. To increase the speed of publication the publisher was changed from *Hölder-Pichler-Tempsky* in Vienna to *Akademische Verlagsanstalt* in Leipzig in 1928. In 1929 a double-volume (No. 53 and 54) was dedicated to *Rudolf Wegscheiders* 70th birthday. Interestingly enough, there exist two versions of this publication, the “Monatshefte” –version edited by the “Akademische Verlagsanstalt Leipzig” containing the appraisal for *Wegscheider* written by *Emil Abel* (1875–1958) and the “Sitzungsberichte” (Proceedings of the Imperial Academy) still edited by *Hölder-Pichler-Tempsky* in Vienna without this appraisal, but otherwise identical contents.

After *Wegscheiders* retirement in 1931, *Hermann Mark* (1895–1992) became head of the I. Chemical Institute. He was elected into the editor’s team in 1934. In 1936 the physicist *Egon Schweidler* (1873–1948), the secretary general of the Austrian Academy of Sciences, wrote a letter of thanks to the founders of the “Akademische Verlagsanstalt Leipzig” Dr. *Leo Jolowicz* and *Kurz Jacoby*. He emphasized their being ready to sacrifice financial loss for the “Monatshefte”. In 1938 the Viennese Academy asked the stock-association of German booksellers if the “Verlagsanstalt” was an Aryan enterprise and the answer was “no”. In 1939 the “Verlagsanstalt” was supposed to become Aryanized.

Late in 1938 Dr. *Richard Weiss*, who had been an assistant at the I. Chemical Institute from 1929 to 1938 sent a letter from Istanbul [7] asking if he should continue to write the general table of contents for the “Monatshefte”, what he had done from volumes 68 through 72. The Academy decided that *Friedrich Galinovsky* from *Ernst Späth*’s team should write the table of contents, apparently using the plan of *R. Weiss*. A Jew’s name was not mentioned in the edition, but the publisher got the advice to pay *Weiss* and *Galinovsky* for the amount of their work in a relation 4:1. If *Weiss* ever received the payment is unknown. He probably went from Istanbul to England where his trace vanished.

In 1938 *Emil Abel* and *Hermann Mark* were removed from the editorial team. *Friedrich Wessely* (1897–1967) became editor during the years of World War II. When the American Chemical Society complained in 1940 that the “Monatshefte” are missing for the edition of “Chemical Abstracts”, Dr. *W. Oberhammer* from the Austrian Academy charged the “Verlagsanstalt” to send the missing copies to the USA via Siberia as long as it is possible “for the sake of political propaganda” (the letter is finished with the usual “Heil Hitler”).

The war caused severe damage to the “Monatshefte”. In 1943 the number of papers granted by the governmental offices was reduced to half the necessary

amount. *Ernst Späth* could prevent “Monatshefte” to be integrated into “Berichte des Vereins Deutscher Chemiker” or „*Justus Liebig’s Annalen*“. Therefore the volume 1944 is extremely thin and the volume of 1945 is missing. The reason for this is, that in 1944 the “Monatshefte” and the “Sitzungsberichte der Akademie” (Proceedings of the Academy of Sciences IIb) were aborted by the German government. In October 1944 a set of manuscripts ready for printing were destroyed during an air-raid in the printing house *Gottlieb Gistel* in Vienna.

The Postwar-Period

In July 1945 the contract made with “Akademische Verlagsanstalt” in 1928 was replaced by a contract with the Austrian Springer-publisher. The first volume after the war appeared in 1946. *Ludwig Ebert* (1894–1956) in May 1949 reported on the development of the “Monatshefte”:

In 1948 75 papers and 15 short communications had been submitted. The average length of the papers was 8 pages. The average publication time was 9 months. For a journal in “sharp international competition” *Ebert* wrote, this was much too long. The number of subscribers was only 400, within Austria 177 and abroad 233 (78 went into the USA, 66 into the United Kingdom, 27 to Germany, 11 both to Switzerland and the Netherlands). In *Ebert’s* opinion selling about 800 to 1000 copies would have been appropriate. According to his judgment the main reason for the low number of subscribers was the exceptional high price. He wrote (translated quote): *The “Monatshefte” enjoy the dubious fame to be the by far most expensive scientific chemical journal of the world.*

At the end of 1953 the “Sitzungsberichte” (Proceedings of the Academy of Science, sect. IIb) were stopped and only the “Monatshefte” were printed from now on. A positive effect probably resulted from the introduction of an English summary. In 1964 (volume 95) the Springer-publisher distributed 847 copies (248 went to the USA, 170 to the Federal Republic Germany, 61 to the United Kingdom, and 49 to Japan) [8].

