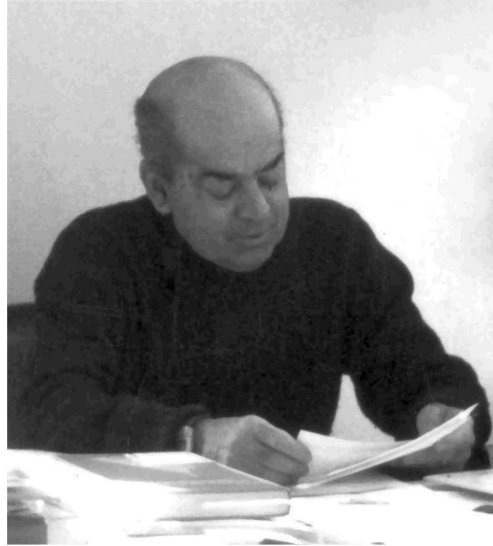


## In memory of Delio Ruggiu

(July 31<sup>st</sup> 1934 – August 8<sup>th</sup> 2004)



Delio Ruggiu, who died on August 8<sup>th</sup> 2004, was an outstanding colleague, but first and foremost a beloved and irreplaceable friend.

We heard the news of his sudden and untimely death with immense sadness and a great sense of emptiness, along with a feeling of incredulity: he had got through apparently desperate times before, and none of us thought that this time he had come to the end.

In the many years of our life at the Institute, Delio was always there to share so much of significance in the research activity, and his participation was invariably marked by a great sense of responsibility, intellectual rigour and enthusiasm.

Born in Nuoro, Sardinia, 70 years ago and educated in Rome, Delio became a senior researcher at the Istituto Italiano di Idrobiologia (now Istituto per lo Studio degli Ecosistemi) in 1963. During the late 50s he had worked first at the Zoological Institute of the University of Rome under the supervision of Prof. Emilia Stella and then as a young biologist at the Istituto Superiore di Sanità, an acclaimed research centre within the Servizio Sanitario Nazionale (National Health Service), also in Rome. This brief but intensive experience in a completely different field – the study of the recently discovered cellular organelle lysosomes - in a highly motivated and extraordinarily competent group, marked his future limnological career for ever.

Delio's initial studies at the Institute in Pallanza focused on macrozoobenthos assemblages and their relationship with environmental parameters (Bonomi & Ruggiu 1966, 1968). Piero first met him some 33 years ago, and his earliest, unforgettable memory is of cold days on a small lake (Mergozzo) where Delio was conducting with his colleague and brother in law, Carlo Saraceni, a survey of the time-space distribution of benthic organisms based on a strong statistical approach (Ruggiu & Saraceni 1972). It was winter, one freezing day followed another, and we were all dressed in the thick green "Eskimo" anoraks of the time. I can still see him, a little, calm, silent man but, as I was soon to learn, with the brightest of minds and an exact knowledge of what his scientific task was.

During the early 60s he was one of the very few scientists working on benthic ciliates protozoa, a research line he followed for about 10 years. He was proud of being one of the few researchers working in this field and was particularly happy to see his articles cited in text books by two most distinguished scientists, H. Findley and R. Margalef (Ruggiu 1969).

In the early 70s, the then Director of the Institute, Mrs Livia Tonolli, asked Delio (and his never-forgotten friend Carlo Saraceni) to make a rapid move into another ecological aspect of the lake ecosystem, the study of planktonic algae and primary productivity (Ruggiu & Saraceni 1977). Delio was entirely receptive to this request, which fitted well with his own awareness that a more holistic view of limnological studies was required. It was at this time that a highly stimulating and enthusiastic Japanese group were hosted for several months at the Institute (Kurata *et al.* 1976) and Delio benefited greatly from the qualified cooperation with Masami Nakanishi (Saraceni *et al.* 1978).

His deep interest in the algal community in all its ecological aspects (mechanisms and factors mainly related to the eutrophication process; e.g., Chiaudani *et al.* 1979; Ruggiu 1989; de Bernardi 1990) continued up to 2001, the year of his retirement (Ruggiu 2002; Morabito *et al.* 2002).

He was a man of immense knowledge and culture allied to humility and modesty, rare values these days. Ambition and competition were foreign to him – he was sure of what he was doing, and this was enough for him.

Active participation in other fields such as palaeolimnology (Guilizzoni *et al.* 1993), in particular the study of fossil diatoms (Candido *et al.* 1985; Ruggiu *et al.* 1998), and the interactions between phytoplankton and zooplankton dynamics (e.g., Hamza *et al.* 1993a, b; Morabito *et al.* 1997; Manca & Ruggiu 1998) brought together real interdisciplinary scientific capabilities to address major limnological issues for government (e.g., Finalized Projects of the CNR; Ambrosetti *et al.* 1983) and public institutions (e.g., The International Commission for the Protection of Swiss-Italian Waters).

