

FIFTY YEARS OF OUR JOURNAL

After a few sporadic and abortive attempts at starting a chemical journal in our midst, a periodical came into being in 1927, by the name of *Arhiv za hemiju i farmaciju*, and since appeared, in the main, continually for fifty years, though frequently changing its name (*Arhiv za hemiju i tehnologiju*, 1938; *Arhiv za kemiju i tehnologiju*, 1939; *Kemijski vjestnik* 1941; *Arhiv za kemiju*, 1946—1955; *Croatica Chemica Acta* 1956—).

After the First World War a rather small group of chemists strived to find in the then Kingdom of Serbs, Croats and Slovenes, later called Yugoslavia, a scientific organization and to start a periodical, having the same function as similar organizations and periodicals fulfill in scientifically more advanced countries. The success of these efforts must be credited in the first place to Professor Vladimir Njegovan, the first President of the Yugoslav Chemical Society founded in 1926, and the first Editor of *Arhiv za hemiju i farmaciju*.

Along with scientific papers, *Arhiv za hemiju i farmaciju* was publishing lectures, announcements of important scientific events, reports on, or titles of papers published by our chemists in various journals abroad, book and journal reviews, and news about social events. This periodical thus served the purpose of activating the scientific and professional potentials in our community with a definite tendency to unite all the chemists of Yugoslavia.

The changes of name were accompanied by some alterations of the contents and also by changes of Editors-in-Chief. V. Njegovan (1927—1933) was followed by F. Hanaman (1934—1939), S. Miholić (1939—1940), M. Deželić (1941—1945), S. Miholić (1946—1952), B. Težak (1953—). The Editors-in-Chief were assisted in the editorial work by either anonymous (R. Podhorsky, S. Orlić, M. Mirnik, K. Schulz and other) or appointed editors (E. Matijević, V. Vouk, D. Sunko, P. Alaupović, J. Kratochvil, V. Pravdić, N. Pravdić, Lj. Jeftić, P. Strohal, Vl. Simeon, T. Cvitaš, Z. Maksić, M. Pribanić, S. Maričić), by an editorial secretary (D. Keglević and others), an assistant secretary and the administration (V. Mikulčić etc.). The Editorial Board of the periodical at present includes also chemists from Yugoslav republics other than the Croatia (M. Tišler, Ljubljana etc.).

The aim of the Yugoslav Chemical Society to become the central scientific chemical society of Yugoslavia and, consequently, the *Arhiv za hemiju i farmaciju* to become the central chemical journal was not attained. In 1927. the Chemical Society of the Kingdom of the Serbs, Croats and Slovenes (later of Yugoslavia) was founded in Belgrade. In 1930 *Glasnik hemijskog društva Kraljevine Jugoslavije* appeared as the first issue of the journal of this society. In 1939. the Zagreb society changes their name into the Croatian Chemical Society and afterwards the Belgrade society into the Serbian Chemical Society. After the Second World War chemical societies were founded also in other republics of Yugoslavia, and other scientific chemical journals were started (*Glasnik hemičara i tehnologa Bosne i Hercegovine*, 1952; *Vestnik Slovenskega kemijskega društva*, 1954; *Glasnik na hemičarite i tehnoložite na Ma-*

kedonija, 1974). As a result of the exchange of these journals for similar ones published by other societies in the country and abroad, nuclei of regional libraries were formed inducing active and passive documentation services. Symbiotic relationship with University institutions made possible common usage of premises, funds etc., and fulfillment of functions equally important for the advancement of science and its applications, as well as the teaching and training of younger generations.

The dispersion and polycentricity of the information system thus constituted were counterbalanced by forming common organizational frameworks (The Coordination Committee, 1951; The Union of the Chemical Societies of Yugoslavia, since 1955). When the *Arhiv za kemiju* changed its name into *Croatica Chemica Acta* (1956) a basis was afforded for clear indication of the togetherness of all Yugoslav chemical journals under the joint title *Documenta Chemica Yugoslavica* (1957). In 1968 a unified system *Collectanea Chemica Yugoslavica* was introduced by reediting into coherent sections the papers from different journals which satisfy a minimum standard of scientific publishing.

