History/Philosophy

History of Medicine in Empoli Area

Fernando Prattichizzo

Internal and Emergency Medicine, San Giuseppe Hospital, Empoli

Several physicians, born in Empoli area, have an outstanding position in the history of medicine. First of all, we have to stress the great insights into anatomy and physiology that Leonardo (Vinci 1452 – Cloux 1519) realized about five centuries ago. The second scientist we want to introduce is Michele Mercati, who was born in San Miniato on 1541. He was educated at the University of Pisa, where he took degrees in Medicine and Philosophy. In a short time he became famous as 'simplicist', that meant expert in medicinal herbs. Michele Mercati was superintendent of the Vatican Botanical Garden under many Popes. The third physician we want to remember is Giuseppe Del Papa (Empoli 1648 – Florence 1735), disciple and friend of Francesco Redi. He was Professor of Medicine at the University of Pisa and he became the first physician to Grand Duke Cosimo III and thereafter Gian Gastone. His scientific works concerned the character of natural elements, such as heat, cold, fire, light, moisture and drought. He complied with a natural and simple medicine, inspired by Redi. After his death, the great inheritance was used to build just the ancient 'San Giuseppe Hospital', where the Centre of Natural Medicine is nowadays. Finally, we want to deal with Vincenzo Chiarugi, born in Empoli on 1759 and died in Florence on 1820. He was one of the first in history to consider the 'mentally deranged' to be patients like the physically ill, and he operated accordingly. Chiarugi was appointed by the Grand Duke Leopoldo I to plan the new hospital of San Bonifazio, which would become the first site of human care of people with mental illness.

Theoretical Concepts of Traditional European Naturopathy and Herbalism Used in Modern Therapy

Tedje Van Asseldonk

Institute for Ethnobotany and Zoopharmacognosy, Rijksweg 158, 6573 DG Beek, The Netherlands

Traditional European Medicine as outlined in the *Corpus Hippocraticum* has two major therapeutic principles: a constitutional (holistic) therapy and a patient-specific (in time, 'nature' and dosage) approach. The concept is often referred to as the doctrine of four humours. The available medication (mostly food and herbs) was analogously allocated to four categories: hot or cold and, in addition, wet or dry. Nowadays these concepts are still in use in naturopathy practise. This literature study reviews several medieval and renaissance European herbals comparing the allocation of herbs to these four categories. Additionally, the hypothesis is presented that this classification of herbs may be related to the function of the secondary plant compounds as described in chemo taxonomy and chemical ecology. The 'nature' of food and herbs as described in 10 medieval and renaissance herbals is summarized, discussed and compared with the now known evolutionary strategies of plant defence.

Scientific versus Traditional Knowledge Systems in Medicine

Roberto Raschetti

National Centre for Epidemiology, National Institute of Health, Rome, Italy

Traditional Medicine (TM) is the ancient and culture-bound medical practice which existed before the application of modern science to health. The practice of TM varies widely in keeping with the societal and cultural heritage of different countries. Every human community, in fact, has responded to the challenge of maintaining health and treating diseases by developing a medical system. For the most part, it was assumed that knowledge of TM was reinforced through individual clinical experience and transferred either verbally or by cataloguing accumulated experience in reference texts. These systems are based on the *theory, beliefs and experiences that are indigenous to the different cultures*, and that are developed and handled down from generation to generation. On the contrary, Western medicine refers to a scientific paradigm based on 'empirical proofs' (evidence-based). Evidence-Based approach de-emphasizes intuition,

un-systematical clinical experience and pathophysiological rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. The main difference of these two kinds of knowledge systems is their format. The scientific knowledge (SK) system is an *explicit* or 'codified' knowledge that can be articulated in a formal language (including grammatical statements, mathematical expressions, specifications, etc.) This kind of knowledge thus can be transmitted across individuals formally and easily. On the other hand, the format of TK system is a *tacit* knowledge of the local or indigenous people, which is personal, content-specific, and therefore hard to formalize and communicate. This kind of knowledge is embedded in the experiences of indigenous or local people and involves intangible factors, including their beliefs, perspectives and value systems. In this article, the dichotomy between the traditional and scientific knowledge systems in medicine will be explored on the following grounds: (i) *substantive grounds*, because of differences in the subject matter and characteristics of traditional and scientific knowledge; (ii) *methodological and epistemological grounds*, because the two forms of knowledge employ different methods to investigate reality; and (iii) *contextual grounds*, because traditional knowledge is more deeply rooted in its environment.

