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EDITORIAL

Space medicine: Origins and current status in México[☆]



Medicina espacial: Los inicios y el estado actual en México

Who will be the Christopher Columbus of some planet in the not too distant future?

Amado Nervo

Hubertus Strughold was a German physician who was born in 1898 in Westtuennen, Westphalia. He studied Medicine and Natural Sciences in the Universities of Munster, Göttingen, Munich and Würzburg. His interest in aero-, and later space medicine, was obvious from the beginning of his professional career when specialising in physiology, and investigating, among other things, the physiological changes in pilots. In 1936 he founded the *Zietschrift fur Luftfarhmedizin (Journal of Aviation Medicine)*. In 1937 he was made an honorary member of the Aerospace Association of the United States of America. In 1948 Dr. Strughold coined the phrase "space medicine". In 1949, during a symposium entitled "Physiological considerations of the possibility of life in extra-terrestrial conditions", he considered that it was feasible that not only would man travel into space, but also could colonise and inhabit other planets. Twenty years later, the first man set foot on the moon.^{1,2}

In 1949, Coronel Harry G. Armstrong, Commanding Officer of the School of Aviation Medicine of the United States of America, founded the first Department of Space Medicine in the history of medicine, and Dr. Strughold was the first and only professor in the subject, emphasising the inter-relationship between space medicine with biomedicine, space biology, astrobiology, and bioastronautics. He centred his activities on research into the physiological and behavioural changes that could occur in flights outside the Earth's atmosphere and in space. Dr. Strughold produced 180 scientific publications, but one of the most important, entitled, *Where does space begin?, functional concept of the boundaries between the atmosphere and space*, dealt extensively about the potential of the human being for space

exploration.³ For all his contributions, and despite the controversy surrounding him due to his active participation in the Nazi regime, Dr. Hubertus Strughold is considered "the father of Space Medicine". He died on 25th September 1986.

Dr. Ramiro Iglesias Leal was born in 1925 in Santa Rosalia, Municipio de Camargo, Tamaulipas. He studied Medicine in the Universidad Nacional Autónoma de México, graduating in 1955. He made Cardiology his specialty in the "Ignacio Chavez" Instituto Nacional de Cardiología, as well as in the Cardiology Institutes of London and Paris. He studied Aerospace Medicine under the tutelage of Doctor Charles Berry and the aforementioned Dr. Hubertus Strughold. Dr. Iglesias Leal dedicated his professional life to Cardiology, but in particular he is noted for his interest in Aerospace Medicine. He was the first Mexican physician dedicated to this interesting branch of medicine. His professional, and academic activity, and his scientific production always revolved around Space Medicine. It is important to mention that, during his stay in NASA in 1968, he received the first electrocardiogram sent from space during the Apollo 8 mission. Among his many publications are highlighted the books entitled "The route towards the cosmic man and aerospace Cardiology" (*La ruta hacia el hombre cosmico y Cardiologia aeroespacial*), which has received many awards. Dr. Iglesias has emphasised the need for aerospace research in different forums, and the benefits that it has contributed to humanity. To be honoured as a distinguished *Tamaulipeco*, in 1998 the Ciudad Victoria planetarium of Tamaulipas, Mexico, received the name of "Dr. Ramiro Iglesias Leal". Due to his contributions and his distinguished professional activity, Dr. Iglesias Leal is considered "the pioneer and father of Space Medicine" in Mexico.

The development of Space Medicine in our country could not be conceivable without the contributions of Dr. Ramiro Iglesias, who opened the way for this activity, which has gradually been gaining its position within the agendas of important academic and government institutions.

It is important to point out that the Agencia Espacial Mexicana, the Academia Mexicana de Cirugía, and the Academia

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Nacional de Medicina of Mexico, have given much support to the development of this branch of medicine. Under their auspices they have organised the first 2 forums on Space Medicine, which have met with great success by professionals of medicine and those dedicated to the associated scientific branches, among which is highlighted is astronomy, astrobiology, and geomedicine.

Following along this line, the *Sociedad Mexicana de Medicina del Espacio y Microgravedad*, has recently been founded, which, together with the Institutions already mentioned and the Universidad Autónoma de San Luis Potosí, and with the support of the Consejo Nacional de Ciencia y Tecnología (CONACYT) organised "The First Mexican Congress of Space Medicine", held in the City of San Luis Potosí on the 13th to 14th August 2015. In this great academic event, distinguished personalities of medicine and the space biological sciences, as well as Higher Education institutions, among which included the Escuela de Medicina Naval and the Universidad del Valle de México, and in just recognition of the professional career of Dr. Ramiro Iglesias Leal, the Congress carried his name.

Speaking in space terms, the mission has now started, and the aim is to spread the knowledge associated with Space Medicine and to make the new generations of Mexican doctors be aware of this important and interesting area of opportunity. The presence of medical experts in

space medicine is essential in the ground teams and in space flights, and in these, and why not, a Mexican doctor could be a part of them. Space journeys are almost routine, and to colonise our Moon and the journey to Mars is just round the corner. Dr. Ramiro Iglesias gave us the example and showed the path to follow.

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