

## Professor Zoran Zaric—In Memoriam



The Academician



The ICHMT constitution  
draftsman



The international  
sportsman

ON 15 DECEMBER 1985, the international heat-transfer community lost one of its leading scientific and public figures, Professor Zoran Zaric of the University of Belgrade, Yugoslavia. He was, and had been for nearly 20 years, the Secretary-General of the International Centre for Heat and Mass Transfer; but Zoran Zaric was so much more than a laboratory- and committee-man that the Editors of this journal have encouraged me to overstep, when writing about him, the conventions of the formal obituary notice. All who knew Zoran will understand their reasons; for his personality commanded affection as strongly as his achievements elicited respect.

I first met Zoran in 1966 when, attending a con-

ference in Belgrade, I was approached by three, to me, unknown Yugoslavs. They were Naim Afgan, Predrag Anastasievic, and Zoran Zaric, all of the Boris Kidric Institute for Nuclear Energy; and they were seeking support for their proposal to establish an international heat-transfer organization, bringing together scientists from both sides of the 'continental divide' between eastern and western blocs, which Yugoslavia somewhat uneasily straddled.

As it happened, this was the second time that I had heard of such an idea; for Professor Aleksei Vasilievich Luikov, of Minsk, was already promoting international co-operation in heat transfer; and, at the ICHMT Editors' meeting in Constanz, which his car-

diac problems had prevented him from attending, I had been charged by him with presenting his proposal to our colleagues.

As a consequence of my double involvement, I played some part in effecting a confluence between the two streams of initiative, and in determining, as it turned out, that the International Centre put its roots down on the Adriatic shore.

In those days, before the tourist industry had established itself in Yugoslavia, the Boris Kidric Institute possessed its own sea-shore leisure centre, at Herceg Novi; and it was there, in the following year, that the first international seminar was held. The centre had a meeting hall, an outside dining area shaded by interwoven vines, and just enough accommodation for the hundred scientists (with their fortunate families in some cases) who foregathered there. Professor Luikov had this time been allowed by his physicians to make the journey. Zoran Zaric, who spoke Russian as fluently as he did English, moved easily between the eastern and western groups, contributing to the sense and reality of harmony and preparing the way for the foundation of the International Centre.

My friendship with Zoran Zaric began already during the first meeting at Belgrade, cemented by conversations at Turkish-style restaurants in the old city, and helped by the presence of his first wife, Mila, and of mine, Eda. It was our first exposure to middle-European intellectual society; and we could not have found better representatives: they were urbane, well-read, polyglot, sophisticated without being cynical, and conscious of belonging to an international culture to which national and political divisions were troublesome irrelevances.

The friendship was further consolidated at the 1967 Herceg Novi meeting, where, incidentally, I first learned of Zoran's distinctive personal contributions to knowledge of the turbulent boundary layer. His approach was an exceptional one, whereas mine was theoretical, so I did not for a long time appreciate what he was doing. Years later, we both recognized how essentially compatible, and in need of one another, his and my ideas had become. Our last enterprise indeed was the establishment of a joint program between the Serbian Academy and the Royal Society to mine this vein of research together.

Matters were carried forward in 1968. It was the year in which the International Centre was to be founded; and Zoran and Mila had invited Eda and myself to holiday with them in Budva before the seminar. Together, on the beach and at cafe tables, Zoran and I prepared the first draft of the constitution, which the 'founding fathers' of the Centre subsequently adopted. By good fortune, I have found a photograph recording our labours, and reproduce it here so that others can appreciate something of Zoran's light-hearted but successful approach to arduous work.

Not all our meetings were concerned with the International Centre. We were among those who, also in 1968, travelled from a conference at Professor Lui-

kov's institute in Minsk to a seminar at Professor Kutateladze's in Novosibirsk. It was a hilarious and heart-warming social experience, as well as a rewarding scientific one. The boating photograph of Professor Zaric (the power plant), and Professor Aleksander (Sasha) Ivanovich Leontiev (the navigator), records one of the quieter moments.

