He created the own school of experimental pharmacology, which was distinguished by original methods of clinical trials, experiments performed on animals, and on their isolated organs. He introduced X-ray examinations of the alimentary tract in medical practice in Poland. Representatives of his school were physicians, later Professors in pharmacology and/or toxicology: Emil Leyko (1888–1975), Władysław Rusiecki (1907–1991), Henryk Sikorski (1892–1940), and Janusz Supniewski (1899–1964) [1].

As their contribution to toxicology, Jerzy Modrakowski with his associates obtained different compounds from medicinal plants and later, they tried to learn their therapeutic and toxic activity. For example, Modrakowski obtained hesperidinum from poisonous cowbane (*Conium maculatum* L.) and carried out research on its toxic and poisoning effects. Another example was his research on an unknown alkaloid, “nimphalinum”, which he obtained from white water lily (*Nymphae alba* L.). It is worth of mention, that as the first researcher in Poland, he made efforts to introduce standardization of medicines obtained from foxglove (*Digitalis purpurea* L., *Digitalis lanata* L.) and from ergot (*Claviceps purpurea* L.) [7].

Improving the methods of experiments performed on animals was another area of his scientific interests. At first, he carried out initial trials on frogs as a classic, most convenient object of experiments. Next trials were performed on young mice and rats. At last, tests were made on bird species, which were selected carefully, according to specificity of experiments. For instance, hypnotic medicines were tested on forest birds, chaffinches (*Fringilla coelebs*). When birds died, Modrakowski performed autopsy and looked for traces of unknown biological effects, including toxic effects.

The testing of biological activity of valerian can be an interesting example of technique which was worked out by Jerzy Modrakowski. At first, he gave rabbits a caffeine injection. When animals became very fidgety and lively, they got a valerian solution. Decreasing liveliness of rabbits was recorded on a blackened cylinder and a specially built wheel, which marked a number of movements in a specific period of time.

The last illustration could be Modrakowski’s tests of analgesics on mice. This method consisted of marking temperature at which a mouse pulled out its tail from water slowly heated up.

During toxicological and pharmacological experiments a production of extracts from medicinal plants was the most difficult task. Extracts had to be right for animals. It meant that researchers could not use alcohol, chloroform, ether or acetone, because these solvents were too toxic. On the other hand, water extracts had to be concentrated and needed gastroscopy.

These difficulties let us understand reasons for which, only when testing new medicines on isolated animal organs was introduced, toxic doses of medicines could be set [8].

Recapitulating, in the interwar period the toxicology of medicines came into being, and Jerzy Modrakowski was the witness and one of the main characters of this process.

A. Magowska

**SPOJRENIĘ NA KORZENIE POLSKIEJ TOKSYKOLOGII — JERZY MODRAKOWSKI (1875–1945)**

**Streszczenie**

W okresie międzywojennym polska toksykologia posiadała znaczący, lecz mało znany dorobek. W artykule przedstawiono sylwetkę prof. Jerzego Modrakowskiego (1875–1945), lekarza, farmakologa i toksykologa, który stworzył własną szkołę naukową badań farmakologicznych i toksykologicznych, przeprowadzanych na zwierzętach. Artykuł ten, poświęcony historii toksykologii w Polsce, jest humanistyczną refleksją przypominającą o znaczeniu, jakie dla rozwoju nauki ma jej społeczny, polityczny i kulturowy kontekst.

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