In his last report to the commission for the “Monatshefte” *Fritz Wessely* disclosed that vol. 98 (1967) had 2436 pages and was the most extensive one in the history of the journal. So in the late 60s the size of the volumes of the time before World War I had been reached. All in all, 274 papers were published, 59 of them (22%) from Vienna University, 47 from the Technical University Vienna, 28 from the University of Graz, 11 from the Technical University Graz, 3 from the University of Innsbruck, 3 from the Mining University Leoben, and 5 from other Austrian laboratories. In addition, 118 papers were submitted from abroad, 46 from the BRD (Federal Republic Germany), 5 from the DDR (Democratic Republic Germany), 15 from Bulgaria, 14 from the CSSR, 8 from Jugoslavia, and 5 from Poland. From other European countries came 11 papers, thus 7 from India and 5 from the USA. The rest of the papers came from Austrian authors abroad and from overseas-countries. Summing up according to fields of work, 126 contributions belong to Organic Chemistry, 56 to Physical Chemistry, 47 to Inorganic Chemistry, 24 to Structural Chemistry, 13 to Theoretical Chemistry, and 8 to Biochemistry.

Judging from the viewpoint of history of chemistry the following volumes are highly interesting: volume 77 (1947) planned in honour of *Ernst Späth* but after his

unexpected death containing his obituary, volume 88 (1957) with the obituary for *Ludwig Ebert* and volume 89 (1958) with the obituary for *Gustav F. Hüttig* (1890–1957).

It's largely owing to *Ebert* as a longtime editor that “Monatshefte” remained a representative Austrian journal. He made the contract with Springer-publisher in 1954, which made the Association of Austrian Chemists (today Austrian Chemical Society) a partner of the Academy of Sciences. Since 1954 until today the Academy of Sciences and the Austrian Chemical Society are together editors of “Monatshefte”. In November 1957 *Friedrich Kuffner* was appointed “Schriftleiter” (similar function as managing editor).

In 1980 *F. Kuffner* published a paper „100 Jahre Monatshefte für Chemie – ein Rückblick“ (100 Years Chemical Monthly – a Retrospect) together with *W. Oberhummer* from the Austrian Academy of Sciences [9]. There he mentioned the editorial board: *E. Hayek*, *O. Kratky*, *H. Novotny*, *H. Tuppy*, and *U. Schmidt* (he followed *F. Wessely* who deceased in 1967). The advisory board consisted of 11 persons. There was no change of these teams until 1977. In 1978 the editorial board consisted of *E. Hengge*, *H. Novotny*, *K. Schlögl* (managing editor), *U. Schmidt*, and *H. Tuppy*. The advisory board was enlarged to 31 persons (several working outside of Austria). *O. Hofer* became editorial assistant. Until 1981 the advisory board increased to 34 persons, and peer refereeing of the submitted manuscripts was introduced.

In 1982 the managing editor *K. Schlögl* wrote in an Editorial [10]: *The editors and publishers have endeavoured, particularly during the last few years, to make the “Monatshefte für Chemie”, which celebrated their 100th anniversary in 1980, into as broad a forum as possible for native and foreign scientists working in all fields of chemistry.* An international advisory board was set up, a referee system introduced, and in 1981 the journal started appearing monthly, which meant that not only was the name “Monatshefte” taken more into account, but also that the publication deadlines were further shortened. In addition, contributions in English were accepted alongside those in German, with the result that already in 1980, the number of contributions appearing in English language was considerable. Continuing this trend, it has been decided that from volume 113 (1982), the “Monatshefte für Chemie” will be given the subtitle “Chemical Monthly”.

In 1983 a change in the editorial board occurred: *A. Neckel* followed *H. Novotny*. Also the advisory board changed: seven new members replaced five elder members. The board now consisted of 36 members. Again in 1986 some members of the advisory board were changed, but the number of members remained 36. In 1990 the Editorial Board had six members: *H. Falk*, *E. Hengge*, *A. Neckel*, *K. Schlögl* (managing editor), *P. Schuster*, and *H. Tuppy*. To improve the international contacts five regional editors were adopted, two from the Federal Republic of Germany, one from the German Democratic Republic, one from the USA, and one from Japan. In his Editorial the managing editor *Karl Schlögl* wrote: *May I finish by mentioning that hand in hand with aiming at a broader horizon goes the request for English to be the language of publications so that as wide a public as possible may be reached.* Some of the members of the advisory board were exchanged in 1990, the board had 29 members then and 28 in 1993. In 1994 because the German Democratic Republic had vanished its regional editor ceased

