

NASSER GUITI (1914-2004)

FATHER OF EXPERIMENTAL MEDICINE IN IRAN

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INTRODUCTION

Nasser Guiti was born on 23 August 1914 in Tehran. He was among the first group of students who entered the newly established *University of Tehran* to study medicine. He graduated from the medical school in 1940 with distinction. As undergraduate student he joined Department of Physiology as assistant technician. He continued his education in physiology in Tehran, Paris, New York and Marseille. He was awarded a doctoral degree (D.Sc.) in Clinical Physiology from Pennsylvania State University in 1954 (1). His special interest was Electroencephalography (EEG) and he was the first person who introduced EEG for clinical practice and research in Iran. He was offered the chair of Experimental Medicine in Tehran University where he established the **Institute of Experimental Medicine** in 1967 (2). This institute became one of the leading organisations in biomedical research, which broke the ice of research inactivity in Iran in 1960s.

Professor Guiti was one of the main founders of the **Iranian Society of Physiology and Pharmacology** (established in 1968), which became an official member of the International Union of Pharmacology (IUPHAR) and International Union of Physiological Sciences (IUPS) in 1969 and 1971, respectively (3). Guiti was a prolific writer who published several articles and books. After 35 years of academic activities he resigned from his position in Tehran University in 1973. He passed away in 2004 and is buried in *Père-Lachaise* in Paris.

Institute of Experimental Medicine

Professor Guiti gave his first lecture as the chair of experimental medicine in *Ibn e Sina* theatre in 1956. His lifelong ambition was to establish a respectable institute devoted to medical research with modern organization and building. He suggested foundation of the **Institute of Experimental Medicine** to the head of the Faculty, which was not being accepted until the third request in 1958 when the proposal was approved by the University after consultation with the World Health Organization (WHO) (2). Professor Guiti himself suggested the initial design of the building based on his personal observations from international institutes of experimental medicine in Paris, Brussels, Stockholm, St. Petersburg, New York and Montreal. The initial design was then completed by Architect Houshang Sayhoon who was head of the Faculty of Fine Arts in Tehran University. The total cost of the building was 36 million Rials which was provided through a budget from Tehran University and the Ministry of Planning and Budget (2). The Institute was formally opened in 1967.

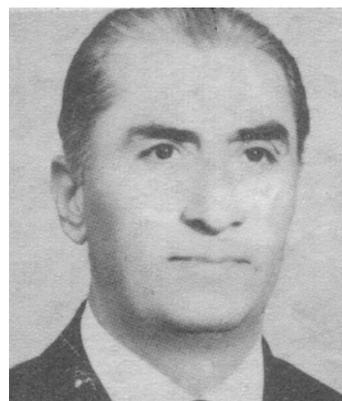


Figure 1. Professor Nasser Guiti (1914-2004).

Father of experimental medicine in Iran

The Institute is located in Northeast side of *Ibn e Sina* theatre and has three floors and one amphitheatre (Since October 2005, this amphitheatre is named after Professor Guiti). The first floor consists of offices for the lecturers as well as administrative staff, café teria, library, committee room and a dark room for image processing. The second floor contains six laboratories for experimental research on laboratory animals (laboratories for cardiovascular, respiratory, renal and electrolytes, nervous system and skeletal muscles, gastrointestinal and metabolic research), a clinical laboratory for electroencephalography, cold room and an operating theatre. The third floor consists of one tutorial room, two tutorial laboratories, chemical store, technical workshop and a unit for experimental animals (rodents, canines and primates). There were two elevators in the building to separate transportation of staff and students from laboratory animals inside the Institute.

This setting was a very modern organization in 1960s and became a member of the only twenty departments in the world, which were devoted to experimental medicine in early 1960s (2). The Institute became the pioneer of world-class medical research in Iran, which attracted investigators from well-known universities (*e.g.* Dr. Frank Michal from Cambridge University in the period of 1975-1979). The Institute is now the home of Department of Pharmacology in Tehran University of Medical Sciences.

Iranian Society of Physiology and Pharmacology

The next step after foundation of the Institute was establishment of a society for the handful Iranian scientists who were interested in modern Physiology and Pharmacology. **The Iranian Society of Physiology and Pharmacology (ISPP)** was formed with 26 members on 1st of May 1968 (3). Foundation of the society was followed by holding the 1st Iranian Congress of Physiology and Pharmacology in 1969 with 59 participants and 21 oral presentations (2). Scientific meetings were organized every other four year at the very beginning of the ISPP birth. However, since the early 1990s, scientific meetings are held biannually by the Society, hosted by departments of physiology or pharmacology in one or other of the Iranian Universities. This Society was the first Iranian scientific society, which became a member of International scientific organization such as International Union of Pharmacology (IUPHAR), International Union of Physiological Sciences (IUPS) and International Committee of Scientific Unions (ICSU) in 1969, 1971 and 1973, respectively (3).

Guiti and his scientific ideas

Professor Guiti wrote several text books in pharmacology, clinical physiology and experimental medicine. The unique aspect of his works was his views on methodology of modern scientific research. In his view, pharmacology was not just the science of studying drug's action but was an approach for investigating the mechanism of disease. He regarded pharmacology as a valuable tool to



Fig. 2. Logo of Iranian Society of Physiology and Pharmacology designed in 1968.

