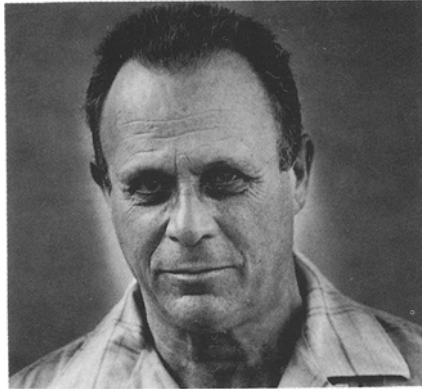


**Michael Costa**  
(1922-1992)



***IN MEMORIAM***

Dr. Michael Costa, writer, educator and outstanding acarologist and entomologist, was born on 25 March 1922 at Hamburg, Germany, and died on 17 March 1992, one week before his 70th birthday. His father, a physician, was very active in the Zionist movement, co-founder of several Zionist periodicals and author of a history of Zionism. The parents often hosted at Hamburg Zionist envoys from Palestine. This background explains Michael Costa's subsequent fervor for Zionist and kibbutz ideals. Until the age of 11, young Michael studied at the "Talmud Torah" school in Hamburg, but emigrated to Palestine in 1933. Upon his arrival in this country he first went to school at Ramat HaSharon. Following a short stay at the Ben Shemen youth village, Michael asked to be sent to high school at the Pedagogic Institute (now 'Shomria' high school) of the HaShomer HaZa'ir movement at Kibbutz Mishmar HaEmeq. He was among the first graduates of this institute. He then joined the Hakhshara nucleus which later founded Kibbutz Lahavot HaBashan and which received its training at Kibbutz Ma'abarot and Kibbutz Tel Amal (now Nir Dawid) and in a Hakhshara camp at Karkur near 'En Shemer.

At this time Costa fell under the spell of the meteorologist S. Duvdevani, Israel's well-known dew researcher, and became his devoted pupil and assistant. During a stretch as instructor for the youth organization of the HaShomer HaZa'ir Movement in Tel Aviv, he frequently visited the Biological Institute of Y. Margolin, an early and outstanding Palestinian Jewish zoologist and biologist, in Tel Aviv, and his connections with biology were strengthened. The Pedagogic Institute at Mishmar HaEmeq then requested the Hakhshara to release Costa to serve as a teacher at the institute and he returned to Mishmar HaEmeq. Subsequently, his work with Duvdevani and the time he spent at the Biological Institute led him to be one of the first academically trained persons of the Kibbutz Movement. Since his love for both nature and teaching were well known, he was released from kibbutz duties during 1942 to 1944 for studies at the Hebrew University of Jerusalem. The Kibbutz Movement was loath at that time to let kibbutz members complete academic studies and Costa did not collect his B.Sc. degree. From 1944 until the War of Liberation (1947-49), Costa was thus a member of Kibbutz Mishmar HaEmeq and a teacher at the Pedagogic Institute. He participated in the defence of the kibbutz against the army of Kaukji and was wounded severely, by both shrapnel and the loss of a big toe, but with great courage overcame his disability.

After the war, Costa was invited to teach at the Kibbutz Seminary, 'Oranim'. Some years later, with a changed atmosphere in the Kibbutz Movement as regards academic studies, and with

characteristic firmness of decision and singlemindedness of purpose, he returned to the Hebrew University and, after receiving confirmation that he had completed the requirements for the B.Sc. degree, was admitted to the M.Sc. studies. In 1955 Costa received the M.Sc. degree (major subject: zoology; minor subjects: parasitology and biochemistry) and in 1959 the Ph.D., *summa cum laude*, with a thesis on 'The Ectoparasites of Birds and Mammals in Israel', which laid out his further career as an animal parasitologist.

