



SERGEI ALEKSANDROVICH AMBARTSUMYAN (80TH BIRTHDAY TRIBUTE)†



Academician S. A. Ambartsumyan, the great scientist, developer of innovative research in the field of the mechanics of deformable bodies and one of the founders of the Scientific School of Mechanics in Armenia, has celebrated his 80th birthday.

He was born on 17 March 1922 in Aleksandropol' (Gyumri). His father was a lawyer. In 1942, he graduated from the Yerevan Polytechnic Institute, in 1946 he gained his first higher degree, in 1952 he became a Doctor of Technical Sciences and in 1953 he was made a Professor. In 1956 he was elected a Corresponding Member and in 1965 an Academician of the Armenian Academy of Sciences.

His working life began in 1940. From 1942 to the present day he has taught in higher educational establishments of Armenia and worked in Armenian scientific research institutes. He was Director of the Institute of Mathematics and Mechanics and the Institute of Mechanics of the Armenian Academy of Sciences. He was elected Secretary of the Department of Physicotechnical Sciences and Mechanics and Vice-President of the Armenian Academy of Sciences. For 14 years he was the Rector of the Yerevan State University, and for 20 years Deputy Chairman of the Armenian Supreme Soviet and a Deputy and Member of the Praesidium of the USSR Supreme Soviet. For over 30 years he has been a member of the Praesidium of the Armenian Academy of Sciences. He is also an Honorary Director of the Institute of Mechanics of the Armenian Academy of Sciences and Honorary President of the Armenian Engineering Academy.

His work on the theory of the strength, stability and vibrations of anisotropic laminated shells and plates, on heteromodulus elasticity theory and on the electromagnetoelasticity of thin bodies is widely

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known throughout the world and has made an important contribution to world science. The scientific results he obtained have been widely used in modern technology, in particular to solve problems of the optimum design of thin-walled structures, to construct thin-walled systems manufactured from modern materials with specific physicomachanical characteristics and to develop structures and instruments which interact with strong physical fields (electromagnetic, temperature, etc.). He was the first to develop a general classical theory of anisotropic laminated shells. His monographs "The Theory of Anisotropic Shells" (1961), "The Theory of Anisotropic Plates" (1967, 1987), "The General Theory of Anisotropic Shells" (1974) and "Fragments of the Theory of Anisotropic Shells" (1991) received deserved recognition and have become reference books for researchers and in many design offices. They have been translated and published in the United States (1964, 1969, 1990) and Japan (1975).

He is the originator of heteromodulus elasticity theory. With his student A. A. Khachatryan, he provided the mathematical basis for this theory and developed effective methods for analysing rods, plates and shells manufactured from materials with different resistances to tension and compression. This theory was the subject of his monograph "Heteromodulus Elasticity Theory" (1982), which was translated and published in China in 1987.

Professor Ambartsumyan and his students G. Ye. Bagdasaryan and M. V. Belubekyan are rightly considered to have developed the general theory of the electromagnetoelasticity of thin bodies. Having formulated and confirmed the original hypothesis of the magnetoelasticity of thin bodies, they proposed effective methods of solving various applied problems of electromagnetic shells and plates. Using the ideas of his refined theories, new effects of the interaction and mechanical behaviour of thin bodies in strong electromagnetic fields were found. Numerous results of research by him and his students and followers have been summarized in the collective monographs (coauthors G. Ye. Bagdasaryan and M. V. Belubekyan) "Magnetoelasticity of Thin Shells and Plates" (1977), "Some Problems of the Electromagnetoelasticity of Plates" (1991), "Vibrations and Stability of Thin-walled Elastic Plates" (1992) and "Electrically Conducting Plates and Shells in a Magnetic Field" (1996).

Professor Ambartsumyan developed the original micropolar theory of shells and plates, in which his refined shell and plate theory is combined with classical asymmetrical elasticity theory. The results were published in the monograph "The Micropolar Theory of Shells and Plates" (1999).

His scientific interests have also included problems of the thermoelasticity of anisotropic laminated shells and plates, problems of developing new models of viscoelastic bodies, problems of biomechanics, etc.

His scientific research has covered many fields and has been topical and innovative.

He is an honorary and full member and honorary doctor and professor of many academies, scientific societies and universities of various countries of the world. For many years he has been a member of the National Committee of Russia for Theoretical and Applied Mechanics.

He combines research and teaching work with active social and civil activity. His name is inseparably linked with Russian science. For more than 50 years he has successfully collaborated with the editorial boards of celebrated journals of the Russian Academy of Sciences (*Prikladnaya Matematika i Mekhanika* and *Mekhanika Tverdogo Tela*). His services in strengthening friendship and collaboration between the scientists of Russia and Armenia have been considerable.

His activity and scientific work over many years are highly rated and have been marked with many state and scientific awards and prizes.

The editorial board and staff of *Prikladnaya Matematika i Mekhanika* warmly congratulate Professor Ambartsumyan on his birthday, wish him continued health and prosperity, and hope that their enjoyable collaboration with him will continue.

Translated by P.S.C.