LANDAU - GREAT SCIENTIST AND TEACHER

In 1962 a feeling of deep sadness was experienced by the whole scientific world when it was learned that L.D. Landau, one of the most distinguished physicists and teachers of the USSR, has been seriously injured in a road accident. All the resources of his own country and ready assistance from many others combined to save his life, but early this year the long fight to recover his faculties ended with his death.

At the Trieste Symposium on Contemporary Physics in June a large audience including many of the world's leading scientsts assembled to hear a tribute paid by Eugen Lifshitz, Professor of the Institute for Physical Problems, USSR Academy of Sciences, Moscow, to "the great man who for many years was a teacher and friend".

Professor Lifshitz recalled the spontaneous reaction to the news of the accident and the way in which the hospital where he lay became the headquarters of the hundreds who were eager to exert all their powers to help the doctors. From graduate students to members of the Academy of Science, they took day and night turns of duty, maintaining contacts far afield to procure materials and equipment which might be needed. Requests to other countries were always met swiftly and willingly. It was six years before the fight ended, in his sixtieth year.

The secret of this extraordinary popularity was that in addition to being a great physicist he was a fine and kind man with a bright and unusual personality to whom pompousness and solemnity were alien. An example of his humour was the explanation he was accustomed to give for the fact that his nickname was Dau; he attributed it to the fact that people knew French, thereby calling him "l'âne Dau".

Landau was profoundly democratic in scientific life, and was accessible to anyone seeking his advice and/or criticism, from an undergraduate to a professor. The only condition he made was that the problem should be truly scientific, and he fully admitted the right to fall into error in scientific work. His aspiration, contrary to that of much of the flood of scientific literature, was to make complicated things simple, thus bringing to light the true meaning of the laws of nature. He was superb at making confused problems obvious and had an extremely critical mind; in discussions he was sharp but never rude, ironical but not acrimonious, belying the notice he once hung on his office door. This read "L. Landau — be careful, he bites". Always there was profound kindness and an unbiassed enthusiasm for science. In keeping abreast of knowledge it was sufficient for him to grasp a principal idea and then derive

the results in his own way rather than use the author's arguments. Sometimes lack of references in his own papers arose from the fact that, having worked out a conclusion for himself he was unaware of previous work.

A hundred papers produced by Landau were contributions of new ideas or methods. They were in fields such as quantum mechanics, nuclear physics, plasma physics, hydrodynamics, astrophysics (though he did once define astrophysicists as being men who were often in error but never in doubt) and the condensed state. In each of these there were many examples of his own original work as well as in collaboration with colleagues such as Ginsburg and Peierls as in phase transitions — the Ginsburg-Landau phenomenological theory. Perhaps the great feat of his life was his theory of quantum liquids, and for it he was awarded the Nobel Prize in 1962 — after his accident.

As a concluding remark Professor Lifshitz quoted a sentence from "Fundamental Problems", written by Landau as a tribute to Pauli: "The brevity of life does not allow us to enjoy the luxury of spending time on problems which lead us to no results".

POWER REACTORS OF THE WORLD

The usual details of changes in power reactors under construction or operating in Member States will be included in a later issue.

A comprehensive list of "Power and Research Reactors in Member States" giving basic details of power reactors operating, under construction or planned, and of research reactors operating or under construction at January 1968, may be obtained free on request.
