

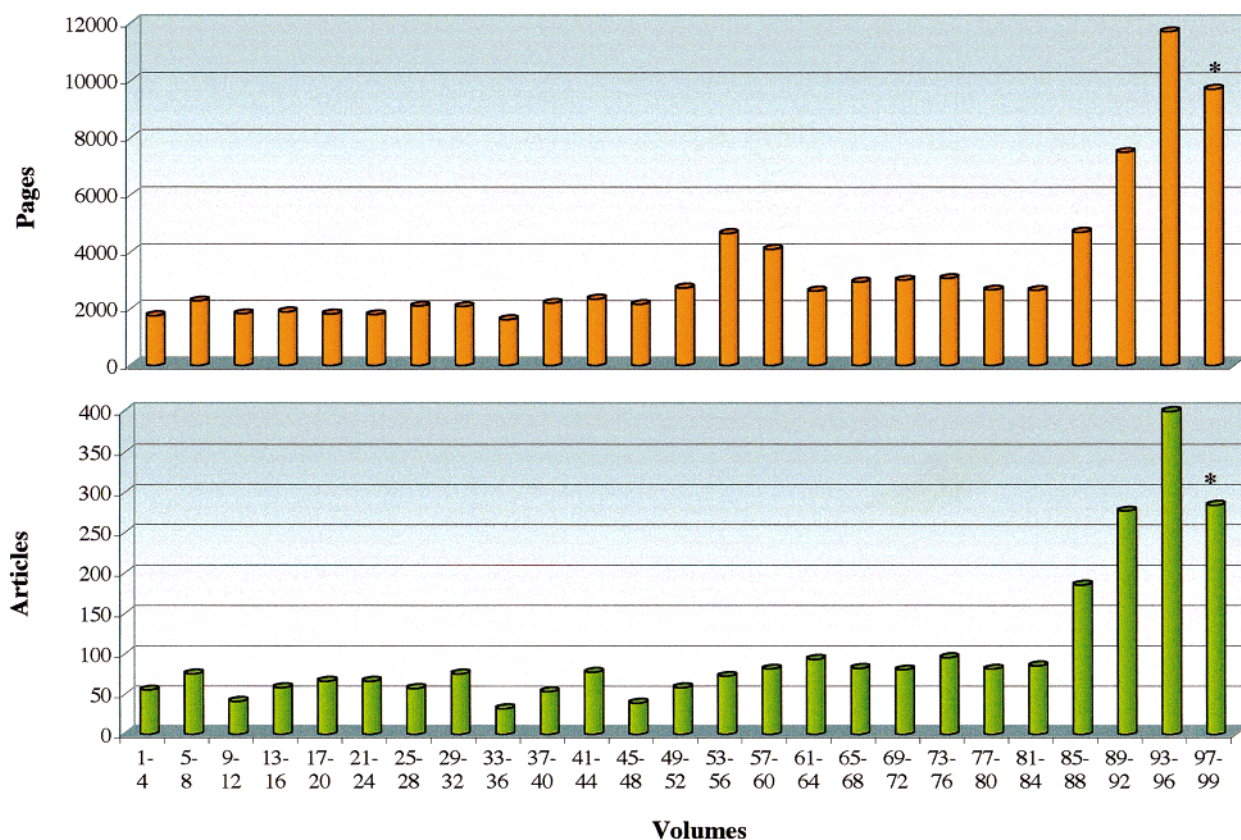
## Over Four Hundred Million Characters Served: 99 Volumes, 2567 Articles, 85623 Pages, and More Than 85 Million Words

This issue marks the start of the 100th volume of *Chemical Reviews*, the last in the second millennium. However, since two volumes were published in 1927 and in each year in the period 1931–1954, *Chemical Reviews* is not yet 100 years old—only a spry septuagenarian.

The title statistics are sensationally phrased in order to emphasize the magnitude of human endeavor that has gone into the first 99 volumes (Figure 1). This enterprise is built on the tireless efforts of thousands of authors, most of whom labored before word processors and computer programs took some of the drudgery out of numbering long reference lists and rendering complex chemical formulas, compli-

cated tables, and the like. Each resulting manuscript was refined through the detailed critiques of two or more reviewers. The enormous contribution of these anonymous individuals toiling in the vineyard of science cannot be overemphasized. Unfortunately, this vital link in the publishing chain has not benefitted significantly from technical innovations. Although ACS software has made it easier for the editors to find the best reviewers, the latter conduct the peer review essentially in the same painstaking way today as they did for Volume 1.