A survey of the first 25 volumes of our journal was published in *Arhiv za kemiju* 25 (1953) I—V. At the same time some outlines were stressed for the future which by now has become the past. Until volume 25 the crises of organization and personal changes within the circle of our chemists were reflected in the alteration of the character, number and timing of papers, as well as in editorial changes. The fluctuations in number of published papers were appreciable: from 34 (vol. 8, 1934) to 3 (vol. 9, 1935) with yearly average of 17, while the total number of papers published in these first 25 volumes was 416. From the 26th to the present 49th volume, 975 papers were published, i. e. on the average 41 paper per year. A novel feature introduced seven years ago was the publication of the proceedings of international scientific meetings organized in our country.

We have been trying to apply some of the most advanced procedures in technical editing, which were initiated in 1952. We have been striving not only to establish by content a real scientific journal, but to be in the forefront of modern editing especially with regard to the interrelationship between the primary, secondary and tertiary sources of information. We may say that our model has set an example for scientific publishing, not only in our own country, but also abroad. Its influence was exerted by the selective approach in the system for publication of *Collectanea Chemica Yugoslavica* (1968), and in a special agreement between the editorial boards of *Croatica Chemica Acta* and *Chemical Abstracts Service* (1959). A judgement about the incorporation of our scientific content into the international ones is now also possible.

We must also be conscious of the fact that scientific development of processing and transfer of information has reached a level when even our modern model of editing a scientific journal must urgently and thoroughly be accommodated to new challenges. The fact that we are a small journal makes this task for us more easy than it is for the big journals which are leading in the world's scientific production.

Although this is a challenge for the next fifty years, we have begun to prepare the grounds as early as two years ago (1974). Because it seems to us that we have very clearly indicated this up-to-date but delicate process, we are somehow all bound to continue it. Not only in seeking the proper place

of our chemistry and science in our own interest, but also in the more general interest of the world as a whole.

It is necessary to estimate, however, how strong a bond if any, has been established between our small scientific community and the world scientific endeavour, through *Croatica Chemica Acta*. Reasonably objective elements for such a judgment were offered by the appearance of *Journal Citation Reports*, in 1976 — the first of its kind — by the Institute for Scientific Information in Philadelphia, under the editorship of Eugene Garfield.

This computer analysis of an impressive scope looks into the interrelationship of 2630 journals in 1974, embracing Science, Medicine, Agriculture, Technology and the Behavioural Sciences. Seven Journals from Yugoslavia are in the titles-dictionary of *J.R.C.* It would be interesting to know according to which criteria *J.R.C.* included small journals from small countries with their infinitesimal contribution to the total volume of scientific information. It is a fact, in any case, that in this first issue of *Journal Citation Reports* one of the two journals analyzed for 1974 from Yugoslavia is *Croatica Chemica Acta*.

The primary purpose of a scientific publication is communication, both by lending itself to criticism and by inducing new research. How well this purpose is fulfilled is reflected by the *impact* a particular piece of work has made outside of the author's immediate circle. Now, what was the response from two thousands and a few hundreds of journals analyzed in 1974 to the information content of *Croatica Chemica Acta*?

In the ranking with regard to the *number of times C.C.A. was cited* in 1974, *C.C.A.* acquired the **1449th** place.

Garfield warns against drawing conclusions about the value of a journal based on one type of ranking only. In the ranking according to the number of times a journal has been cited its size is, of course, of great importance. The more articles a journal publishes, the greater is the likeliness that it will be quoted. To avoid the bias in favour of greater journals, in order to normalize this ranking with regard to the production of each journal, *J.C.R.* authors introduced

the *impact* factor.

It is obtained if the number of times a journal has been cited (in all the scanned journals during 1972 and 1973, but regardless of the years the cited articles appeared) is divided by the number of papers it published during the same period.

Croatica Chemica Acta is **1220st** by *impact*.

If one takes into account how many times the papers it published only in 1972 and 1973 were quoted by other journals in as early as in 1974, *C.C.A.* fits the **1249th** place of »*immediacy*«.

It is certainly important to know how great a contribution in these rankings is from *self-citations* (*C.C.A.* to *C.C.A.*). Two and a half percent of all the references cited in *C.C.A.* during 1974 were to *C.C.A.* itself. The same absolute number of self-citations makes for 4% of all the references to *C.C.A.* found for 1974 in all the scanned journals irrespective of the year in which the *C.C.A.* papers were published. These figures, together with the impact ranking will be used below in a comparison of *C.C.A.* with a few similar journals.