to contribute. Major changes in the advisory board occurred in that year leaving the board with 25 members. *H. Kalchhauser* became editorial assistant. In 1997 after the death of *E. Hengge* there remained five editors. The advisory board now had 23 members. In 1998 *H. Falk* became managing editor, his colleagues in the editorial board were *H. Gamsjäger*, *B. Kräutler*, *H. Ruis*, *U. Schubert*, and *P. Schuster*. The advisory board had 25 members and increased to 28 in the year 2000. In 2000 the regional editor for Japan, *Ryoji Noyori* (Nagoya University) left the advisory team after serving about ten years. This should be mentioned because the polymer chemist *Noyori* (born 1938) received the *Nobel* prize for Chemistry in 2001 for the development of catalytic asymmetric synthesis. Two other *Nobel* prize winners had been members of the Advisory Board for many years: *Otto Ernst Fischer* (1978 to 1997, born 1918, Nobel prize 1973 for his work on organometallic, so-called sandwich compounds) and *Alan MacDiarmid* (1978 to 1986, born 1927, Nobel prize 2000 for the discovery and development of conducting polymers). These facts indicate that “Chemical Monthly” is highly respected by outstanding scientists. In 2001 due to the unexpected death of *H. Ruis* the editorial board decreased to five members. In 2002 *F. Pittner* took over the sixth editor’s place. The editorial board has not changed until 2005. The regional editors were only three in 2000. In 2001 regional editors were engaged for Japan again and for France. In 2003 in addition regional editors were recruited for Australia and Switzerland. Since

Table 1. Changes in the editorial teams between 1970 and 2005

Year	Editorial board Number of members All from Austria	Advisory board Number of members from Austria	Advisory Board Number of members from abroad	Regional Editors All from abroad
1970	5	11	–	–
1977	5	10	–	–
1978	5	13	18	–
1979	5	14	18	–
1981	5	15	19	–
1983	5	17	19	–
1986	5	18	18	–
1987	5	17	19	–
1990	6	16	13	5
1993	6	15	13	5
1994	6	17	8	4
1995	6	18	8	4
1997	5	20	3	4
1998	6	20	5	4
1999	6	23	5	4
2000	6	23	5	3
2001	5	22	3	5
2002	6	20	3	5
2003	6	20	3	6
2004	6	20	3	6
2005	6	20	3	6

2003 *P. Gärtner* is editorial assistant. The advisory board had 25 members in 2001 and 23 members from 2002 to 2005. The variations in the editorial teams can be best followed from Table 1.

Many changes are due to retirement or death of the members. A few members also left the teams for other reasons. But some conclusions may be drawn from Table 1. Regional editors have certainly been installed to make it easier for scientists outside of Austria to submit their papers to "Chemical Monthly". As will be seen in the following sections submissions from abroad increased indeed after this editorial change.

Size of Volumes, Numbers of Pages and Articles, Languages, and Subjects

Between 1988 and 1989 the publisher changed the format from approximately 22×15 cm to 28×21 cm. Therefore the number of pages decreased, as can be seen from Table 2. It contained around 1450 small pages between 1977 and 1988. For some years about 1200 large pages followed, but from 1999 on it levelled off at about 1600 pages.

For some selected years it is shown in Table 3, how the number of articles submitted from Austrian universities and the number of papers written in German

Table 2. Number of pages and size of volumes

Small size of the volumes											
Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	
Pages	1873	1897	1736	1695	1404	1566	1512	1496	1487	1473	
Year	1980	1981	1982	1983	1984	1985	1986	1987	1988		
Pages	1440	1461	1476	1411	1470	1462	1463	1426	1444		
Large size of the volumes											
Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Pages	1188	1057	1110	1225	1227	1446	1400	1308	1300	1334	1517
Year	2000		2001		2002		2003		2004		
Pages	1382		1561		1612		1658		1568		

Table 3. Number of articles per volume, countries of origin, and language (for selected volumes)

	1970	1971	1980	1990	2000	2004
Number of pages	1873	1897	1440	1057	1382	1568
Number of articles	223	222	145	138	178	149
Submitted from Austria	141	136	66 ^a	47	26	21 ^b
from foreign countries	82	86	90 ^a	91	152	152 ^b
Number of foreign countries	16	20	18	20	32	31
Written in German	223	222	62	48	3	0
Written in English	0	0	83 (57%)	90 (65%)	175 (98%)	149

^a 11 articles were submitted in collaboration of 2 countries, and have been counted twice; ^b 22 articles were submitted in collaboration of 2 or 3 countries and have been counted 2 or 3 times

changed after papers written in English were accepted around 1980. In this year the first papers from Austrian Institutes (Institute of Physical Chemistry, Vienna University) written in English appeared.