**The Scientist.** In 1960-61 Costa spent a postdoctoral sabbatical in London, working at the British Museum (Natural History) in the Department of Zoology, Arachnida Section, with O.E. Evans, J.G. Sheals and D. McFarlane; in 1977 he enjoyed another sabbatical at the British Museum. During 1969/70 he was at the Department of Zoology of the University of Georgia at Athens, GA (USA), where he cooperated with P.E. Hunter, on a Senior Foreign Scientist's NSF (National Science Foundation) Fellowship.

**Scientific Work.** Costa's first two papers dealt with ectoparasites of rodents — fleas and ticks, respectively — the latter paper published with his tutor for the Ph.D., O. Theodor. He then directed his interest to mites associated with rodents, such as the Levant vole, *Microtus guentheri*, and the mole rat, *Spalax ehrenbergi*. Apart from his Ph.D. thesis, he issued in 1967, with O. Theodor as senior author, a survey of the ectoparasites of wild mammals and birds in Israel, published by the Israel Academy of Sciences and Humanities. The mesostigmatic mites which he had collected on rodents in this country were studied by him during his 15-month postdoc at the British Museum, in close cooperation with the eminent acarologists there. These Acari stemmed either from trapped rodents or were collected from the nests of rodents. Later work at the end of the 1960s (with E. Nevo) continued on the topic of *S. ehrenbergi*-associated mites — nidicolous arthropods associated with different chromosomal types of the rodent. However, already in 1963, he turned to the leitmotiv of his research subject, mesostigmatic mites associated with coprid beetles, especially scarabaeid beetles, but also with other insect species, cerambycid and carabid beetles, bumble bees, bugs and cockroaches or other arthropods, such as the hermit crab, *Coneobita scaevola*.

The main emphasis in his studies is on taxonomy, but his papers abound with biological and evolutionary findings, descriptions of rearing methods, etc. Quite early (1967) he published the first detailed list of these mites (170 species) in Israel. He also described mesostigmatic mites from litter and wreckage found on the Mediterranean shore of Israel. With time, Costa became the foremost expert on mites on beetles and determined species from all over the world. He described, alone or with associates, nine new genera, 81 new species and three subspecies.

**Scientific Connections.** During the late 1950s and early 1960s, acarology became firmly entrenched as a separate discipline and Costa was quite active in this process. He was a charter member of the American Society of Acarology. He participated in the 1st, 2nd and 3rd International Congress of Acarology, and was a member of the Executive Committee and chairman of the Subcommittee for Symposia of the 4th. He attended International Congresses of Entomology, of Zoology, and of Systematics and Evolutionary Biology. He was a member of the Society of Systematic Zoology (USA). He was chosen to deliver the International Relations Address, which he dedicated to Entomology in Israel, at the 1969 Annual Meeting of the Entomological Society of America. The esteem in which he was held in the UK can be judged by his election as a fellow of the Linnean Society, London (1964), and a fellow of the Royal Entomological Society of London (1973). His special and close professional and personal relations with the British Museum, and especially with the Zoological Department, persisted and deepened with the years. His vitality, sincerity, enthusiasm and talents singled him out for a special status at this institution. In 1977 he was awarded an honorary membership by the directors and trustees of the Museum for his "unique contribution to the Museum". This is an honor bestowed on only a few. Costa was fully justified in saying that London was his second home, with the highlight being the British Museum (Natural History).

In Israel, Costa was a member of the Israel Society of Zoology, serving several times on its board and as a member of its Editorial Board; in 1989 he was elected one of the two first honorary members of this society. He was a very active member of the Israel Society of Entomology and of the Fauna (now Fauna and Flora) Palestina Committee of the Israel Academy of Sciences and Humanities.

**The Teacher.** From 1951, Costa was a member of the staff, and periodically head of the Department of Biology at Oranim, the Teachers' College (Kibbutz Seminary) of the Kibbutz Movement. He and his colleagues A. Skolnik, E. Nevo and A. Aboulafia established the Biology Section at Oranim, which ultimately became the Department of Biology of Haifa University. Whereas his founding colleagues ultimately transferred to other institutions, Costa maintained Biology at Oranim with some help from A. Skolnik and a devoted team of teachers who had joined him. In 1972, Costa was appointed associate professor and Head of the Department of Biology at Haifa University, and in 1976 full professor.