According to the described rankings *Croatica Chemica Acta* belongs to the »steady middle«. (The only other journal from Yugoslavia recorded in *J.R.C.* for 1974 is near the lower end in these rankings). The conclusion is strengthened by considering the quality of the citation interrelationship. For instance, among 177 various journals cited by the authors of *C.C.A.* in 1974, the most frequently cited ten are also among the »first hundred« out of all those ranked by *J.R.C.* On the other hand, ninety journals quoted papers from *C.C.A.* in 1974. Among those which cited *C.C.A.* more than six times, two are from the »first hundred«, four between the 108th and 265th place, and two more are 622d and 669th.

In the table below, *C.C.A.* is compared with journals selected more or less at random from a few European countries of similar size (but not necessarily of similar economic level) as Yugoslavia. The journals are arranged in the order of decreasing *impact* factor. In addition, the last two columns give (A) the *self-citing* percentages, in a given journal and (B) in all the citations to it in 1974 from all the other scanned journals.

the <i>impact</i> factor sequential numebr	the title	self-citing %/o	
		A	B
438.	Chemica Scripta/Ark. Kemi	11	10
717.	Acta Chemica Scandinavica	19	14
934.	Collection of Czecho-slovak Chemical Communications	17	27
941.	Chimia	3	8
1029.	Chemiker Zeitung	2	13
1211.	Bulletin des sociétés chimiques Belges	8	6
1219.	Monatshefte für Chemie	12	15
1220.	<i>Croatica Chemica Acta</i>	3	4
1289.	Bulletin de l'Academie Polonaise des Sciences Séries des sciences chimiques	10	36
1294.	Chemicke Zvesti	12	42
1370.	Chemicke Listy	2	13
1404.	Magyar kemiai folyóirat	10	36
1411.	Acta chimica Academiae Scientiarum Hungaricae	9	21
1453.	Roczniki chemii	14	42
1471.	Revue Roumaine de chimie	10	42
1784.	Kémiai közlemények	< 1	17
2233.	Kemisk Tidskrift	—	—
2366.	Kjemi	5	40

As this table obviously suggests, *Croatica Chemica Acta* »earned« its status with negligible self-citations. »A« refers actually to one year only — 1974 — indicating the part of self-citation in a given journal during that particular year. Hence, »A« is liable to fluctuations in the »yearly production«, more probable in small journals. On the contrary, »B« takes into account all the citations to a given journal by all the others as well, though in the same year only. Hence, »B« is a steadier figure. Even if one should bear in mind that 1974 was a really bad year with only 36 papers published by *C.C.A.* — '72, '73, '75 and '76 each saw more than 60 papers — the general picture would

not be altered: *Croatica Chemica Acta* is by the self-citation rate about *equivalent to if not better* than any of the journals in the above table ahead or following C.C.A. as ranked by *impact*.

We believe the rather positive outcome of the present analysis of the international scientific position of *Croatica Chemica Acta* may be attributed to the steady and assiduous editorial policy:

— to publish only papers cleared by an international reviewing procedure with all the improvements that such an approach usually enables, and to publish in one of the main world languages;

— to appear regularly even at the expense of the journal's size;

— to modernize the technical side of the journal »ahead of its time«, which sometimes appears to be easier for the small ones.

Let us hope that future analyses of the *Journal Citation Reports* will show further improvements in the status of *Croatica Chemica Acta*. If this occurs, it will certainly be a reflection of a larger and better scientific production in this country, while we continue with our present policy as formulated above. Because of it, we used to go through serious crises, but only due to our perseverance in that course the results obtained are relatively satisfactory.

Nevertheless, we may be only partially satisfied fifty years after the appearance of the first issue of our journal. We have been, it is true, constructive indicators of the state of chemistry at a given time, not only in Croatia, but in Yugoslavia as a whole as well. As to our influence we must admit that it was not always very great. The fact that there were really few followers of our standards and technical editing must enhance our future efforts to enter more energetically into the polemics about the improvement, importance and incorporation of science into our society's tissue with all the consequences of applying the true, *i. e.* world's standards.

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