The highest number of foreign contributions came from Germany and Bulgaria in 1970 and 1971. From 1980 to 2000 Germany, Poland, India, Egypt, and the USA contributed most. In 2004 the highest number of foreign contributions came from Germany, Iran, Egypt, and India. One reason may be that English had become the main publishing language. It is interesting to note that the number of contributions from Bulgaria decreased from 20 in 1970 continually to 1 in 2004. A large number of other countries also made contributions: Australia, Canada, China, Croatia, Czech Republic, France, Greece, Hungary, Italy, Japan, Jugoslavia, Korea, Mexico, Netherlands, Norway, Portugal, Rumania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. Even some exotic countries, like the Arabic Emirates, Ethiopia, Gaza, Morocco, Pakistan, Qatar, Thailand, Tunisia, and Venezuela contributed papers to "Chemical Monthly". About 70% of the published papers had a length between three and ten pages; about 20% were up to 15 pages long, only 10% of the papers contained up to 20 pages. About 2% of the papers, in most cases invited reviews, exceeded 20 pages.

In the years 1980 and 2000 the average time between submission of a manuscript and its acceptance was about 40 days (with few exceptions). About 20% of the papers were accepted within two weeks.

Starting with issue No. 3, 2003 (Volume 134) the contributions were printed together with a graphical abstract. This makes it easier for the reader to imagine what the papers are dealing with. Since it has been more and more difficult to classify papers into various branches of chemistry the former classifications into sub-disciplines have been dropped. In a preface to a special issue dedicated to the International Conference on Organometallic Chemistry held in Vienna in 1985, the managing editor *Karl Schlögl* wrote: *From the beginning of chemistry as an exact (natural) science – almost 200 years ago – there was a more or less distinct differentiation between its various branches such as organic, inorganic, physical, analytical, or biochemistry. With the increasing insight into the connections and governing laws it soon became obvious, however, that such a clear separation could be regarded as more or less obsolete; within almost any field of chemical research one has to deal with most of the branches mentioned. Especially organic and inorganic chemistry are significant examples for this statement, overlapping considerably within the important field of organometallic chemistry.*

In recent years "Chemical Monthly" often invites guest editors to edit special issues. Examples are the issue on Organometallic Chemistry just mentioned, the issue on Biocatalysis edited by *Herfried Griengl*, the issue on the workshop COST (European Cooperation in the field of Scientific and Technical research) held in 2000, edited by *Werner J. Blau*, *Panagiotis Lianos*, and *Ulrich Schubert* and the most recent special issues on Exciton Chirality: Fundamentals and Frontiers, edited by *David A Lightner*, The Nature of the Chemical Bond Revisited, edited by *Wolfgang Linert*, and 100 Years Research on Carnitine, edited by *Fritz Pittner*, *Alfred Lohninger*, and *Gisela Pittner*. With a rejection rate presently of about 70% the journal now successfully strives to enhance quality in publishing papers in all areas of chemistry.

It has been shown above that “Chemical Monthly” becomes more and more international, and less and less papers coming from Austrian universities are published in this journal. On the other hand an increasing number of Austrian chemists have become members of the advisory board. This seems to be mainly due to the politics of the editing societies (Austrian Academy of Sciences and Austrian Chemical Society) and the immediate neighbourhood of those to Springer Austria.

When asking an American chemist why he is publishing in “Chemical Monthly” he wrote (private communication): *The short answer to why we published in Monatshefte is MONEY. My colleague who did the synthetic work used to publish in J. Med. Chem. and J. Org. Chem. They started page charges, which were quite large. . . . At this point we switched to Monatshefte, which has no page charges. It does charge for additional reprints, but these are more moderate and the dept was willing to pay those. . . . A deeper problem is one of “fashion” in chemistry.* These sentences are quoted to show how difficult it is, to run a chemical journal on a high scientific level and to get the financial problems solved. Besides of that it can be learned from historical facts that really “fashions” have some weight in decisions of accepting papers for publication. At the end of the 19th century a number of papers appeared on the crystal structure of organic compounds, studies with little scientific relevance as it turned out later. Even *Loschmidt* published a rather unimportant paper “Stereochemical Studies I” in 1890 which is not comparable to his earlier publication “Chemical Studies I” [11, 12], which appeared in 1861 as a “private print” in Vienna and was by far the best study about the structure of organic molecules of that time. Also at the end of the 19th century finding new elements was fashionable. *Auer von Welsbach*, who has been successful in this area had some followers who reported on new elements with the suggested names “Austrium” and “Austriacum”. Both findings turned out to be mistakes after their publication in “Monatshefte”.

Finally, we wanted to give an overview of the worldwide distribution of “Monatshefte – Chemical Monthly” at the present. According to the Springer-publisher the number of subscriptions of “Chemical Monthly” is about 800 running worldwide. Hopefully the saying of *L. Ebert* that *the “Monatshefte” are by far the most expensive scientific chemical journal of the world* is not true any more and we will be able to enjoy this outstanding international Austrian publication for many years to come.

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