In contrast, *Chemical Reviews* has reached 100 volumes with only a handful of editors. The means by which these scientists shaped the journal into the



**Figure 1.** Articles and pages. Two volumes (3, 4) were published in 1927 and in each of the years 1931–1953 (8–53). An asterisk marks a three-volume set.



**Figure 2.** (a) Associate Editor, John A. Gladysz and his Editorial Assistant, Jeniffer M. Marx; (b) Associate Editor, Robert D. Kuchta; (c) Diane L. Stepisnik (left), Assistant to Coordinating Editor with Josef Michl, Susan B. Robeck (center), Coordinating Editor with Josef Michl, Sandra K. Richter (right), Assistant Coordinating Editor with Robert Kuchta.

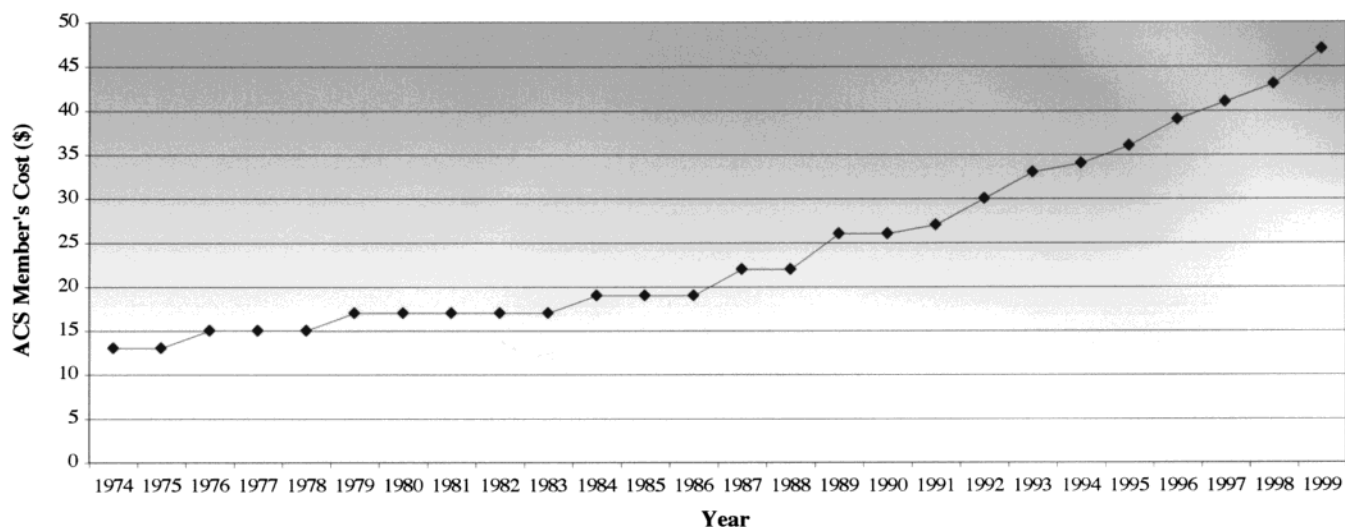
form you see today are described in an article by Mary Ellen Bowden on page 13. Our two direct predecessors, Harold J. Hart and Anthony J. Trozolo, have contributed brief personal reminiscences. The tradition of a high proportion of invited articles, which started with the first issue, deserves to be emphasized. It reflects both the initiative of the editors and the efforts of editorial boards consisting of academic and industrial chemists of all disciplines. We are particularly proud of the international composition of the board in recent times.

