

**Antonio Prevosti, a pioneer of genetics of natural populations in Spain, died in
Barcelona at the age of 92 years**

Francisco Mestres¹, Luis Serra¹, Diether Sperlich²

¹ Dept. de Genètica, Universitat de Barcelona (Spain)

² Biologisches Institut, Eberhard-Karls-Universität, Tübingen (Germany).

Prof. Dr. Antonio Prevosti was born on the 15th of February, 1919, at Barcelona where he grew up and lived with his wife Maria Monclús and his family until his death. Between the years 1939 and 1942 he registered at the University of Barcelona and finished his studies there with the “University Degree in Natural Science” obtaining the extraordinary award of his promotion. Immediately afterwards he started his research about the growth rate of Barcelona school children from two very different social groups at the Anthropology Laboratory of the University of Barcelona. The obtained results were published in his Doctoral Thesis (1948). Further investigations on quantitative traits in human populations improved his knowledge of statistical analyses and provided the basis for a scholarship from the Italian Ministry of Foreign Affairs to work at the Institute of Statistical and Demographical Sciences in Rome directed by Prof. C. Gini.

Besides his statistical research, Prevosti became more and more interested in genetics, a discipline that was not yet established at this time on the university studies curricula in Spain. Being an experienced anthropologist and demographer of human populations, the fields of experimental population and evolutionary genetics appeared especially attractive to him. In 1949, he became a guest investigator at the Italian Institute of Hydrobiology in Pallanza which was lead at this time by Prof. A. Buzzati-Traverso. There, Prevosti became familiar with the breeding and crossing techniques of *Drosophila*. In addition, he was introduced to the systematics of species groups of the genus *Drosophila* and learned the cytological techniques to prepare and to read the giant chromosomes of the larval salivary glands of the flies.

In 1953, he moved to Edinburgh where he worked at the Institute of Animal Genetics of the University for a year. Head of the institute was at this time the famous Prof. C. H. Waddington. Prevosti became familiar with methods of *Drosophila* population genetics and carried out experiments to see and to measure the effect of artificial selection. *D. subobscura* appeared especially suitable to study the question whether seasonal and geographic variation of wing size can be found in this species. He not only found that temperature dependent variation exists but also that the values of the quantitative trait “wing size” show a geographical clinal distribution with high values in the North and low values in the South. He was invited to present the results of these studies at the Cold Spring Harbor Symposia on Quantitative Biology (Prevosti A. 1955: Geographical variability in quantitative traits in populations of *Drosophila subobscura*. Cold Spring Harbor Symposia on Quantitative Biology **20**:294-299).

Prevosti became head of the Department of Genetics at the University of Barcelona in 1963 and remained in this position until the year 1986. In his laboratory he supervised as a University Professor many students who were working for their doctoral thesis. Some of them continued their studies at the University of Barcelona or elsewhere and become internationally recognized scientists. To mention some of them the following names can be written down here: Antonio Fontdevila, Roser Gonzalez-Durate, Jaume Baguñà, Montserrat Aguadé, Lluís Serra and Francesc Mestres.

Later, Prevosti centered his investigations on the relationship between the chromosomal polymorphism of *Drosophila subobscura* and wing length. Furthermore, as a measure for the degree of heterozygosity he used the degree of chromosomal inversion polymorphism in the various lines. The result was that lines with low wing size values were practically homokaryotypic while in lines with high wing sizes a considerable degree of inversion polymorphism was found. Subsequently, Prevosti decided to concentrate on studies dealing with the effects of the chromosomal inversion polymorphism in wild populations of *D. subobscura*. For him it was clear that the first steps of evolution are always taking place in populations. However, Prevosti was not the only scientist who became interested in these problems at this time. Mainly influenced by Theodosius Dobzhansky, the famous population geneticist in USA, the general question how populations get adapted to their different environments became very attractive and populations of the European species *Drosophila subobscura* were thought

to be very appropriate to explore this subject. For this purpose various samples of *D. subobscura* from wild populations were taken simultaneously and analyzed with respect to the chromosomal inversion polymorphism in a number of different European laboratories: Antonio Prevosti and his group in Barcelona, Hans Burla in Zürich, Felix Mainx in Vienna, Diether Sperlich and Wilhelm Pinsker in Vienna and in Tübingen, Dragoslav Marinkovic and Marko Andjelkovic in Belgrade, Costas Krimbas in Athens, to name a few. The cooperation between the various groups was excellent and Prevosti was an important member of this process

One of the most important contributions to the question how populations adapt to their environments were the results about the colonization of *D. subobscura* in Chile and in the North-Western part of North America published by Prevosti and his co-workers. Among the results obtained, the striking genetic similarity of the pattern of inversion polymorphism between the colonizing populations of North- and South America indicates a common origin of both colonizations. Chromosomal arrangement clines were detected similar to those observed in the Palearctic region, supporting the adaptive value of the inversions. Since the start of the colonization is a relatively recent event (*D. subobscura* was detected for the first time in Chile in 1978, and in the State of Washington, USA, in 1982) it was possible to investigate the evolutionary changes from the very start and the following years. These natural experiments can be considered as an ideal model system for the study of evolutionary changes (Prevosti A, Ribó G, Serra L, Aguadé M, Balaña J, Monclús M, Mestres F (1988) Colonization of America by *Drosophila subobscura*: Experiment in natural populations supporting the adaptive role of chromosomal-inversion polymorphism. Proc. Natl. Acad. Sci. USA **85**:5597-5600).

On 1st of September 1989 Prevosti died. Those who knew him well will never forget his passion for scientific research and his moderate and fair character.

Figure legend:

Antonio Prevosti at an age of 60 years.

Corresponding author: Diether Sperlich, Biologisches Institut, Eberhard-Karls-Universität, Auf der Morgenstelle 28, D 72076 Tübingen (Germany),
diether.sperlich@uni-tuebingen.de