Delio was not only involved in applied research (a prime interest was Lake Orta, long polluted and then recovered by liming; e.g., Bonacina *et al.* 1973; Calderoni *et al.* 1992; Morabito *et al.* 2001); he never neglected the basic studies of limnology (e.g., Lami *et al.* 1992; Ruggiu *et al.* 1998; Morabito *et al.* 2004) and along with this commitment went his firm belief that the race to amass data, and the ever-increasing number of publications, most of them destined for a rapid descent into oblivion, had little sense as a strategy, and that it would be more useful to concentrate on the huge amount of data already collected, and which abounds in the literature.

He started many young students off on the road to scientific research, taught school at a variety of levels, and almost in the shadows took part in numerous projects, the results of which were the subject of dozens of scientific articles in authoritative national and international journals.

He was a person of intelligence who had a profound knowledge of his own work and who weighed every sentence he wrote with professional thoroughness. Although he could often be shy and discrete, he gave great importance to personal relationships: of a gentle and considerate disposition, he knew how to open his mind to others, listening and replying in his understated, never arrogant way; his culture was extensive and profound, and he was unusually gifted in understanding facts and people in a non-superficial, non-exterior way. Quiet and reserved in private as well as in public life, he was never attracted by power and fame: just the opposite of what usually happens, in the scientific world too. In science, he was able to understand the importance of new research fields, not only in limnology, but also in other areas, from physics to medicine.

Classic music and all kind of art were his fondness. He loved talking about literature: our Christmas presents to each other were usually books. This was a unique opportunity for stimulating discussions on life and the deepest meaning of our existence.

He especially liked young people, and had a particular fondness for our son Dario, probably because of his shyness. Even when he became a teenager, our son never complained about going to visit Delio. There was always some new article or book to discuss and, despite the difference in their ages, their meetings were never boring courtesy calls.

He was wary of crowded places and travels, preferring instead quiet surroundings and a stable life with his family, his beloved wife Angela and daughter Francesca. Especially during the past decade, he was not fond of attending congresses and places where researchers congregate, preferring study and personal research to public appearances; he used to read conference proceedings carefully, but his comments were laced with a touch of irony deriving from his ability to distinguish the fashions of the moment from serious research.

On the rare occasions when he decided to speak in public, one was struck by how well he spoke, even in languages other than Italian, the clarity and completeness of his arguments, expressed calmly yet firmly and without any hint of condescension. Gentle and reflective by nature, he always preferred the strength of argument to forceful expression and authoritarian posturing, convinced that words and reason were better than superficial brilliance.

Mrs Livia Tonolli liked him very much and greatly admired his intellectual spirit: she knew that he was honest and not at all shy of expressing his ideas. The following directors of the Institute, we know, liked him for the same reason.

To us his personality reflected his origins. Marina used to joke about his being from the wildest and remotest part of Sardinia, the provinces of Nuoro and Ogliastra, where the sea can be reached only from the mountains and where people are of very few words, words there being, as we say in Italian, like stones. Marina on the other hand is from Sassari, in the north-western corner, close to the sea, where people like discussions and playing different roles, like in a typical Italian comedy, just for the pleasure of arguing.

Despite being essentially shy, he was never reluctant to express his ideas to those in authority. He was well aware of what it meant to be a scientist and a citizen, and was one of the rare Italians who know the meaning of the verb "to serve". I remember a discussion sparked off by a magazine article. The journalist commented that the verb "to serve" is used in Italy only for soldiers or maids. This is because we do not have the "culture of serving" in the sense of "doing our duty in our work simply because we are able to". It was typically Italian (continued the writer) to consider an appointment not as a duty, a responsibility to be carried out to the best of our ability for what may be a limited time, but only as the reaching of a coveted new position, which then has to be maintained forever: nothing was farther from Delio's mindset than this idea. He accepted to become a deputy director of our institute, as a simply way of being useful to the institute and, probably, the Country; not feeling the need to present himself as rich or important, he had the freedom to express his own opinions, without external impositions.

The deep affection for Delio as a friend was nourished over the years by a shared love for and involvement in many areas of life, from politics and trade union activism to culture and social commitment.

Delio Ruggiu passed away almost in silence, leaving us in this world of shouting, bombing, chatting, self-confident people of success who have nothing to leave and nothing to tell.

What he leaves to us, his colleagues at the Institute and all those who knew and admired him, is a rare gift of intellect and affection to cherish and treasure.

*Piero Guilizzoni, Marina Manca*

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