



ANTONIO FREDERICO CAMPANER
(1945-1989)

Antonio Frederico Campaner was 44 years old on 18 August 1989 when he died on that day from complications of a stroke. He had suffered an initial stroke on 4 November 1988, which paralyzed the right side of his body, although by mid-1989 he had recovered enough coordination to send handwritten notes and letters.

Antonio Frederico Campaner was born in Brazil and raised in Ribeirão Bonito (São

Paulo State). His curiosity about the world of biology developed by the time he had finished his secondary courses. At the University of São Paulo he became interested in the classification of arthropods while receiving a Licenciado in Biological Sciences from its Faculty of Philosophy, Science, Letters, and Humanities in 1969, and in 1970 a bachelor's degree in Biological Sciences from the university's respected Insti-

tute of Biosciences. Fred became a copepodologist as a postgraduate student while studying the planktobenthic copepods from the Brazilian continental shelf. He completed a master's degree on that subject in 1975, and for his Ph.D. thesis, he concentrated on calanoid copepods of the families Aetideidae and Phaennidae in his continental shelf samples. Throughout his research career Fred continued his education in biology and biological oceanography through formal courses and personal study.

After receiving his Ph.D. in 1976, Fred successfully competed for a position as Assistant Professor at the University of São Paulo. There he taught courses in general biology, invertebrate biology, and zooplankton. Fred was active among the group of copepodologists associated with the University of São Paulo, and a member of national and international societies including the World Association of Copepodologists.

Fred's research reflected his interests in systematics of calanoid copepods and the ecology of zooplankton, especially copepods. His contributions to the first subject grew out of his work with planktobenthic samples from the continental shelf which brought him in contact with rare and incompletely characterized species associated with that habitat. His descriptions of new calanoids show attention to subtle morphological detail; strong, clear lines are the signature of his illustrations. In a relatively short period of time he described six species new to science: *Parapseudocyclops giselae* (in 1977), *Bradyidius plinioi*, *Paracomantenna magalyae*, *Xanthocalanus marlyae*, *Brachycalanus bjornbergae* (all in 1978), *Scolecithricella pseudoculata* (in 1979), and later *Gaussia asymmetrica* (in 1988 with Tagea K. S. Björnberg).

Fred's work with these species stimulated his interests in several incompletely defined calanoid genera: among the aetideids, *Bradyidius*, *Bryaxis*, *Comantenna*, *Paracomantenna*; the phaennids, *Brachycalanus*, *Talacalanus*, *Xanthocalanus*; the scolecithricids, *Scaphocalanus*, *Scolecithricella*, with their beautifully modified sensory setae on maxilla 2; and the arietellid genera *Arietellus*, *Metacalanus*, *Paraugaptilus*, *Paramisophria*, *Parapseudocyclops*, *Rhapidophorus*, *Scottula*, *Scutogerulus*. In his published studies he contributed to careful redefini-

tions of these genera, established *Parapseudocyclops*, and removed the genus *Phyllopus* to its own new family Phyllopidae.

Fred's research on zooplankton ecology focused on copepods of both planktobenthic and open-water communities on the Brazilian continental shelf. He documented which species inhabited the two communities, and compared spatial and seasonal variability as well as community structure. More recently he began to examine copepod predation by relating occurrences of the common herbivore *Calanoides carinatus* to larvae of the commercially important fishes *Engraulis anchoita* and *Sardinella brasiliensis*. Sadly these and many other interesting lines of research on copepods must now be brought to a close.

Fred's stroke of November 1988 was a terrible physical shock; yet he was able to keep his emotional equilibrium. In a letter from São Paulo, 3 March 1989, he accepted the challenge of recuperative physical therapy with this simple story: "My niece, 7, and I used to play at being teacher (she) and a scholar (me). I deliberately made mistakes, but she always gave me good marks. Now I am doing similar lessons, but my mistakes are not created for fun!" Antonio Frederico Campaner was an excellent copepodologist and a very gentle man.—Frank D. Ferrari, Smithsonian Institution, Washington, D. C. 20560.