*Chemical Reviews* has always received outstanding support from its publisher, the American Chemical Society. In the Publications Division there resides an

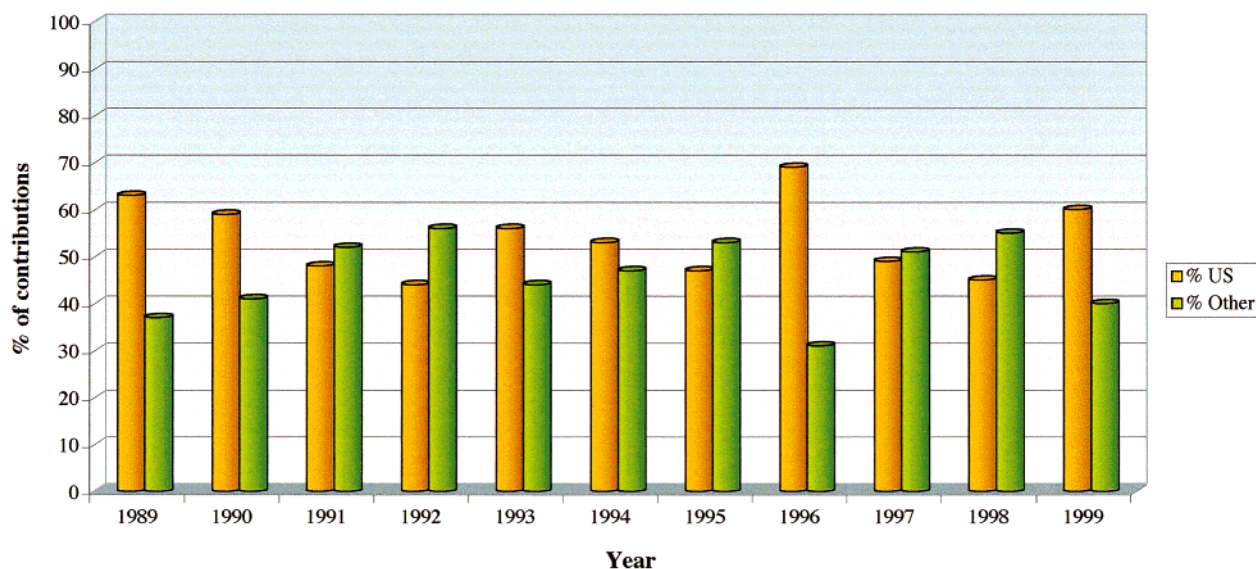
**Table 1. Thematic Issues 1985–1999**

year	issue	title
1985	October	Main Group Chemistry
1986	June	Gas-Phase Clusters
	October	Emerging Organic Reactions
1987	February	Chemical Dynamics
	June	Mass Spectrometry and Negative Gas-Phase Ions
	October	Frontiers in Biological Chemistry
1988	January/February	The Solid State
	June	Surfaces and Interfaces
	September/October	van der Waals Interactions
	November	Transition-Metal Organometallic Chemistry
1989	March/April	Chromatography
	July/August	Strained Organic Compounds
	September/October	Materials for Microelectronics
	November	Emerging Organic Reactions
1990	January/February	Main-Group Chemistry
	May	Condensed-Phase Dynamics
	July/August	Electrochemistry
	November	Mechanistic Enzymology
1991	May	Reactive Intermediates
	July/August	Theoretical Chemistry
	November	Magnetic Resonance
1992	March/April	Boron Chemistry
	May	Electron Transfer
	July/August	Enantioselective Synthesis
	November	Ion–Molecule Reactions
1993	January/February	Photochemistry
	March/April	Photochemistry (continued)
	May	New Perspectives in Coordination Chemistry
	July/August	Marine Natural Products Chemistry
	November	Molecular Mechanics and Modeling
1994	January/February	Optical Nonlinearities in Chemistry
	May	Metal–Dioxygen Complexes
	July/August	Phosphorus Chemistry
	November	van der Waals Molecules
1995	January/February	Environmental Chemistry
	May	Heterogeneous Catalysis
	July/August	Silicon Chemistry
	September/October	Synthesis of Biofunctional Molecules
1996	January/February	Frontiers in Organic Synthesis
	June	Surface Chemistry—Advances and Technological Impact—1996
	July/August	Fluorine Chemistry
	November	Bioinorganic Enzymology
1997	March/April	Combinatorial Chemistry
	June	Force and Tunneling Microscopy
	July/August	Molecular Recognition
	November	Polyketide and Nonribosomal Polyketide Biosynthesis
1998	January/February	Polyoxometalates
	May	RNA/DNA Cleavage
	July/August	Cyclodextrins
1999	February	Supercritical Fluids
	May	Diastereoselection
	July	Nanostructures
	September	Medicinal Inorganic Chemistry
	October	Chemical Analysis in Small Domains

army of insufficiently recognized individuals who have made grammatically awkward sentences sing, endured the abuses of deadlines and illegible copies,



