

MALAY MEDICAL KNOWLEDGE ON A NIPAH-LEAF (*Nypa fruticans*) MANUSCRIPT: A DESCRIPTIVE STUDY

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Abstract

Numerous Malay medical manuscripts have been discovered in the collections of libraries such as national libraries, institutions such as museums, and personal collection of old texts. These valuable resources have brought new light to the study of science and literature of the Malays particularly in the field of medicine. Amongst these collections, one medical text which belongs to the Islamic Arts Museum Malaysia in Kuala Lumpur is considered a remarkably unique text as it is written on a *nipah*-leaf (*Nypa fruticans*) material. A case as such is unusual considering the common material used in other discovered Malay medical manuscripts is paper. We present here a descriptive study of the manuscript, coded IAMM 1998.1.3370. This is a complete text that ends with a colophon supplying the name of the author, and date of writing. The manuscript contained interventions and prescriptions for numerous health problems (n=79) such as diabetes, malaria, and others. It was prepared as a book form by stitching several *nipah* leaves together to form several cut square pages bound with a cloth. *Nasakh* calligraphy was used and the text was written using black and red inks with the latter used to indicate a shift to a new topic. The manuscript is in a dilapidated condition due to several factors such as age, and material used. Considering the valuable information in the manuscript, there is a necessity for the preservation and conservation of this manuscript before the content is lost forever.

Keywords: Malay medical manuscript, palm-leaf, *Nypa fruticans*, nipah, Malay medicine

INTRODUCTION

It is estimated that up to 80% of world population resort to traditional medicine at some point in their life (WHO, 2003; Ekor, 2013; Oyeboode et. al., 2016) whether as primary or alternative treatment. Health challenges facing modern society such as increase in the cost of healthcare, ineffective and toxic effects of treatments have caused a sustained and rising interest in traditional medicine (Bodeker, 2005). In view of these challenges and the possible benefit of traditional medicine (Patwardhan & Matshelkar, 2009), World Health Organisation has announced in 2013, the Integrated Medicine Policy 2014-2023 (WHO, 2013), aiming at integrating traditional and modern medicine. It is postulated that the repertoire of medicine in traditional medicine may still replicate the success of Nobel Prize Winner of 2015 whose finding paved the way for the discovery of the treatment of malaria (Wang et. al, 2019). Spurred by these events and initiatives, many studies are underway at revisiting the traditional medical system in the hope of finding new drugs or medical interventions.

The Malay Archipelago which is rich in diverse natural resources, many of which come with medicinal properties, has given birth to a distinct Malay medical system, the result of the Malays interaction with their environment. The Malays way of using these *materia medica* are documented in their written and oral traditions. For the former, this comes in the form of handwritten manuscripts,

many of which are still extant and important in helping scientists understand the medicinal properties of local materials and the make up of the indigenous Malay traditional medical system.

Malay medical manuscripts are stored in several repositories. Amongst the largest are the Malay Manuscript Centre at the National Library (which has over 100 copies) and the Islamic Arts Museum Malaysia (which has over 50 copies). Both of these collections were established from around the 1980s to the 1990s. Malay medical manuscript collection is also available in other places such as in Aceh, Palembang, Jambi or Western countries like the Netherlands, and England. Malay medical manuscripts are commonly known to be written using Jawi scripts. The language is sophisticated, reaching technical maturity, and the format appears to be standard irrespective of region. Some also incorporate local dialects, known through their specific lexical, related to their place of origin. In general, these manuscripts would contain core Malay elements reflected by the use of local medicinal materials and the specific methods of preparations. While many manuscripts are written using papers, some are written on animal skins, bamboo trunks, and even leaves. This article will focus on a unique Malay medical manuscript that was written on *nipah* (*Nypa fruticans*) leaves.