Homeopathic Medicine: A Bridge Between Traditional and Experimental Approach

Andrea Valeri

Research Department, SIMO—Italian Society of Homeopathic Medicine

A very important part of traditional medicine is medical use of plants. An increasing number of researches confirms therapeutic value of traditional used plants, but even in most established traditional medical systems we do not know how traditional therapists gained knowledge about plants' medical properties. Modern medicine uses experimentation to obtain scientific information about plants: how was it possible to get important traditional information without experimental approach? Some recent context works suggest two common methodological approaches in different traditional systems: a very accurate and 'subtle' description of the effects of a plant on single persons and a 'coherence knowledge system' verified in the context of the same cultural pattern. These two common methodological approaches seem important to gain medicine knowledge. Homeopathy introduces for the first time in medical history (1796) systematic and explicit experimentation—the so-called proving—to discover new therapeutic properties of substances. Experimentation methodology used in modern medicine many times sees 'traditional knowledge' as anti-scientific; only recently there is new interest for traditional approaches. Homeopathy uses experimental methodology (placebo control group, blindness, randomization) but at the same time uses individually and accurately collected symptoms to cure individual patients in their specific way of getting sick. Furthermore, homeopathy can be considered not only as a traditional 'coherence knowledge system' but at the same time it can show clinical results in controlled clinical trials. This way homeopathic medicine could represent a cultural and practical bridge between traditional and experimental approach: this could be important for better individual care and for the emerging issue of single case evaluation.

Results and Experiences of the Cuban Traditional Medicine with Natural Products: From the Ethnomedicine to the Deep Pharmacological Research

R. Delgado¹, G. Garrido¹, I. Rodeiro¹, D. Garcia¹, P. Hernandez¹, G. Pardo¹, M. Guevara¹, A. Alvarez¹, A. Riaño¹, N. Merino¹ and E. Marrero²

¹Pharmacology Lab, Department of Biomedical Research, Center of Pharmaceutical Chemistry (CQF). P.O. Box 16042, Havana, Cuba and

²National Centre for Animal and Plant Health Cuba, CENSA

The rich Cuban plant biodiversity, with very high index of endemic flora, offers to public health important therapeutic alternatives. Many Cuban research projects in different center of investigations focused to obtain natural health product (NHP) as the main goal. In this field, the Cuban traditional medicine (CTM) with natural products represent one practice rooted in the population, supported by strong ethnomedical experience, mix of many cultures that used medicinal plant as essential part of its life: native indians (today absent), African slaves, Spanish, Chinese and other foreign immigrants who arrived to the island with one established ethnomedical culture. They assimilated our biodiversity and

developed the creole ethnomedicine, step of the current development in the employment of the medicinal plants with therapeutic scope in Cuba. In general, our country represents a complex melt of many cultures and ethnomedical practices that are actually used by the phytotherapeutic research for the development of new products and current pharmacological investigations, that transit from the necessary ethnopharmacological exploration, until the development of pre-clinical and clinical pharmacological studies, with employment of modern molecular and chemical methodologies that deepen the pharmacodynamic properties, explore mechanisms of drug actions, chemical composition, pharmacokinetics profile and the therapeutic properties of natural extracts and their majority of active ingredients. These investigations concluded in the controlled clinical trials and pharmaco-epidemiological studies, in order to know the real effectiveness of medicinal plants as part of therapeutic policy of the Ministry of Health. The present work shows some of the examples approaching of NHP from tropical plants in Cuba. In particular, we present the result of investigations with an aqueous extract from stem bark of *Mangifera indica* L. (Vimang) that has been used in Cuba during several years in ethnomedical practices for the improvement of quality of life of patients with different pathologies. Phytochemical characterization of the extract has led to the isolation of different phenolic constituents, with the glucosylxanthone mangiferin as the major component. The extract has demonstrated antioxidant activity as the main pharmacological property. Other studies have shown that the extract also possesses other pharmacological activities, such as: anti-inflammatory, anti-allergic, analgesic and immunomodulator, with very complex and multifactorial mechanisms of involved action. Different clinical studies have been developed, demonstrating the therapeutic effectiveness of Vimang as antioxidant supplement in pathologies where oxidative stress is related to their etiology. This is only an example that illustrates the impact of the Cuban ethnomedicine in the national politics of health, on the base of the rational employment and with a deep scientific support, of the medicinal plants as true therapeutic alternatives.

doi:10.1093/ecam/nem112

The Role of Traditional Medicines in Multicultural Societies: A Bioethics Perspective

Elisabetta Confaloni

University of Florence, Regione Toscana

Many authors, relating to the Khun's analysis on the 'paradigmatic fluidity of medicine' and taking into account the different implications of that condition, pointed out the necessity of re-interpreting the role of medicine towards patients and society. The double transformation process of medicine, in terms of socialization and technology consolidation, determined upshots that transformed and expanded the concept of health, also in light of new health needs of Western, multicultural and globalized societies. This entailed also, in the last 50 years, that national health systems undergone a re-orientation thrust under the pressure of the users' needs that expressed increasingly active decision-making capabilities. Moreover, a new ethic demand rose and tried to find an orientation with respect to different possibilities of treatment of life given by new technologies and to the experience of dialog and tolerance required within complex societies. The recent attention of medicine to social events forced to look at structural flows of migrants in European societies (Conference of Amsterdam 2004). Therefore, the migrants, who bring cultural visions of health and disease different from those developed within biomedicine—interpreted here as scientific and modern medicine, developed in the last two centuries in Western societies and based on biological, chemical and physical sciences—have to be seen as new users of the socio-medical services, sometimes with an atypical citizens' profile, but certainly as subjects needing services that fit on the person and are sensitive to specific factors of health and disease. At the same time, the rediscovery of traditional health systems, following the Alma Ata Conference, together with the coming of unconventional medicines based in Western societies, rose the question of legitimizing paradigms and validating specific practises and procedures; moreover, it put different concepts of health and disease into circulation, as well as different concepts of the relationship between medicine and society. On the one hand, traditional health systems seem to be linked to a conception of life typical of archaic societies and characterized by the sense of limit; on the other hand, unconventional medicines seem to refer to a integrity concept (holism) in relation to the person's wellbeing. These conceptions may be compared with the interpretations given by some bioethics authors who criticize the objectives and sustainability of technological medicine and point out the need to put the persons' wellbeing to its right perspective within the life cycle. Unconventional medicine systems turn out to be dimensions that answer to health needs in a 'cultural' way, acceptable by migrant and the local people, but also to be new opportunities that are