**Figure 3.** Trends in ACS member subscription prices: 1974–1999.



**Figure 4.** Balance of articles from domestic and other authors.

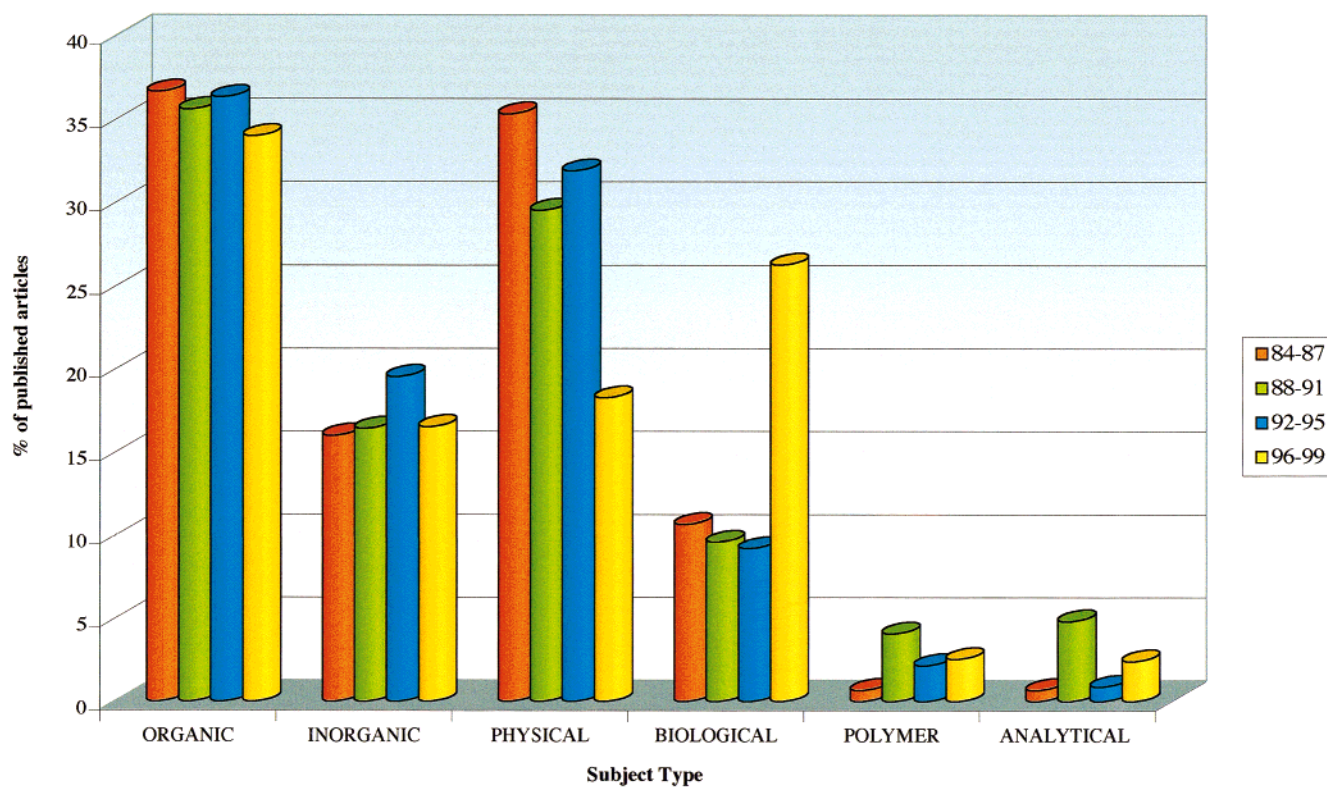
and set over four hundred million characters into type. We have no statistics on how many secretaries, editorial assistants, and coordinating editors have served in the editorial offices of *Chemical Reviews* over the first 99 volumes. It is a loss that history does not chronicle the contributions of these individuals, who do so much of the hardest work, as thoroughly as those of their formal supervisors. What do they think and observe, as the many photographs of authors pass through their hands, as the heavy parcels come and go from around the world, as scientific arguments play out in heated exchanges that they are always the first to read? In partial atonement for this historical injustice, we offer pictures of the current team of Editorial Assistants as well as those of Associate Editors in Figure 2. We also acknowledge the great contributions made by the past Associate Editors, Steven M. George and Kathy L. Rowlen. We thank all those involved in the production of *Chemical Reviews* over the years for their outstanding efforts.