The 1968 Meeting at Herceg Novi was clouded by an event which took place just prior to its start, namely the Soviet incursion into Czechoslovakia; and feelings of apprehension, guilt, indignation and exultation variously affected, and tended to divide, a group that until then had been singlemindedly, and doubtless naively, imbued with international bonhomie.

The Yugoslavs were in an especially difficult position... politically, culturally, personally; and also as prime movers in the new cooperative venture which ICHMT represented. That the Centre did not then disintegrate is due to their assiduous preservation of contacts with all parties, their avoidance of extreme positions in discussion, their maintenance of a calm and equable demeanour, and their steady determination to continue along the agreed path. Zoran Zaric as Secretary-General and Naim Afgan as Scientific Secretary set the tone; and others followed their example. Their avoidance of dramatic moves then was as crucial as their strong initiatives had been when the Centre was no more than a dream.

As Secretary-General of the Centre it fell to Zoran Zaric to negotiate the agreements which were established with UNESCO headquarters in Paris. Having obtained his Ph.D. there in 1964, he was fluent in French also. His charm and patience, and the reasonableness of the ICHMT's proposals, would have ensured success with UNESCO anyway; but his 'French connection' undoubtedly helped, and it exemplifies his knack of providing something extra—good manners as well as good sense, pleasure as well as business.

When the Boris Kidric Institute finally relinquished its leisure centre, the ICHMT moved its annual seminars to Trogir, in the vicinity of Split. Here, too, Professor Zaric's contributions exceeded the merely scientific and organizational. I recall boat trips at night to islands where Zoran's numerous friends had summer houses; and it was he who arranged for the marriage, conducted by the Mayor of Trogir in the ancient and picturesque Town Hall, of one of the founding Editors of this journal. Alas, I could find no photograph of that memorable event.

Although his distinctive scientific specialty was turbulence measurement, Professor Zaric was responsive to direct industrial needs. Several of his publications therefore concern thermal production of natural waters, which in the 1960s much concerned the would-be operators of electricity-generating plants. Later, he turned his attentions to the design of natural-draught cooling towers, on which subject he and I again found opportunities for collaboration. What was engaging about him was his willingness to learn new skills, his

enthusiasm for novelties of technique, and his readiness to undertake such low-level tasks as computer-input preparations when they were needed.

Zoran was justifiably proud of having been elected as a member of the Serbian Academy of Sciences. He knew that many worthy persons in his country failed to achieve that honour, and that, had his candidature by ill-chance not been successful, his achievements would not have been thereby diminished; nevertheless, that he *had* been chosen made him feel better about himself and about the society in which he lived. He knew before that he had worked hard and well; now he was pleased that others recognized it too.

In 1984, Sir Owen Saunders, one of the founders of this journal, attained his 80th birthday. Robert Maxwell, our publisher, hosted a celebrity dinner; and Zoran Zaric was one of the chief guests, giving special pleasure by conveying the greetings of the Serbian Academy to Sir Owen, who many years before had been elected a foreign member of that learned body. Once again, Zoran was the one who provided something extra: others had come to honour the Grand Old Man of heat transfer; but Zoran's connections carried an additional aura.

Like most men of a caring disposition, Zoran Zaric was acquainted with personal sadness. There were no children in his first marriage, which was terminated by his wife's tragic death. Though distraught for a

time, he married again; and this time was fortunate indeed to become the father of a fine boy and girl. For them it is his death that is the tragedy, especially because Zoran's own past troubles helped him to give quiet comfort to others in need of it. Though hard to convey, this is one of the qualities which made Zoran so much more of a friend than a colleague.

The three photographs portray Zoran Zaric as the serious academician, as the organization man capable of combining business with pleasure, and as the young-at-heart companion, at ease with himself and with others. I wish that they could also convey Zoran the raconteur retailing the jokes collected in Georgia, U.S.A., or Georgia, U.S.S.R.; or Zoran the family friend, romping with the children whose favourite uncle he was; or Zoran the ...—but to portray a personality as large as his needs skills and space which I do not possess.

That he was nevertheless someone very special I can however prove thus: at the opening session of the recent International Heat Transfer Conference at San Francisco, there was not one speaker who failed to mention Zoran's all-too-final absence. He has left a gap in the heat and transfer community that no-one will ever quite fill.

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