Nipah (*Nypa fruticans*), a type of palm tree, has its leaves being used as a popular and important writing support in South and Southeast Asia before the introduction of paper. It is a major source for writing and painting in countries such as India, Nepal, Sri Lanka, Burma, Thailand, Indonesia and Cambodia (Agrawal, 1984) even until today. Agrawal (1984) stated:

“It is difficult to say exactly when the palm-leaf first began to be used for writing. There is no extant of palm-leaf manuscripts in India before the 10th century. However, the palm-leaf was definitely in use much earlier than this since it is mentioned as a writing material in several literary works and its visual representation can be seen in several sculptures and monuments. It is almost certain that the earlier manuscripts have been completely destroyed owing to the tropical climate of the region”.

The use of palm-leaf as writing materials appears to be thriving in society influenced by Hindu and Buddhist culture. Incidentally, these societies also use writing system based on the old Indian pallava system which are non-cursive and suitable for the leaves' rough surface. Hinzler (1993) who studied palm leaf manuscript in Bali, Indonesia, where Hinduism is still strong, mentioned that the majority of the manuscripts were dated from the early nineteenth century and were still being produced. More Balinese palm-leaf manuscripts have been described and digitised to date (Made et al., 2016). Similar situation could be seen in Thailand and Lao Republic, which are two other Buddhist countries.

In other parts of Southeast Asia where the society has embraced Islam, the use of palm-leaf as writing material is no longer being practiced despite their abundance. This could be due to the adopted Jawi writing system which is cursive and deemed unsuitable to be written on the rough surface of the leaves. Palm leaf is also prone to decomposition if not treated well. Hence, palm-leaf as writing material must have fell out of favour to the Malay Muslim population whose trading activities allowed them access to good quality papers. Nevertheless, scholars acknowledged the possibility of leaves to be used when paper is scarce (Newbold, 1839).

The palm-leaf manuscript of interest, coded IAMM 1998.1.3370, is currently found in the Islamic Arts Museum, Kuala Lumpur. It is written in Jawi and contains medical knowledge. It is not the first or the only example of medical manuscript written on *nipah* leaves. Srichaikul et. al (2012), for example, also studied the content of Thai palm-leaf medical manuscripts. However, in the Malay world, IAMM 1998.1.3370 is unique as no other Malay medical manuscript is known to have been written on *nipah* leaves. The manuscript is not completely unknown as it has been mentioned in brief in several newspaper articles and appeared on major exhibitions. Nonetheless, the manuscript has escaped the attention of others outside Malaysia, and has not been included in recent major publications on Southeast Asian palm-leaf manuscripts (Gunawan, 2015; van der Meij, 2017).

DESCRIPTION OF IAMM 1998.1.3370

The manuscript IAMM 1998.1.3370 was first brought to light in a newspaper article “*Kenali Manuskrip Melayu*”, by Ros Mahwati Ahmad Zakaria (2012). Later, it appeared in an exhibition ‘al-Tibb: Healing Traditions in Islamic Medical Manuscripts at the Islamic Arts Museum Malaysia (March 19 - 31 December 2018)’ held at the Museum of Islamic Arts in Kuala Lumpur, Malaysia (Lin, 2018). It was subsequently included in the catalogue book accompanying the exhibition (Maidin et al. 2018).

The manuscript is in a very fragile condition due to the fast rate of ageing of the *nipah* leaves. Its 30 intact pages have crumbled on many sides. At some places, cracks had also occurred to the leaves. The written area is largely intact, although it is estimated that about 5% of the disintegration has started to affect the written parts. Thankfully some of these crumbled pieces could still be found in the wrapping used to store the manuscript, large enough to allow them to be matched back to their position in the manuscript to enable reading. Nevertheless, due to the nature of the writing material, future deterioration is inevitable. This means that the preservation of the manuscript in the form of a digitised image and publication as a critical edition is urgent.