Our primary constituency is our readers, and we are grateful for every single one. The ACS tries hard to keep the cost of subscriptions within reach (Figure 3). While “paying customers” are especially important (without them, journals as we know them simply could not exist), we recognize our educational mission and the value of review journals for students. We are immensely pleased when we hear through the grapevine of students who keep a thematic issue like the holy writ on their laboratory bench.

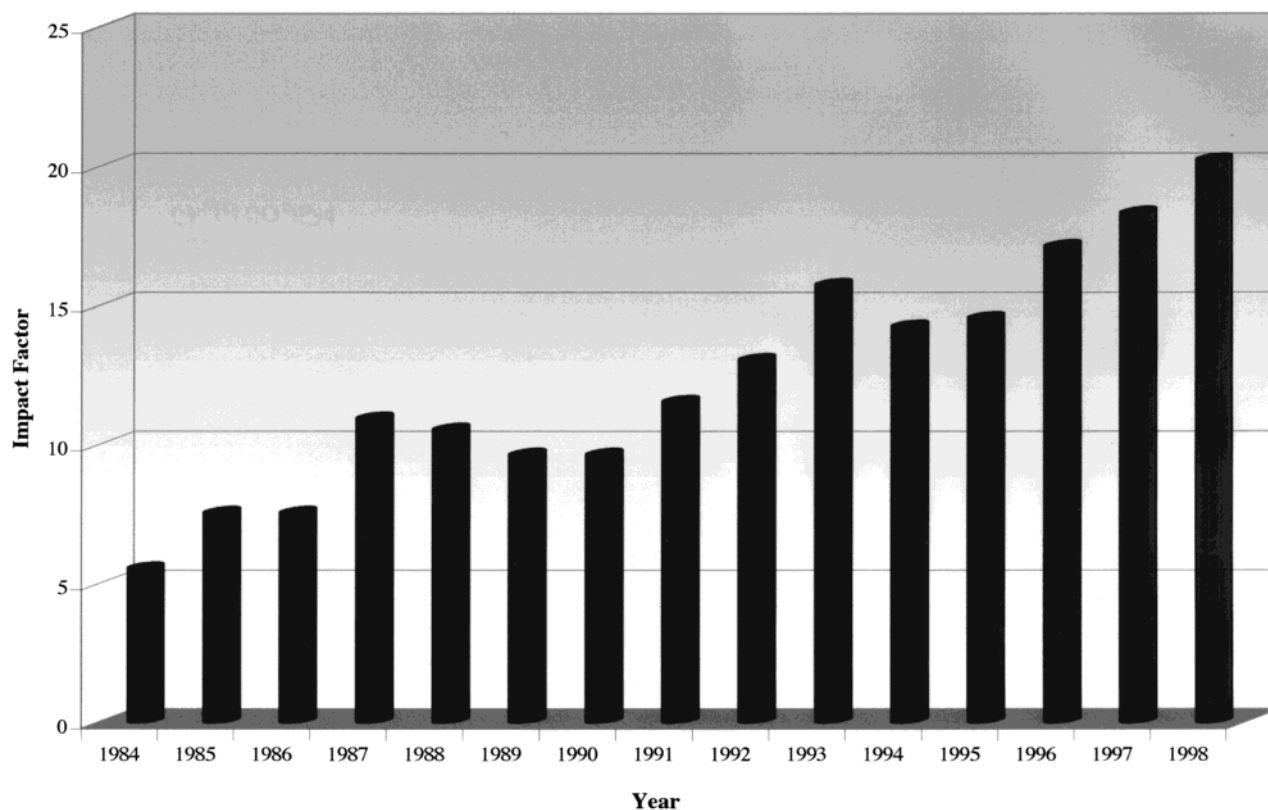
The mission of *Chemical Reviews* is to provide comprehensive, authoritative, critical, and readable reviews of important recent research in all areas of chemistry, from authors located all over the world (Figure 4). By contemporary standards, biological subjects are underrepresented, and in the coming years the readers will find a growing number of reviews covering this exciting area (Figure 5).

