

Faculty of Medicine, and at his Gerontology Institute—always were impeccably ordered, as if he did not work there. And yet, he wrote constantly and edited two major journals simultaneously, one in gerontology and the other in ecology. How he did all this remains largely

a mystery. He certainly had efficient secretaries, yet much of his correspondence was in his own neat hand writing. François Bourlière was an exceptional man, what the French call a "polymathe," a Renaissance man in the best sense of the word.

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IN MEMORIAM: PONTUS PALMGREN, 1907-1993

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Pontus Palmgren, an Honorary Fellow of the AOU since 1946, was born in Helsinki, Finland, on 27 April 1907 and died there 26 November 1993. His father was a prominent professor of botany, who as a student had taken an active part in Finland's fight for autonomy and against the "Russification" that started about the turn of the century. Pontus followed in his footprints and became a professor of zoology. When the Soviet Union assaulted Finland in 1939, he was among the first to be decorated for bravery at the frontier.

Palmgren's first large treatise, published in 1928, was an introduction to the problems treated in his Ph.D. thesis two years later. The study of forest ecology was already highly advanced in Finland. A. K. Cajander, professor of forestry, and prime minister of Finland when the Soviet Union attacked, had found that the undergrowth was the most reliable indicator of forest productivity. Palmgren's censuses showed a clear correlation between forest productivity and bird numbers (*Sanicula* > *Oxalis-Myrtillus* > *Myrtillus* > *Vaccinium* types). The undergrowth of these forests consists of a large number of plant species, of which these are the most typical, and have lent their names to the different types. In 1936 he established a similar correlation in respect to Thienemann's and Naumann's lake types, eutrophic and oligotrophic.

Palmgren's data also threw light on the autoecology of bird species, their varying abundance in different habitats raising the question of the factors controlling habitat selection. In

1932 he was able to provide answers with respect to two species, the Goldcrest (*Regulus regulus*) and the Willow Tit (*Parus montanus*). A minor variation in the loop of the *Tibialis anticus* muscle prevented the Goldcrest from clinging upside down at the ends of birch branches as the Willow Tit can do, and thus excluded the Goldcrest from the birch forests.

In addition to bird censuses in the breeding season and throughout the year and the functional anatomy of bird's legs, he studied the correlation of *Zugunruhe* with meteorological factors, insulating properties of bird's nest structure, daily rhythm, territory and other ethoecological problems, range expansions, and natural selection. During my study years in the 1930s, Palmgren was the only Finnish biologist I heard lecturing about selection.

New avenues of research opened by Palmgren encouraged students in Finland. Between 1936 and 1951, 10 Ph.D. theses in ornithology were published, to a greater or lesser degree inspired by Palmgren. This contrasted with one Ph.D. thesis, J.A. Palmén's on the migratory pathways of birds, 40 years earlier.

Perhaps stimulated by his Goldcrest study—small passerines are keen arachnologists—Palmgren devoted much of his subsequent work to the anatomy, physiology, ecology, and ethology of spiders. His *magnum opus* was a large systematic handbook on the spider fauna of Finland in eight parts (1939-1977).

Palmgren was honored, perhaps one should say burdened, by many important but time-con-

suming commissions: permanent secretary of the Finnish Society of Sciences, Vice-rector of Helsinki University, head of Tvärminne Zoological Station, and editor of *Ornis Fennica*. Palmgren used to quote Galileo Galilei's principle "to measure everything and to make the immeasurable measurable." His life shows the

principle to be as fruitful in studying bird ecology as in studying physics.

A fuller appreciation of his achievements, with a bibliography, was published by Lars von Haartman and Torsten Stjernberg in *Ornis Fennica* (59:1982).