complementary to scientific medicine, especially in the 'maintenance' of everyday health. The passage of some traditional and alternative therapies to 'complementary medicine' in regional health care plans, as in the case of the Region Tuscany, highlights this process.

Spontaneous Reporting of Adverse Events to Phytomedicines and Other Alternative and Complementary Products: A New Challenge in Tuscany

Francesco Lapi¹, Alfredo Vannacci¹, Francesca Menniti-Ippolito², Luigi Gori³, Eugenia Gallo¹, Martina Moschini¹, Marina Di Piro¹, Grazia Banchelli¹, Enrica Cecchi^{1,4}, Roberto Raschetti², Fabio Firenzuo³ and Alessandro Mugelli¹
¹Department of Preclinical and Clinical Pharmacology, University of Florence, 50139 Florence, Italy, ²Center of Epidemiology, Surveillance and Health Promotion, National Institute of Health, 00161 Rome, Italy, ³Centre of Natural Medicine, ASL 11 Empoli, 50053 Empoli, Italy and ⁴Emergency Department, ASL 4 Prato Hospital, 59100 Prato, Italy

The use of Complementary and Alternative Medicines (CAMs) has recently increased in Italy. Among CAMs, most of the remedies of natural origin are represented by herbal remedies (HRs). In this context, because of the large number of adverse events (AEs) associated with these products, the need for a spontaneous reporting system emerged. Since April 2002, the Italian Institute of Health (ISS) in agreement with the Italian Medicines Agency (AIFA), is collecting AEs associated with products of natural origin. An *ad hoc* reporting form, similar to that in use to collect spontaneous reports of adverse reactions to conventional drugs, was defined. According to the Italian law (n°98/2003) related to Pharmacovigilance (PV), the Tuscan Regional Centre of PV, in the light of the encouraging results obtained with conventional medicines, has recently implemented a surveillance system dedicated to monitor safety of CAMs. Thus, the aim of this plan, consists in improving reporting rate of AEs associated with CAMs use. In agreement with ISS, Tuscan Centre has collected all AEs to CAMs in a regional database. To enhance reporting each AEs report receives a personalized feedback information to the healthcare professionals. These data could suggest some epidemiological research projects on safety aspects of CAMs. For further improvement of AEs reporting, a regional pharmaco and phyto-vigilance website (www.farmacovigilanza.toscana.it) is continuously updated by dedicated professionals. From the year 2002 until now (May 2007) Tuscany database has collected 141 spontaneous reports. Among subjects who have developed an AE, females (68.8%) outnumbered males, with a mean age of 46.3 ± 19.9 . According to Naranjo algorithm the causality assessment between reported AEs and products result *certain* in 15%, *probable* 35%, *possible* 20% and *non-defined* 30%. The cases have been mainly reported by hospital physicians and herbalists. Among AEs, 28% were cutaneous, 20% gastrointestinal, 13% neurological, 10% cardiovascular, 4% musculoskeletal. Some adverse events (six hepatitis, one rhabdomyolysis, one death, one abortion) were classified as 'serious' according to WHO critical term list. All these activities, as already obtained for conventional drugs, should enhance healthcare professionals to report also AEs to CAMs. In fact, although Tuscan phytovigilance database is small, some events seem to highlight important clinical aspects. Moreover, because of under-reporting, this database is not able to estimate 'signal alarm' associated to CAMs use. So it is very important that physicians, pharmacists, herbalists and consumers themselves, with the aim of reporting AEs in an accurate way, could be continuously informed on the safety aspects of these products.

The Problem of the Scientific Method

Bruno Silvestrini

University 'La Sapienza', Rome

In essence, the scientific method confronts ideas and theoretical speculations with facts. It can be pursued in different ways. One consists of taking into consideration naturally occurring facts, which is a complicated approach as these facts occur occasionally and sometimes are difficult to deal with. Another way consists of reproducing naturally occurring facts by artificial models, which are easier to handle and study. Despite its limits, this method is so convenient that became the preferred one and was often considered synonymous of the scientific one, which is not necessarily true. The implications of this phenomenon are discussed in connection with developments of modern medicine, with particular reference to the debate on the non-conventional one.

doi:10.1093/ecam/nem116