In 1985, periodic thematic issues were instituted (Table 1). These quasi-monographs have been very well received and can be purchased individually at





**Figure 5.** Distribution of review subjects.



**Figure 6.** Trends in the impact factor: 1984–1998.

attractive prices (\$30 for ACS members in 1999). All of the more than 1000 extra copies of the 1996 bestseller, “Bioinorganic Enzymology” (800 pages), have been sold. In 1999, the journal went from 8 to 12 issues per year, and roughly one-half of these will be devoted to specific themes.

Figure 6 shows the “impact factor”, a number that tends to be higher for review journals than for primary research journals. It measures the citation frequency of articles over a two-year period following publication. At the moment, *Chemical Reviews* has the highest impact factor among chemistry journals

**Table 2. The 50 Articles from *Chemical Reviews* Most Cited in 1945–1995**

Rank	Citations–1995	Author(s)	Title	Year/Vol./Page
1	3171	Jaffé, H. H.	A reexamination of the Hammett equation	1953, 53, 191
2	2293	Leo, A.; Hansch, C.; Elkins, D.	Partition coefficients and their uses	1971, 71, 525
3	1713	Tolman, C. A.	Steric effects of phosphorus ligands in organometallic chemistry and homogeneous catalysis	1977, 77, 313
4	1387	Grahame, D. C.	The electrical double layer and the theory of electrocapillarity	1947, 41, 441
5	1154	Paul, M. A.; Long, F. A.	H <sub>0</sub> and related indicator acidity functions	1957, 57, 1
6	1125	Parker, A. J.	Protic-dipolar aprotic solvent effects on rates of bimolecular reactions	1969, 69, 1
7	1041	Parks, G. A.	The isoelectric points of solid oxides, solid hydroxides, and aqueous hydroxo complex systems	1965, 65, 177
8	1034	Kerr, J. A.	Bond dissociation energies by kinetic methods	1966, 66, 465
9	1001	Parker, R. E.; Isaacs, N. S.	Mechanisms of epoxide reactions	1959, 59, 737
10	985	Benson, S. W.; Cruickshank, F. R.; Golden, D. M.; Haugen, G. R.; O'Neal, H. E.; Rodgers, A. S.; Shaw, R.; Walsh, R.	Additivity rules for the estimation of thermochemical properties	1969, 69, 279
11	907	Bent, H. A.	An appraisal of valence-bond structures and hybridization in compounds of the first-row elements	1961, 61, 275
12	842	Stewart, W. E.; Thomas, H. III	Nuclear magnetic resonance studies of amides	1970, 70, 517
13	739	Long, F. A.; McDevit, W. F.	Activity coefficients of nonelectrolyte solutes in aqueous salt solutions	1952, 51, 119
14	736	Kearns, D. R.	Physical and chemical properties of singlet molecular oxygen	1971, 71, 395
15	735	Kato, M.; Jonassen, H. B.; Fanning, J. C.	Copper(II) complexes with subnormal magnetic moments	1964, 64, 99
16	731	Bender, M. L.	Mechanisms of catalysis of nucleophilic reactions of carboxylic acid derivatives	1960, 60, 53
17	717	Westheimer, F. H.	The magnitude of the primary kinetic isotope effect for compounds of hydrogen and deuterium	1961, 61, 265
18	677	Izatt, R. M.; Bradshaw, J. S.; Nielsen, S. A.; Lamb, J. D.; Christensen, J. J.; Sen, D.	Thermodynamic and kinetic data for cation-macrocyclic interaction	1985, 85, 271
19	672	Jones, R. D.; Summerville, D. A.; Basolo, F.	Synthetic oxygen carriers related to biological systems	1979, 79, 139
20	662	Wiberg, K. B.	The deuterium isotope effect	1955, 55, 713
21	659	Johnson, F.	Allylic strain in six-membered rings	1968, 68, 375
22	642	Christensen, J. J.; Eatough, D. J.; Izatt, R. M.	The synthesis and ion binding of synthetic multidentate macrocyclic compounds	1974, 74, 351
23	630	Muetterties, E. L.; Rhodin, T. N.; Band, E.; Brucker, C. F.; Pretzer, W. R.	Clusters and surfaces	1979, 79, 91
24	627	Redlich, O.; Kwong, J. N. S.	On the thermodynamics of solutions. V An equation of state. Fugacities of gaseous solutions	1949, 44, 233
25	609	Crabtree, R. H.	The organometallic chemistry of alkanes	1985, 85, 245