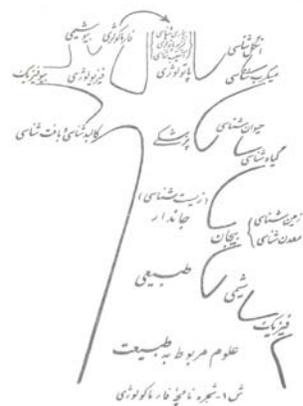


Fig. 3. The pedigree of pharmacology and its relation to the other branches of science. The graph is adapted from the introduction chapter in Guiti's textbook of medical pharmacology (4).

study pathology. The textbook of medical pharmacology, which he wrote for medical students, starts with the pedigree of pharmacology with an arrow connecting Pathology to Pharmacology (4) (Figure 3).

His publications

Professor Guiti was a prolific writer. He published 12 books in Farsi, 15 articles in English [including an article published in *Nature* (5)], 1 article in French and 31 articles in Farsi.

Selected list of publications

A) *Peer-reviewed articles in international journals*

- 1 Guiti N, Abtahi F. Pharmacological effects of doxycycline on the mammal's intestine and cardiovascular system. *Chemotherapy*. 1973; 19(2): 65-74.
- 2 Lalezari I, Hatefi M, Khoiyi MA, Guiti N, Abtahi F. Synthesis and pharmacological activity of dialkylaminoalkyl esters of benzoic acids containing fluorine or trifluoromethyl groups. *J Med Chem*. 1971; 14(11): 1138-40.
- 3 Guiti N, Kermani MH, Sadeghi Dj. Experimental study on the mechanism of cardiac failure in the diffused anoxia and acute local ischemia of myocardium in dog. *Acta Med. Iranica*. 1971; 14: 1-8.
- 4 Posti A, Guiti N. Effect of methylthiouracil on the serum protein fraction in dogs. *Acta Med. Iranica*. 1970; 13: 57-62.
- 5 Guiti N, Sadeghi Dj. Experimental study on the effect of cerium on the blood oxygen saturation in the dog. *M.E.J. Anaesth*. 1970; 60: 154-155.
- 6 Sadeghi D, Guiti N. Pralidoxime iodide (PAM) and toxogonin as antidotes in acute malathion intoxication in the dog. *Isr J Med Sci*. 1970; 6(1): 154-6.
- 7 Guiti N, Kermani MH. The effects of the four major antibiotics on the motility of the isolated rabbit jejunum. *Chemotherapy*. 1970; 15(2): 65-9
- 8 Guiti N, Sadeghi D. Acute toxicity of malathion in the mongrel dog. *Toxicol Appl Pharmacol*. 1969; 15: 244-5.
- 9 Guiti N, Pousti A. Effects of thyroidectomy on the serum protein fraction in dogs. *Acta Med Iranica*. 1969; 12: 35-41.
- 10 Pousti A, Guiti N. Effects of methylthiouracil on basal metabolism rate and cholesterol level in dog. *Acta Med. Iranica*. 1968; 11: 95-104.
- 11 Guiti N, Pousti A, Djahanguiri B. Experimental study on the mechanism of arterial hypotension produced by diphenhydramine in dog. *Med. Pharmacol. Exp*. 1967; 16: 11-16.
- 12 Djahanguiri B, Guiti N. Inhibitory effect of chlorpromazine on alterations in electroencephalograms induced by lysergic acid diethylamide in dogs. *Nature*. 1966; 212(57): 87-8.
- 13 Guiti N, Djahanguiri B, Mehdizadeh H. Analyse quantitative delectroencephalogrammes repetes chez le chien soumis a lefet du diethyl lysergamide (LSD25) *Electroencephalogr Clin Neurophysiol*. 1966; 21(1): 80-4.
- 14 Guiti N, Jahangiri B, Pousti A, Sadeghi J. A pharmacodynamic study of a calve's plasma extract. *Med Pharmacol Exp Int J Exp Med*. 1966; 14(2): 191-204.
- 15 Botelho SY, Cander L, Guiti N. Passive and active tension-length diagrams of intact skeletal muscle in normal women of different ages. *J Appl Physiol*. 1954; 7(1): 93-8

B) *Books in Farsi*

- 1 Guiti N. *Technique of Physiology*. Techehr Publishing Co., Tehran (1948)
- 2 Guiti N. *Electroencephalography*. In Pirooz Azizi S. (Editor) *Medical Semiology*. Ferdousi Press, Tehran (1956)

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- 3 Guiti N. Sexology. Ferdousi Press, Tehran (1957)
- 4 Guiti N. Clinical Physiology. Tehran University Press, Tehran (1957)
- 5 Guiti N. History and Principles of Experimental Medicine. Tehran University Press, Tehran (1957)
- 6 Guiti N. Experimental Medicine: Experimental Physiopathology (volume I). Tehran University Press, Tehran (1960)
- 7 Guiti N. Experimental Medicine (volume II). Tehran University Press, Tehran (1960)
- 8 Guiti N. Pharmacology (volume I). Tchehr Publishing Co., Tehran (1962)
- 9 Guiti N. Physiology and Pathology of Visual System. Tehran University Press, Tehran (1963)
- 10 Guiti N. Text book of Medical Pharmacology. Tchehr Publishing Co., Tehran (1966)
- 11 Guiti N. Physiology of Pulmonary and Renal system . In Ordobadi X (Editor) Text book Internal Medicine (volume II). Tchehr Publishing Co., Tehran (1970)
- 12: Guiti N. Physiology of Skeletal system. In Ordobadi X (Editor) Text book Internal Medicine (volume III). Tchehr Publishing Co., Tehran (1971)

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4. Guiti N. Text book of Medical Pharmacology. First Edition. Tehran: Tchehr Publishing Co.; 1966.
5. Djahanguiri B, Guiti N. Inhibitory effect of chlorpromazine on alterations in electroencephalograms induced by lysergic acid diethylamide in dogs. *Nature*. 1966; 212(57): 87-88.