Costa's last years were overshadowed by illness. Late in 1986 he suffered a first stroke, which curtailed a visit to the UK, and a second, more severe stroke, 3 months later. However, he recovered sufficiently to return, albeit disabled, to work. During his last 2 years his mobility was severely reduced and his eyesight failed progressively, but this in no way affected his fertile, versatile mind. Even during this last stage of his illness his home was visited continuously by one and all because he was an outstanding personality and a brilliant conversationalist.

Costa remained a man of Oranim until his last day and his connections with Oranim remained firm over his last years, during which the staff persisted in visiting him, discussing all happenings in both the academic section and the seminary, and asking for advice and guidance on personal, academic and practical matters.

**The Writer.** In 1978 Costa published a 450-page book 'Insects Against Man' (Insects Anti Man) (HaKibbutz HaMe'uhad Publishers), in which he elucidated the competition and fight between mankind and insects of medical, hygienic and veterinary importance and went into detail on insect-transmitted diseases and the different control options. This textbook (in Hebrew) is used by universities, centers for public health instruction, and schools. In addition, he prepared for Everyman's University (Ramat Aviv) an updated entomology text in Hebrew in three volumes (1981-83), a standard text to this day. A further important book (1985) by Costa was 'A Bridge Across the Two Cultures' (Afik Publishers), the latter in the sense of C.P. Snow, in which he presented his concept of biology and problems of biology to students of the humanities. The book starts with a description of geometry as a possible link between the two cultures. Costa was, characteristically, a great admirer of M.C. Escher's drawings.

His last book, written during his final illness, shows us Costa as the Renaissance personality he obviously was. In 'The Golden Section, Solomon's Seal (pentagram) and David's Shield (hexagram; Magen David) — (An Interdisciplinary Study)' (Sifriat HaPoa'im Publishers), which went to press during his last year of illness (1991) with the devoted help of his wife Yardena Costa, he again extended a bridge between the two cultures. Costa demonstrated how the geometric rule of the golden (divine) section plays a role in mathematics — such as algebra, and of course art, architecture, music, botany and zoology, and discussed the occurrence of the pentagram and hexagram forms in flowers, living organisms and nature at large *vs* its significance in mysticism. In addition, he left behind the unpublished manuscript of an again interdisciplinary book, on perception, viewed from the angles of physiology — eye and brain —, art and psychology.

Costa was no narrow specialist; he was both a brilliant instructor of laymen and an excellent lecturer to scientists and professionals. Apart from his published scientific work, he wrote encyclopedia chapters: for the Hebrew Encyclopedia on fleas, on mites, and on ticks; and for the Encyclopedia Britannica for the Young, on fleas, on lice, on rhinoceros beetles, and on ticks. Furthermore, he contributed to semi-popular periodicals, *e.g.* *Teva VaAretz* [Nature and Land] on such varied subjects as the domestication of animals; the richness of life in the tropics; small soil

arthropods; mites that feed on fly eggs; the carpenter bee and its 'guests'; the biology of the rhinoceros beetle; and the mites associated with the rhinoceros beetle.

Dr. Costa will be sorely missed. This country can boast of only few such versatile and cultured scientists with such astounding multifaceted interests. He is survived by his loving wife Yardena who, with indefatigable patience and bravery, encouraged and cared for him during his last 5 years of illness, his sister Miriam, his children Amos, Ruthi, Yoram and Gideon, and four grandchildren.

**The Kibbutznik.** Costa came to Kibbutz Mishmar HaEmeq at the age of 12 and his destiny was firmly bound up with that of the kibbutz. He was a teacher at the school where he had studied and at the teachers' seminary, professor at Haifa University, but, above all, a dedicated and proud kibbutz member. He refused tempting offers to join the staff of the Hebrew University of Jerusalem or Tel Aviv University, because he considered kibbutz life as the right and ideal form of life.

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