The leaves show signs that it has been treated before writing were initiated. The manuscript is made up of several sheets. Each sheet was made up of 10 leaves stitched together, cut to become a perfect square and then folded in the middle. The whole manuscript was then bound using a patterned cloth – presumably a *pelikat* or loin cloth customarily used by the Malays. The manner the manuscript is produced shows that it was a product of a very well-thought process. Perhaps, the author knew that palm-leaf could be used as writing materials and also had been exposed to the palm-leaf curing and book processing procedures. This is very much plausible given the significant number of Buddhist adherents in the states of Kedah, Kelantan and Pattani. The author’s access to better writing materials might have been compromised and due to his prior exposure to the palm–leaf writing culture, the author then could have resorted to make use of the abundance of *nipah* in his environment.

The writing style of this manuscript is very consistent throughout. *Nasakh* calligraphy was used which signifies the high level of literary education of its author. He was perhaps schooled well in one of the many traditional religious schools at the time. The text was written using black and red inks; the latter is used to indicate a shift to a new topic. It is unknown what type of inks were used, but they appeared to have been added with a material that has allowed strong adhesion to the surface of the leaves. It was known that some Malay scholars used to add materials such as oil from *kemiri* (*Aleurites moluccanus*), to produce adherent inks but it is not possible to elucidate this in this research.

The Malay language used appears to be Pattani-influenced. The use of Pattani dialect within the manuscript provides some clues as to its origin, perhaps somewhere along the Pattani-Kedah and Pattani-Perak, and Pattani-Kelantan corridors (Figure 1), though none is yet conclusive. These corridors follow the old trade and migratory routes along which the Pattani influence is strong in language and culture. Pattani is without doubt the main producer of Malay medical manuscripts with many from Pattani or by Pattani-descent scholars had been found.

