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Beniamino Segre

by

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As a former student of late Professor Beniamino Segre I was asked to write a few pages to commemorate him. This is quite a difficult task, indeed. He was an eminent man and a great mathematician who contributed with many deep and original ideas to several branches of mathematics.

Beniamino Segre spent the early years of his life in Turin, the city where he was born on February 16th 1903. There he took his university degree and there were famous mathematicians among his teachers, such as Giuseppe Peano, Gino Fano, Guido Fubini and Corrado Segre. In Turin he also started his academic career as an assistant professor at the age of twenty.

A Rockefeller scholarship allowed him to study with Elie Cartan in Paris and after some years spent in Rome with Francesco Severi he became full professor in 1931 and hold the chair of Analytic, Projective and Descriptive Geometry at Bologna University.

Already a married man with children, he had to leave Italy in 1938 because of racial laws. His beloved wife Fernanda Coen, a very remarkable woman, was a great support to him not only during the eight years they spent in England but throughout their life. They were extremely close and his death followed that of his wife; indeed, it occurred almost exactly one year after, on October 2nd 1977.

For twenty-three years Segre has been teaching in Rome, where he arrived in 1950. He both held the chair of Higher Geometry and gave advanced geometry courses at the Istituto Nazionale di Alta Matematica. Twice he was the president of the Accademia Nazionale dei Lincei which through long years he enlivened by proclaiming its cultural and scientific functions as well as its social functions, the latter ones being — in his opinion — too often forgotten.

He was a fellow of many Italian and European Mathematical and Philosophical Societies and on the directorial board and the scientific committee of several important mathematical reviews.

The many prizes and awards he was given testify how widely known and considered Beniamino Segre was all over the world.

One among the greatest protagonists in Mathematics from the thirties to the seventies he contributed to the development of algebraic geometry, combinatorial analysis, differential geometry, algebra, topology, analytic functions theory, arithmetics and also of applied mathematics. Since he considered extremely important the links among the different branches of scientific knowledge, he devoted himself to so many different mathematical fields and organized meetings to have men of culture exchange their ideas.

During the first years of his scientific life, namely up to 1954, Beniamino Segre mainly devoted himself to algebraic geometry following the Italian school. However, he was not a mere follower; he stays between classical and modern algebraic geometry, the latter using technics with a deeper algebraic-differential-topological content. Indeed, he both knew the problems and methods in classical algebraic geometry and yet sensed the requirement of a greater accuracy in modern algebraic geometry. His main contribution to this branch of geometry concerns birational invariants of algebraic varieties and investigations of singularities. The links projective-differential geometry has with algebraic geometry and many other mathematical fields were the starting points of many contributions he gave to projective spreads, non-Desarguesian planes, Diophantine equations, just to mention some of them.

The importance of Beniamino Segre's contributions to classical mathematics is somehow shadowed by the fundamental role he played in building up the new combinatorial geometry. His note "Sulle ovali nei piani lineari finiti" (On ovals in finite projective planes) in the *Rendiconti dell'Accademia Nazionale dei Lincei* marks the birth, in 1954, of combinatorial geometry. He did a pioneer work in this branch which he got interested in during the late forties as his book "Lezioni di geometria moderna", published in 1948, shows.

Segre soon realized that not only from a theoretical point of view but also with a look at applications the investigation of finite and discontinuous structures as opposed to infinite and continuous ones has a fundamental importance.

In combinatorics Beniamino Segre poured both his enthusiasm and geometric mind, successfully proving many new results and suggesting many research problems, some of them still open.

The theory of k -arcs and k -caps will always be linked with his name and his contributions to the knowledge of Hermitian varieties provide the basis for any further investigation of the subject.

In Beniamino Segre's scientific work a constant aim appears to solve all problems as generally as possible and to point out the links among the different branches of mathematics.

Even if several Italian geometers were quite hostile when combinatorial geometries started to win their own place in mathematics, he kept believing in combinatorics, also because he realized that no other mathematical branch

emphasizes in such a nice way the very deep meaning of geometric structures.

Segre's papers all show a precision and a formal correctness closely linked with the content. Nothing was left out and he had a great skill to construct some unbelievable examples.

He lived for science's sake and taught the sacrifice and complete dedication this requires and what he asked from himself — and it was quite a lot — he asked from others. Sometimes it was difficult to deal with him because of this brusqueness, but he had a great sensitivity and all who worked with him can testify his caring concern.

The name of this great man already belongs to the history of mathematics among those who much gave to science and knowledge.

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