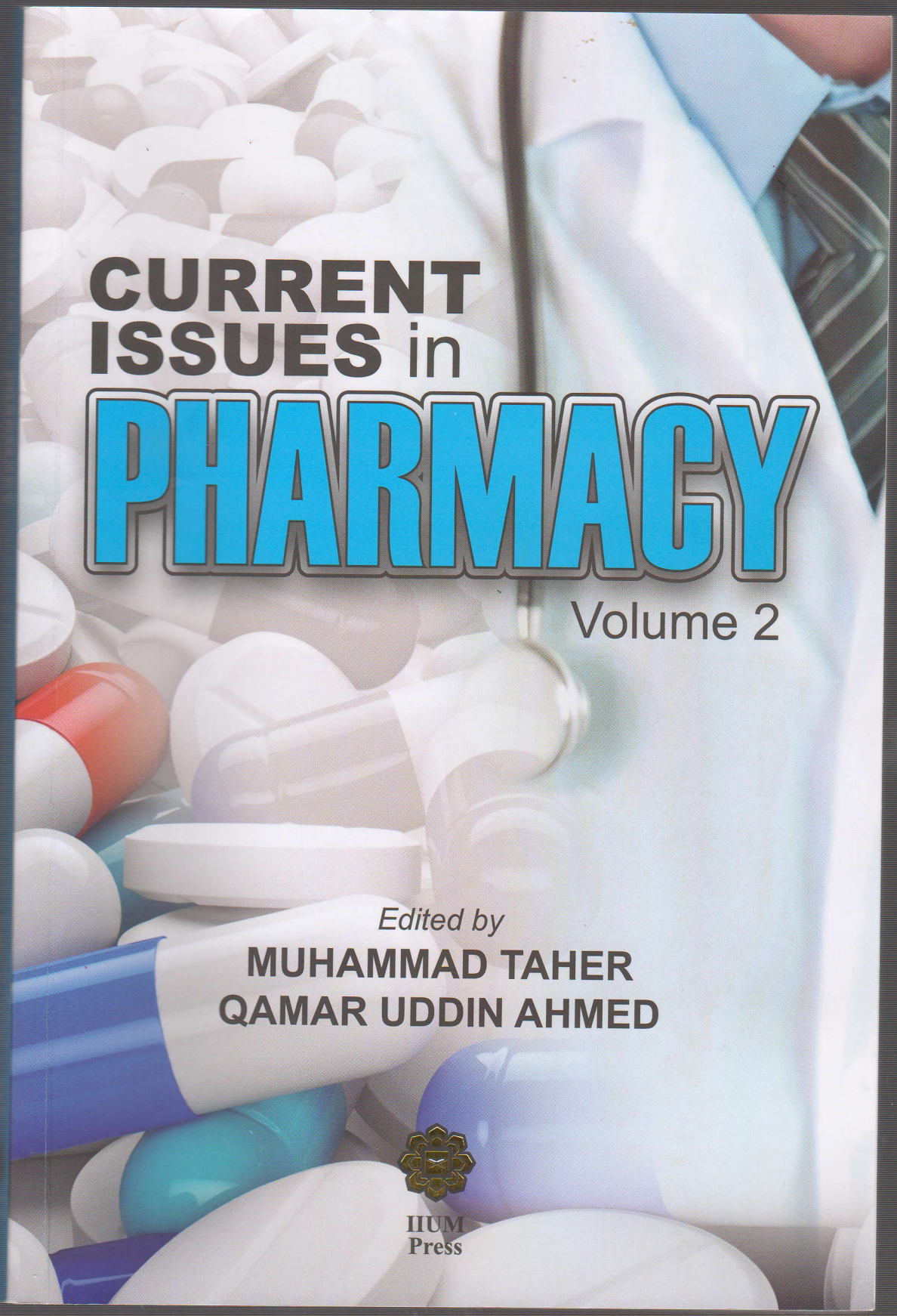
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Contents

Chapter 8

Exploring the Tropical Plant Wealth: Skin and Hair Benefits

Hazrina Hadi, Nurul Shazwani Abdullah and
Qamar Uddin Ahmed

8.1 Introduction

Plants are well known for their different traditional uses as alternative cures for many ailments and also for their use in cosmetics since time immemorial. There are several established traditional medicinal systems mostly originated in Asia, such as in India (Ayurvedic and Siddha), China (Wu Hsing) and Japan (Kampo) which are still well recognized and followed until today (Alsarhan et al., 2014). For example, the Ayurvedic system has been using medicinal plants for 5000 years to treat various diseases and ailments (Fatima et al., 2013). Ayurveda is derived from word '*ayu*' which means life and '*veda*' which means science of knowledge. In short, Ayurveda can be defined as 'Science of Life' (Duraisamy et al., 2011).