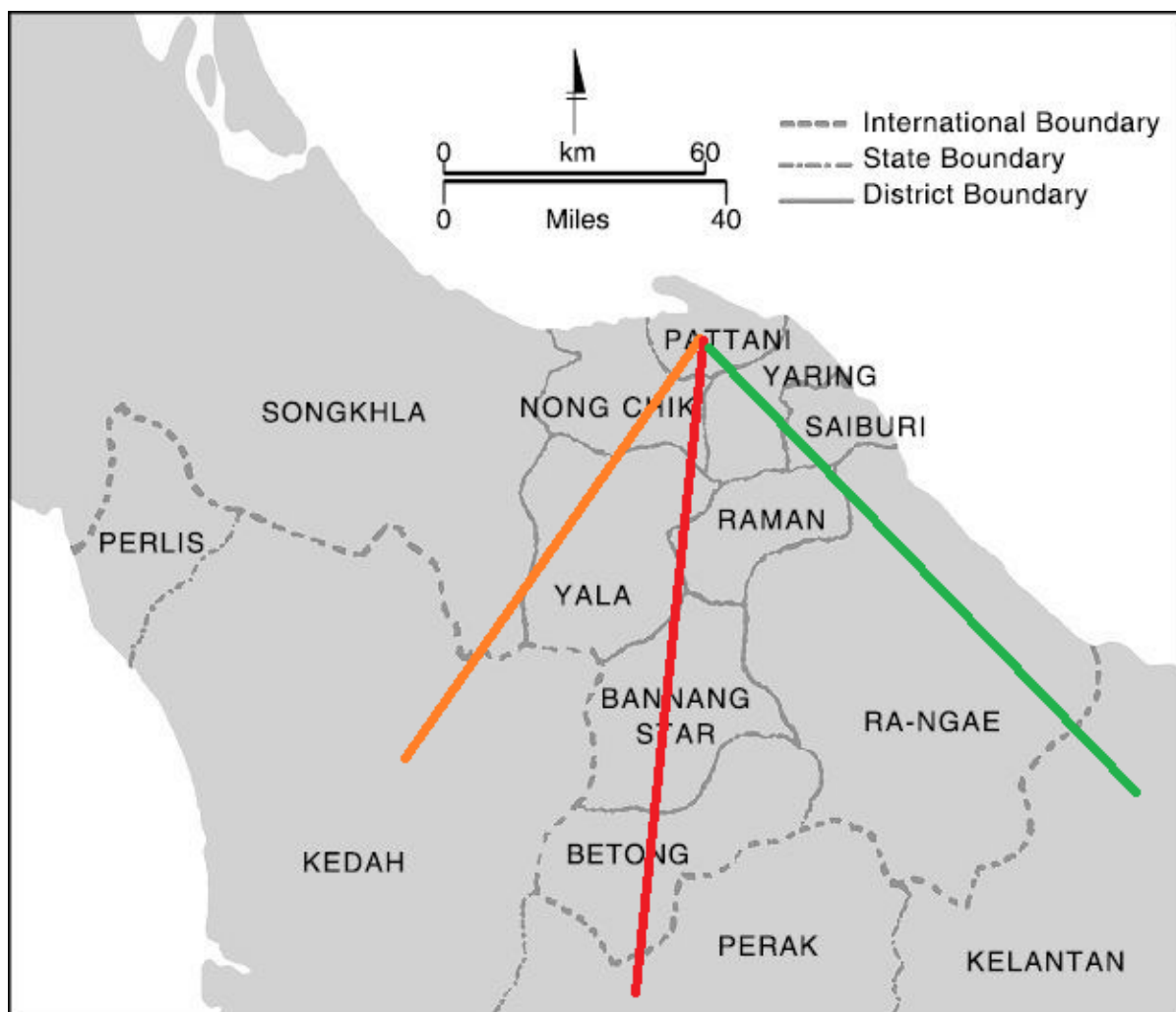


Figure 1: The origin of the manuscript is postulated to be from anywhere along the three possible corridors: Pattani-Kedah (in orange), Pattani-Perak (in red), and Pattani-Kelantan (in green).

The IAMM 1998.1.3370 manuscript starts with praises to Allah and the Prophet s.a.w. This is then followed by explaining the intention of the author in writing the manuscript:

"Adapun perhamba mengutipkan jenis ubat-ubat bermacam-macamnya ubat kerana takut hilang jenis ubat-ubat dan segala-galanya penyakit maka hamba bermohonkan Allāh Subhānahu wa Ta'ālā supaya tercapai cita-cita hamba ini dan bolehlah anak cucu kita dapat memaham jenis ubat-ubat dan penyakit."

"I gather, here, description of medicines and diseases of many kinds in fear of losing the knowledge of them, and I beseech God, may He be Praised and Exalted, to support my ambition so that those who come after me could gain mastery of medicines and diseases."

In general, the content of this manuscript is wholly related to medicine qualifying it to be called a medical manuscript on its own right. Most of the interventions are herbal and used for various conditions. These conditions are listed in the Table 1.

Table 1. The type of conditions and therapeutic options available to treat them in IAMM1998.1.3370.
 (* denotes conditions which may not be regarded as physiological medicine (?)).

Conditions	No. of methods
1. Smelly hair, itchy scalp and hair loss	2
2. Leprosy	3
3. Male impotence	7
4. Diabetes	1
5. Haemorrhage from abortion or other abdominal complaints	1
6. Sexual interaction	4
7. Menstruation problem	2
8. Planning for pregnancy	1
9. Urinary stone	2
10. Syphilis	1
11. Constipation	1
12. Bites and burns	1
13. Headache and toothache	1
14. Tooth cavity	1
15. Swollen throat	1
16. Knee problem	1
17. Postpartum management	3
18. Joint and back pains	2
19. Hernia	2
20. Inflammatory disease	1
21. Stomach problem	3
22. Eye problem	2
23. Penis enlargement	2
24. Malaria	3
25. Fever	1
26. General cough	1
27. Dry cough	1
28. Wound	1
29. Typhoid fever	2
30. Snakebite	1
31. Fever with chills	1
32. Childbirth	3
33. Abortion	1
34. Disloyal husband*	1
35. Female jealousy*	1
36. Appetite & insomnia	1
37. Numbness	1
38. Asthma	1
39. Oral thrush	1
40. Epilepsy	2
41. Foul-smelling semen in women	1
42. Sexual intercourse*	1
43. Predicting child gender*	1
44. Good-looking children	1
45. 'Ain disease	1
46. Regurgitation of milk (in babies)	1
47. Post-partum depression	1
48. Nausea	1
49. Pain during defaecation	1
50. Ear problem	1
51. Diarrhoea	1
TOTAL:	79

From the Table 1, there are 79 interventions in total that are mentioned in the manuscript. From the 79 interventions, 67 are herbal medicine formulations and the other 12 interventions use *wafak* or *azimat*. With regard to the 63 herbal formulations, it can be further divided into single material formulations (n=9) and multiple- or mixed-materials formulations (n=54) (Figure 2).

