Igor' Ekhiel'evich Dzyaloshinskiĭ (on his sixtieth birthday)

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Igor' Ekhiel'evich Dzyaloshinskiĭ, a Corresponding Member of the Academy of Sciences of the USSR, and a prominent and original theoretical physicist, on 1 February 1991 attained his sixtieth birthday. His papers in very different areas of the theory of condensed media are known worldwide. He has made a significant contribution to the theory of magnetism, statistical physics, and the physics of systems of a few dimensions. All the publications of I. E. Dzyaloshinskiĭ are distinguished by the characteristic features of the outstanding personality of the author: unusual erudition, a special intellectual and esthetic level, and an implacably critical expression of opinion. The scientific style of I. E. Dzyaloshinskiĭ, a pupil of L. V. Landau, shows a deep understanding of classical and modern problems of physics.

Already his candidates' dissertation defended in 1957 at once became part of the gold fund of the physics of magnetism. In it I. E. Dzyaloshinskiĭ explained the phenomenon of weak ferromagnetism-the appearance of spontaneous magnetization in antiferromagnetic substances. Since then the term "Dzyaloshinskiĭ interaction" has been generally accepted in world literature. This paper of the young physicist gave rise to a new direction of investigations on this subject and led to the discovery of two new phenomena—piezomagnetism and magnetoelectric effect. In 1972 it was awarded the M. V. Lomonosov prize, and later (in 1984, together with A. S. Borovik-Romanov) was awarded the State Prize of the USSR.

The theory of magnetic phenomena has always remained within the areas of interests of I. E. Dzyaloshinskiĭ. In 1964 he completed a series of papers in which he constructed a theory of helicoidal and sinusoidal magnetic structures. In his papers on magnetism in addition to the exquisite mastery of the mathematical apparatus and clear understanding of the physics of the phenomenon one detects also a feeling for the experimental situation surprising for a refined theoretician.

The publications of I. E. Dzyaloshinskiĭ have played an outstanding role in the creation of new methods of quantum statistical physics, where he developed the so-called temperature technique in field theory. These papers have been incorporated in the classical monograph "Methods of Quantum Field Theory in Statistical Physics" (written together with A. A. Abrikosov and L. P. Gor'kov). This book that has been repeatedly translated and published has become a basic handbook for specialists in the theory of solid state and has defined the area for the work of theoreticians for two decades in advance. For this monograph the authors were



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awarded in 1989 the L. D. Landau prize of the Academy of Sciences of the USSR.

It is difficult even just to enumerate the main directions of the work of I. E. Dzyaloshinskiĭ: quasi-one-dimensional metals, the theory of phase transitions, the Van der Waals forces, the dynamics of spin glasses, defects in liquid crystals and magnetic substances, high-temperature superconductivity, etc. Each of his papers calls forth new investigations, the ideas of which he generously shares with his colleagues and pupils, and with the scientific community.

Igor' Ekhiel'evich has worked for many years in the leading Soviet physics journals—JETP and JETP Letters. In particular due to his strong fundamental criteria of scientific significance, the high international prestige of these journals is being maintained.

We warmly congratulate Igor' Ekhiel'evich Dzyaloshinskiĭ on his anniversary, and wish him health and an interesting creative life no matter where he should be working.

Translated by G. M. Volkoff