



***Professor Ivane Tarkhnishvili (Ivan Tarkhanov)*** (1846-1908) – Russian and Georgian Physiologist, a progressive humanist scholar, Science popularizer, the author of numerous articles on Human and Animal Physiology for the Blockhouse and Ephron Encyclopedic Dictionary. Professor Tarkhanov is one of the first disciples and followers of Professor Ivan Sechenov – “Father of Russian Physiology and Scientific Psychology” (Ivan Pavlov). Professor Tarkhnishvili during years was the Head of the Department of Physiology at the Academy Military Medicine at Saint Petersburg. Professor Ivane Tarkhnishvili’s *most significant contributions are the Discovery of the Skin Galvanic Reflex (1989) and the Effects of X-rays on the Central Nervous System, Animal Behavior, the Heart, Circulation and Embryonic Development (1896-1903)*. Professor Tarkhnishvili is a pioneer of Psychophysiology and Radiobiology.

Based on *Skin Galvanic Reflex*, Professor Tarkhnishvili introduced the method to measure skin potential. Using this method, it was demonstrated that not only physical stimuli, but mental activity also, resulted in altered skin potential.

The skin galvanic reflex is still used in applied psychopharmacology as a part of the polygraph in lie detection.

Several weeks after Rontgen's X-rays discovery (1896), Professor Tarkhnishvili demonstrated that these rays affect the living functions. These experiments gave rise to the new field of science: Radiobiology. Professor Tarkhnishvili experiments demonstrated that the impairments of reflexes after X-ray exposure depends mostly on the moderating effects of rays on the Central Nervous System. In 1903, Professor Tarkhanov prepared the manuscript regarding the role of X-ray in Medicine and Biology

Professor Tarkhanov's special interest was Electrophysiology. During years he was engaged in the research of phenomenon of summation in the nervous system and the effects of compressed air, oxygen and carbonic acid on nervous system irritability. Of special note are Professor Tarkhanov's studies regarding the Physiology of Aging and Hypnosis. Hypnotic suggestion was the main topic of the books "*Hypnotism, Suggestion and Mind-reading* (1886; translated into French in 1891) and *Suggestion and Hypnotism* (1905), which aroused broad interest in scientific society.

Another well-known hypothesis of Professor Tarkhanov is related with sexual behavior. According this hypothesis, the filling and evacuation of seminal vesicles are the key cause, which lead to sexual arousal and its disappearance in humans and other mammals.

Professor Tarkhanov translated on Russian many foreign textbooks on Medicine and Biology, including *Technical Textbook of Histology*, by L.-A. Ranvier (1876) and *General Muscle and Nerve Physiology* by I. Rosenthal (1879). In addition, from 1892 until 1904, Professor Tarkhanov prepared nearly 160 articles in Physiology and Medicine to the *Brockhaus and Efron Encyclopedic Dictionary* and more than 250 popular articles, where he discussed many important social problems, such as health, hygiene, nutrition, education of children and women, the organization of women's higher medical education in Russia, and radiation safety.

Ivan R. Tarkhanov played an important role in Russian and European physiology. He established a School of physician-investigators of various fields and specialties. From this school emerged eminent physiologists, including V. Y. Chagovets (1873–1941), B. F. Werigo (1860–1925), V. I. Vartanov (1853–1919), N. Cybulski (1854–1919), and V. K. Anrep (1852–1927).

Of special note is a role of Professor Tarkhanov in the History, Science and Education of Georgia. He was the first Georgian physiologist before [Ivane Beritashvili](#). Tarkhanov (Tarkhnishvili) was one of those bridges, through which the people of Georgia joined with the best Russian and European science, education and culture,

The dream of Professor Tarkhnishvili was the development of studies in Physiology in his native country, Georgia. Academician Ivane Beritashvili and his followers realized this dream.

Some selected publications of Professor Tarkhanov are:

- Tarchanoff, J.R. Über die Bildung von Gallenpigment aus Blutfarbstoff im Thierkörper. *Pflüg. Arch. ges. Phys.*, 1874, Bd. 9, 53-65.
- Tarchanoff, J.R. Du rôle des vaisseaux capillaires dans la circulation. *Compt. rend. Soc. de Biol.* 1875, vol. 26, T. I, Sec. 6, 331-333.
- Tarchanoff, J.R. Etude sur les centres psychomoteurs des animaux nouveaux-nés et sur leurs développements dans différentes conditions. *Compt. rend. Soc. de Biol.* 1878, vol. 30, 217-221.
- Tarchanoff, J.R. Über die willkürliche Acceleration der Herzschläge beim Menschen. *Pflüg. Arch. ges. Phys.*, 1885, Bd. 35, 109-137.
- Tarchanoff, J.R. Zur Physiologie des Geschlechtsapparates des Frosches. *Pflüg. Arch. ges. Physiol.*, 1887, Bd. 40, 330-351.
- Tarchanoff, J.R. Décharges électriques dans la peau de l'homme sous l'influence de l'excitation des organes des sens et de différentes formes d'activité psychique. *Compt. rend. Soc. de Biol.* 1889, vol. 41, 447-451.

- Tarchanoff, J.R. *Hypnotisme, suggestion et lecture des pensées*. (Trad. par E. Jaubert). 1-er éd., Paris, 1891; II-me éd., Paris, 1893, Masson. 164 pp.
- Tarchanoff, J.R. Quelques observations sur le sommeil normal. *Arch. Italiennes de Biologie*, 1894, vol. 21, 318-321.
- Tarchanoff, J.R. Influence de la musique sur l'homme et sur les animaux. *Arch. Italiennes de Biologie*, 1894, vol. 21, 313-317.
- Tarkhanov, I.R. Experiments upon the action of Roentgen's X-rays on organisms. *Izvestya. St.-Peterb. Biol. Lab.*, 1896, no.3, 47-52. (in Russian)
- Tarchanoff, J.R. Actions physiologiques des tubes de Crookes à distance. *Compt. rend. Soc. de Biol.* 1897, vol. 49, 740-743.
- Tarchanoff, I. "Dècapitation". *Dictionnaire de Physiologie*, Ch. Rischet, 1898/1899, Paris, Baillière, 681-691.
- Tarkhanov, I.R. *Soul and Body*. 1904, St.-Petersburg, 176 pp.