

OPENING OF THE FIRST BRAZIL AND CHINA SYMPOSIUM OF CHEMISTRY AND PHARMACOLOGY OF NATURAL PRODUCTS

We are honoured to open the First Brazil and China Symposium of Chemistry and Pharmacology of Natural Products. Researchers of several countries will be attending this International Symposium, which has been organized in collaboration with researchers from China, a country of ancient tradition in studies on medicinal plants.

It is interesting to mention that twenty seven hundred years before Christ, the Emperor Shen Nung, had a hundred gardens with medicinal plants which he used for the preparation of products with healing properties. At that time, he had probably used ephedra, a plant from which ephedrin is extracted today.

The vast knowledge acquired since ancient times was compiled, in form of an encyclopaedia, the Pen-Tsiau. Archeological studies reveal that other countries also tried to develop the subject, as is the case of the Egyptians, who two thousand years before Christ studied nature, as it is reported in the Papyrus of Ebers, a document of 20 meters length, found in Luxor in 1873, containing 870 prescriptions whose ingredients, among others, were myrrh, cypress flowers and lemon seeds. It is possible that at that time they knew also the plant from which opium is extracted, since Louis Lewin in his book *Fantastic* suggests that Menelau, King of Ithaca offered it to Ulysses when he returned to Athenae after the War of Troia. It is interesting to observe that in Babylonia, according to Mythology, Schamach, the God of the Sun, gave to Humarabi a code containing the Principles of Medicine.

The Greek and Roman civilizations cultivated the use of what nature offered them. In Greece, one hundred years before Christ, Plinius the Elder, also called Plinius the Naturalist, whose culture embraced almost all the knowledge of the century, wrote a History of Nature in 37 volumes. This encyclopaedia, which includes the knowledge that naturalists and philosophers of that time had on physics, contains valuable observations besides false ones related to winged-horses, mermaids and the use of mandrake roots, botanically known as *Mandragora officinalis*, to bewitch lovers and cure several kinds of diseases.

It is worthwhile to mention the importance of some schools of medicine in ancient Greece, such as those inspired by Hippocrates and Theophrastus, the latter Aristotle's pupil and successor.

Theophrastus, considered the father of Botany, wrote a History of Plants in nine volumes. Pedanius Dioscorides, who lived in the first century of the Christian Era and was Nero's physician, wrote a book dealing with the science of medicine in five volumes. This book, in which the author identified 140.000 products has been considered the foundation of pharmacopoeia and used for over fifteen centuries. It is also interesting to remember Galen, physician of the Roman Emperor Marcus Aurelius, who criticized the knowledge that ancient physicians had on medicine. Galen was the author of the theory on the pathogenesis of disease, which conceived disease as a result of a morbid disturbance of the four human fluids: blood, phlegm, choler and melancholy, and whose treatments had to follow the principle of *contraria, contrariis curantur*.

It must be mentioned that the Arabians also had a golden Era with regard to studies on medicinal plants. Avicenas (Abu Ali al-Hussein ibn Abdallah ibn Sina) who lived between 980 and 1037 of the Christian Era, is considered a very important man in the history of Arabian medicine and some historians compare him to Aristotle. Arabians introduced into Europe their knowledge on distillation and sublimation, as well as their use of several drugs. Some other important men of the Era are Averroes and Maimonides (Moyses ben Maimon). A sculpture of the latter can be found in Cordoba, Spain. Arabians introduced in Europe the knowledge they had acquired from the Greeks; they were so valuable that it is worth to repeat Meyerhof's words about them: "Arabians were the reflex of the shine of Hellenic's sun when the day had gone, and it shined as the

moon in a dark Era, the Middle Age, and some brilliant stars joined their shining light to other stars and to the moon and together they died away in the sunrise of Renaissance. Their influence lasts up to this day".

In Renaissance, the discoveries of the New World, found that the inhabitants of this part of the world had a valuable knowledge about the properties of plants. D'Anguera, a Spanish priest wrote a letter to Leon X mentioning the preparation of a toxic mixture whose vapour was mortal for humans. Such preparation was made by the eldest members of the population and were used for arrow poison. The historian Cieza de Leon in his book *Chronicles of Peru* mentions that the plant used in these preparations was called curare.

At present, when this Symposium on the Chemistry and Pharmacology of Natural Products is held, the Popular Republic of China is again one of the countries working more actively in this area to generate knowledge and therapeutical benefits from their natural resources. Researches from that country working in institutions created for the study of natural products, are attending this Symposium.

Here, in Brazil, several researchers have made efforts to create institutions for research of natural products, where zoologists, botanists, chemists, biochemists, physiologists and other professionals could work together to generate more knowledge in this area in the benefit of mankind.

In 1963 after a trip to the Popular Republic of China, in a television program we suggested the creation of institutions for this purpose. Recently, we have conducted a statistical study with researches working on natural products, in order to know their opinions about the creation of institutions as the one we are proposing. More than a hundred participants agreed with our suggestion. It is important to mention the transference to these institutions of those groups working separately in this area because of the referencial and informative purpose of these institutions.

During the course of this Symposium we would like to have the opinion of those attending this event about the importance of the creation of these institutions dedicated exclusively to the study of our natural resources. We would not like to repeat the fear of our president, Otto Richard Gottlieb, who in the words of a Chico Buarque de Holanda song reminds:

Mas para o meu desencanto
O que era doce acabou,
Tudo tomou seu lugar
Depois que a banda passou,
E cada qual no seu canto,
E em cada canto uma dor,
Depois que a banda passou
Cantando coisas de amor.

Haity Moussatché