Academician Giorgi Chogoshvili

Academician Giorgi Chogoshvili, an outstanding Georgian scientist, died in Tbilisi on June 14, 1998 at the age of 83. He was the pioneer of algebraic and topological research in Georgia and the founder of the Georgian topological school.

G. Chogoshvili entered Tbilisi State University in 1931 but after a year, continued his education in Moscow State University, where, in 1939, he received his Candidate of Science degree. From 1940 to the last day of his life G. Chogoshvili was working at the A. Razmadze Mathematical Institute of the Georgian Academy of Sciences and at Tbilisi State University. In 1945, he was granted the Doctor of Science degreeand, in 1960, was elected as a Member of the Georgian Academy of Sciences.

G. Chogoshvili began his scientific research at the time when algebraic topology was a newly founded branch of mathematics. He had always been in the first ranks of researchers and made remarkable contributions to this area of mathematical research.

G. Chogoshvili's initial works dealt with the variation of topological properties of a moving level surface and of a domain of smaller values at a critical point of a function defined on the manifold with boundary. He described the procedure of obtaining a postcritical level surface from the subcritical, which is nowadays called the surgery. He showed that the Lusternik-Schnirelman category of level surfaces can change by unity at most after the critical point is passed. The obtained results were used to study the problem of deformation of Riemann manifold hypersurfaces. Only the some part of these results were previously obtained by Morse and a few results were obtained through independent research by other authors. These results formed the basis of G. Chogoshvili's dissertation for the Candidate of Science degree.

G. Chogoshvili's subsequent research was devoted to the construction and study of the homology theory of general spaces. By that time a satisfactory homology theory had been constructed for compact spaces. There was a need to extend the homology theory to broader classes of spaces obtained by studying the concrete problems. For instance, the homological properties of a complement of an infinite polyhedron embedded into a sphere were unknown.

According to Alexander's duality theorem, a homology group of a compact subset of the sphere with a compact group of coefficients and a homology group of a complement with a discreet group of coefficients are dual in the sense of theory of group characters if the coefficient groups are dual. G. Chogoshvili extended the duality to an arbitrary subset. He approximated this subset by a direct system of its compact subsets, while the complement was approximated by a system of its open neighborhoods. The compact subsets of a space give rise to a direct system of homology groups.

G. Chogoshvili gave a definition of the limit of a direct system of compact groups, which is compact. Using this approach, G. Chogoshvili applied a unified treatment to various generalizations of Alexander-Pontryagin's duality theorems. Later these fundamental results of G. Chogoshvili were essentially used by P. S. Alexandrov, K. A. Sitnikov and N. Berikashvili.

During the last years of his life G. Chogoshvili was working on the construction of homotopy groups suitable for various homology theories.

G. Chogoshvili's scientific works were remarkable contributions to topology but were not the only area of G. Chogoshvili's activities. Founding the Georgian schools of topology and algebra was one of his most outstanding achievements. The results obtained by the researchers of these schools are well known in the world mathematical community.

G. Chogoshvili's powerful intellect, refinement, strong character and humanity appealed to everybody who knew him.

Academician Giorgi Chogoshvili was and remains a Teacher.