PUBLICATIONS OF ANTONIO FREDERICO CAMPANER

- Campaner, A. F. 1972. Distribuição de copépodos em águas de plataforma de fundo.—Res. V Congresso Bras. Zool., pp. 62–63.
- Avelar, W. E. P. *et al.* 1973. Contribuição ao conhecimento das comunidades bênticas da Ilha Porchat e arredores (Estado de São Paulo).—Ciência e Cultura, São Paulo 25(6): 353. Número especial.
- Campaner, A. F. 1977. New definition of the Arietellidae (Copepoda, Calanoida), with the description of a new genus and species and separation of the Phyllopidae fam. n.—Ciência e Cultura, São Paulo 29(7): 811–818.
- Björnberg, T. K. S., A. F. Campaner, and H. Noguti. 1977. Distribuição de copépodos (Crustacea) em águas de plataforma continental ao largo do Brasil.—Resúmenes IV Simp. Latinoamericano de Oceanogr. Biol., Univ. Guayaquil, Ecuador, pp. 51–52.
- Campaner, A. F. 1978. On some new planktobenthic Aetideidae and Phaennidae (Copepoda, Calanoida) from the Brazilian continental shelf. I. Aetideidae.—Ciência e Cultura, São Paulo 30(7): 863–876.
- Campaner, A. F. 1978. On some new planktobenthic Aetideidae and Phaennidae (Copepoda, Calanoida)

- from the Brazilian continental shelf. II. Phaennidae.—*Ciência e Cultura*, São Paulo 30(8): 966–982.
- Campaner, A. F. 1979. On a new planktobenthic scolecithricid copepod (Calanoida, Crustacea) from the Brazilian continental shelf.—*Boletim de Zoologia*, Univ. de São Paulo 4: 81–87.
- Campaner, A. F. 1981. Resultados preliminares sobre a ocorrência e distribuição de copépodos ao largo de Cabo Frio, Brasil.—*Seminários de Biologia Marinha*. Rio de Janeiro, Academia Brasileira de Ciências, pp. 261–282.
- Björnberg, T. K. S. *et al.* 1981. Copepoda.—In: D. Boltovskoy, ed., *Atlas del zooplankton del Atlantico Sudoccidental y métodos de trabajo con zooplankton marino*. Pp. 603–679. Mar del Plata, Inst. Nacional Invest. Desarrollo Pesquero.
- Campaner, A. F. 1984. Some taxonomic problems within the Arietellidae (Calanoida).—*Crustaceana*, supplement 7: 102–109.
- Campaner, A. F. 1984. *Scaphocalanus* and *Scolecithricella* (Copepoda, Calanoida, Scolecithricidae) from the epipelagial off southern Brazil: a taxonomic and distributional survey.—*Boletim de Zoologia*, Univ. de São Paulo 8: 165–188.
- Campaner, A. F. 1985. Occurrence and distribution of copepods (Crustacea) in the epipelagial off southern Brazil.—*Boletim do Instituto Oceanográfico*, São Paulo 33(1): 5–27.
- Campaner, A. F. 1986. Planktobenthic copepods from the southern Brazilian continental shelf.—*Syllogeus*, National Museums of Canada 58: 259–266.
- Campaner, A. F. 1986. Are *Gaetanus* and *Gaidius* a single genus?—*Boletim de Zoologia*, Univ. de São Paulo 10: 95–98.
- Campaner, A. F. 1989. Supplementary description of *Macandrewella chelipes* (Giesbrecht, 1896) from the Gulf of Elat (Copepoda: Calanoida: Scolecithricidae), and comments on its relationships with *Scottocalanus* Sars and *Scolecocalanus* Farran.—*Israel Journal of Zoology* 35: 229–235.
- Björnberg, T. K. S., and A. F. Campaner. 1988. On *Gaussia* Wolfenden (Copepoda, Calanoida, Metridinidae).—*Biology of Copepods*, Proceedings of the Third International Conference on Copepoda. *Hydrobiologia* 167/168: 351–356.
- Björnberg, T. K. S., and A. F. Campaner. 1990. On the genus *Gaussia* and the species *G. asymmetrica* (Copepoda, Calanoida).—*Crustaceana* 58: 106–112.