26	596	Kauzmann, W.	The nature of the glassy state and the behavior of liquids at low temperatures	1948, 43, 219
27	595	Garrou, P. E.	$\Delta R$ -ring contributions to phosphorus-31 NMR parameters of transition-metal-phosphorus chelate complexes	1981, 81, 229
28	590	Bunnett, J. F.; Zahler, R. E.	Aromatic nucleophilic substitution reactions	1951, 49, 273
29	573	Neurath, H.; Schwert, G. W.	The mode of action of the crystalline pancreatic proteolytic enzymes	1950, 46, 69
30	550	Sundberg, R. J.; Martin, R. B.	Interactions of histidine and other imidazole derivatives with transition metal ions in chemical and biological systems	1974, 74, 471
31	548	Cockerill, A. F.; Davies, G. L. O.; Harden, R. C.; Rackham, D. M.	Lanthanide shift reagents for nuclear magnetic resonance spectroscopy	1973, 73, 553
32	529	Pritchard, H. O.; Skinner, H. A.	The concept of electronegativity	1955, 55, 745
33	525	Cohen, S. G.; Parola, A.; Parsons, G. H., Jr.	Photoreduction by amines	1973, 73, 141
34	521	Streitwieser, A., Jr.	Solvolytic displacement reactions at saturated carbon atoms	1956, 56, 571
35	521	Eisner, U.; Kuthan, J.	Chemistry of dihydropyridines	1972, 72, 1
36	513	Wells, P. R.	Linear free energy relationships	1963, 63, 171
37	500	Wilhelm, E.; Battino, R.; Wilcock, R. J.	Low-pressure solubility of gases in liquid water	1977, 77, 219
38	497	Bjerrum, J.	On the tendency of the metal ions toward complex formation	1950, 46, 381
39	491	Selbin, J.	The chemistry of oxovanadium(IV)	1965, 65, 153
40	488	Izatt, R. M.; Christensen, J. J.; Rytting, J. H.	Sites and thermodynamic quantities associated with proton and metal ion interaction with ribonucleic acid, deoxyribonucleic acid, and their constituent bases, nucleosides, and nucleotides	1971, 71, 439
41	481	Kaes, H. D.; Saillant, R. B.	Hydride complexes of the transition metals	1972, 72, 231
42	481	Strauss, M. J.	Anionic sigma complexes	1970, 70, 667
43	480	Rapp, D.; Kassal, T.	Theory of vibrational energy transfer between simple molecules in nonreactive collisions	1969, 69, 61
44	472	Jencks, W. P.	General acid-base catalysis of complex reactions in water	1972, 72, 705
45	471	Golden, D. M.; Benson, S. W.	Free-radical and molecule thermochemistry from studies of gas-phase iodine-atom reactions	1969, 69, 125
46	470	Millero, F. J.	Molal volumes of electrolytes	1971, 71, 147
47	453	Barfield, M.; Chakrabarti, B.	Long-range proton spin-spin coupling	1969, 69, 757
48	452	Kollman, P. A.; Allen, L. C.	Theory of the hydrogen bond	1972, 72, 283
49	441	Sigel, H.; Martin, R. B.	Coordinating properties of the amide bond. Stability and structure of metal ion complexes of peptides and related ligands	1982, 82, 385
50	436	Bailey, P. S.	The reactions of ozone with organic compounds	1958, 58, 925

(20.2 in 1998); it has been among the top three at least since 1985. For comparison, the 1998 impact factor is 8.0 for *Angewandte Chemie-International Edition*, which publishes both reviews and original articles, and 28.8 for *Nature*, an interdisciplinary journal. The "all-time top fifty" *Chemical Reviews* articles in terms of total numbers of citations are compiled in Table 2.

For this jubilee issue, we asked Editorial Board members for contributions. Marye Anne Fox has written a guest editorial on the future of the review article, and Guy Bertrand, Armin de Meijere, Pavel Hobza, Edward I. Solomon, and Josef Michl, along with their coauthors, have contributed scientific reviews. We are also presenting an article by Tibor Braun et al., analyzing the development of citations

in the particularly rapidly growing field of fullerenes and nanotubes.

In closing, we wish to enthusiastically express the profound enjoyment we take in being part of this dynamic enterprise.

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