Cosmetics alone are not enough for healthy skin and hair; they must contain certain active ingredients for its specific goals (Fatima et al., 2013). Herbal extracts are usually added to cosmetic formulations for their health-related properties such as antioxidant, anti-bacterial and antiseptic properties (Fatima et al., 2013). Free radicals in the body are well known for their contribution to diseases like atherosclerosis, arthritis, cancer and skin aging (Alsarhan et al., 2014). Antioxidants, which are scavengers of free radicals and metal chelators can prevent and delay degenerative diseases caused by oxidative damages. From the cosmeceutical perspective, antioxidants can reduce the potential of skin from suffering the effects of premature skin aging and skin cancer (Chiari et al., 2012).

Antioxidant compounds (viz. polyphenols etc.) can be easily extracted from different parts of plants according to the species (Alsarhan et al., 2014). Artificial antioxidants of synthetic origin are commonly used in different formulations such as butylated hydroxytoluene (BHT), butylated hydroxyanisole (BHA), tert-butylhydroquinone (TBHQ) and propyl gallate (PG) have been tested for their possible toxicities. The polyphenolic extracts from medicinal plants have been extensively studied to replace these artificial antioxidants which are associated with toxicities (Alsarhan et al., 2014). They have the ability to counteract the mutagenicity, toxicity and carcinogenicity caused by synthetic products (Chiari et al., 2012).

The World Health Organization (WHO) has identified and listed about 21,000 plants around the globe with medicinal properties (Fatima et al., 2013). The demand for the medicinal plants usage has significantly increased recently owing to the fact that they are affordable, reliable and effective like conventional drugs (Alsarhan et al., 2014). Besides, there are many modern drugs which have been derived from plant sources, such as atropine, digoxin, reserpine and tubocurarine (Alsarhan et al., 2014). In cosmetics, natural products are chosen as they have the intrinsic capability and efficacy and are believed to have less toxicity and side effects than their synthetic counterparts (Fatima et al., 2013).

Among Asian countries, Malaysia has been included as one of the 12 megadiversity nations of the world. Overall, these twelve megadiversity countries contain at least 60% of the world's known plant species (Latiff, 2005). Malaysia is endowed with a wide variety of plant species and traditional medicinal systems. Malaysia has about 15,000 species of flowering plants of which about 10% are said to be medicinal (Faridah et. al., 2001). In Peninsular Malaysia alone, more than,1300 plant species have been recorded. Complete reports on the Malay traditional medicinal plants were first thoroughly reported by Burkill (1935). This provided the first comprehensive knowledge about the medicinal plants of Peninsular Malaysia. Malaysia's traditional systems are strongly influenced by the Unani concept with additional practices taken from Indonesians, Chinese and Indians (Alsarhan et al., 2014). The Unani medicinal system initially originated from Greece and Roman literature, was translated into Arabic and Persian languages, and then introduced in India by Arabs and Persians (Duraisamy et al., 2011).

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CURRENT ISSUES in PHARMACY

Volume 2

The field of pharmacy consists of many disciplines of pharmaceutical sciences particularly pharmacy practice, pharmaceutics, pharmacology, molecular biology, pharmacognosy and medicinal chemistry. Pharmacy is involved in a wide array of pharmaceutical research and education, too. Pharmacy practice research focuses on the areas of pharmacogenetics, pharmacokinetics and pharmacodynamics. It also covers the inter-relationship between these areas in different ethnic groups, as well as methodological issues on pharmacoeconomics. Clinical and applied research is conducted on studies that are supposed to improve patient outcomes and could have a favourable impact on pharmacy practice and service. Pharmaceutics research is concerned with drug formulation, stability, and delivery science, and also works on medical devices. Medicinal chemistry research is mainly focused on pharmaceutical chemistry, drug discovery and compound library, and receptor biology. Pharmacology research works on molecular and cellular mechanisms of disease states and associated pharmacology, as well as a range of toxicology research.

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