

Victor Ogievetsky in the 1960's

Ivan Todorov

INRNE, Bulgarian Academy of Sciences, Sofia

When in 1959 the Laboratory of Theoretical Physics (LTP) of the Joint Institute for Nuclear Research moved into a new building the group of M.A. Markov - including V.I. Ogievetsky, I.V. Polubarinov, L.G. Zastavenko, G.I. Kopylov, M.I. Shirokov and a few other young theorists - was allocated to the top (fourth) floor. The director of LTP, N.N. Bogolubov, his deputy, A.A. Logunov, and their collaborators (including myself) were on the third. Physicists have become rather competitive, sometimes even aggressive, after World War II; Moscow and Dubna in the former Soviet Union were no exception. The fight for the Physics Department of Moscow University has been recorded in [S10]. One can read honest (in a sense complementary) accounts about the rivalry between the Landau and the Bogolubov schools during the creation and the early years of the LTP and on the wake of Bogolubov's theory of superconductivity in the memoirs of V.G. Soloviev [S94] and D.V. Shirkov [Sh09]. On this background the Igor Tamm's¹ school at the Lebedev Physical Institute ("FIAN") of the Soviet Academy of Sciences and the group of his disciples, Markov and Ogievetsky, in Dubna were favorably distinguished by their relaxed and friendly attitude.

One of my early recollections is the talk by Vitya² on his work [OP] with Igor Polubarinov. It was widely believed (and still is - even among some reputed experts, see e.g. [O10]) that gauge invariance implies vanishing mass for the photon. Victor was clearly explaining that this is not true. Nevertheless many people accustomed to believe authority rather than to think independently remained skeptical. I was happy to learn half a century later that Raymond Stora (1930-2015), one of the last few who knew quantum field theory from inside out, remembered well that paper in the last years of his life and acquainted me with his work [CSZ] of 1969 which was building on the ideas of [OP]. In fact, the collaboration of Ogievetsky and Polubarinov continued with the introduction of the notion of *notoph* - the zero helicity counterpart of the photon whose significance is recalled in [I]. It is characteristic for the time and the situation of V. I. in Dubna that he was not allowed to travel to the West until the 1990's and the results of [OP] have been reported to an international conference by A.N. Tavkhelidze³.

The inclusion in Ogievetsky's command in LTP of Emery Sokatchev from our group of the INRNE in Sofia was notable in many ways but, as the main participants (besides V.I.) are still alive and active, it is for them to tell this story. The subsequent development of the idea of harmonic superspace by V. Ogievetsky, A. Galperin, E. Ivanov, and E. Sokatchev, has been particularly fruitful (see [I]).

My wife and I spent a nice evening together with Victor and his wife Rita in Lausanne (Switzerland) in early 1992. We did not suspect that it will turn out to be our last meeting with him.

1 The life of both Igor E. Tamm (1895-1971) and Nikolay N. Bogolubov (1909-1992) has not been easy. We knew that N.N. has not been admitted to high school - as the son of a priest - and that as a private student of Nikolay Krylov he published his first scientific paper at the age of 15. We only learned much later, during/after the years of Gorbachov's "glasnost" that the brother Leonid Tamm (b. 1901) of I.E. was arrested and executed in 1937, that the brother Alexey Bogolubov (1911-2004) of N.N. has been arrested in 1944 and only liberated from the Gulag after Stalin's death, in 1953. More information about the repressions among physicists in the former Soviet Union can be found in [PMW].

2 Although Ogievetsky was five years my senior, I don't remember having ever used the formal "Victor Isaakievich": Victor was making right away people to feel at ease with him.

3 V.I. reacted to such injustices with a smile. He liked the Russian poet-songwriter Bulat Okudzhava who was singing:
Пока Земля еще вертится,
Господи, твоя власть,
Дай рвущемуся к власти
Навластвовать влать.

References

- [CSZ] C. de Calan, R. Stora, W. Zimmermann, Quantum electrodynamics as limit of a vector-meson theory, *Lett. Nuovo Cimento* **1** (1969) 677-683.
- [I] E.A. Ivanov, Gauge fields, nonlinear realizations, supersymmetry, arXiv:1604.01379v3 [hep-th].
- [OP] V.I. Ogievetskii, I.V. Polubarinov, A gauge invariant formulation of neutral vector field theory, *Sov. Phys. JETP* **14**:1 (1962) 179-184 (Russian original: *ЖЭТФ* **41** (1961) 247-265).
- [O10] Л.Б. Окунь, В.А. Фок и калибровочная симметрия, *Успехи Физ. Наук* **180**:8 (2010) 871-873.
- [PMW] *Physics in a Mad World*, Editor: M. Shifman, World Scientific, 2016 (see, in particular, p. 78).
- [S10] Г.А. Сарданашвили, Борьба за физфак МГУ, Дмитрий Иваненко - суперзвезда советской физики: ненаписанные мемуары, Москва, ЛИБРОКОМ, 2010, 313 с.
- [Sh09] Д.В. Ширков, Воспоминания о Николае Николаевиче, в: *Воспоминания об академике Н.Н. Боголюбове*, ред. В.С. Владимиров и И.В. Волович, М. МИАН, 2009, с. 143-175; см. особенно III. Боголюбов и Ландау, с. 162-170.
- [S94] V.G. Soloviev, Influence of N.N. Bogolubov on the developments of theoretical physics in the Soviet Union, in: *Николай Николаевич Боголюбов, Математик, механик, физик 1909-1992*, Dubna, JINR, 1994 pp. 144-155 (in Russian; also translated by G. Sandukovskaya); see, in particular, Sect. 2: Foundation of the Laboratory of Theoretical Physics and the first years of its existence.