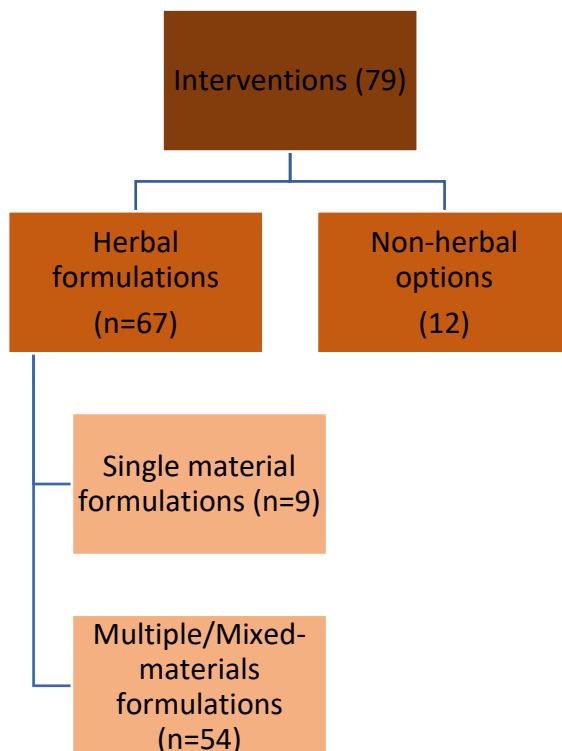


Figure 2: The different types of interventions in the manuscript, IAMM1998.1.3370.

Although the author of the manuscript did not arrange the conditions from head-to-toe fashion, the way its medical information is organised can be said to be almost uniform and following a format. Initially, the name or type of disease is stated. Then, the method of preparing the ingredients for the treatment is supplied followed by the appropriate delivery method of the treatment (Figure 3).

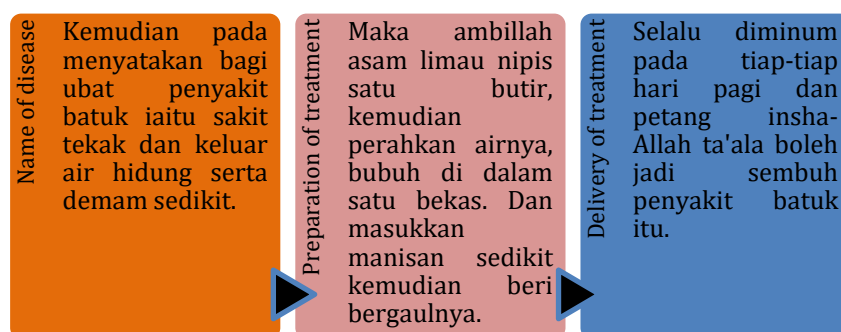


Figure 3: The format of the medical content of the manuscript IAMM 1998.1.3370 follows the sequence: name of disease, method of preparing treatment and method of delivering treatment. Here, the example used is for the treatment of cough

Other examples of treatment methods mentioned in this manuscript include:

a. Eye Medication

“Kemudian pada menyatakan bagi ubat penyakit sakit mata kanak-kanak dan orang tua bakarkan besi buruk seperti bajak atau kapak kemudian nampak panas atau panas tiada melebihi kemudian angkat bajak itu daripada api maka ambil asam limaunya nipis perahkan di atas bajak atau kapak itu kemudian nampak gelegak air asam limau nipis itu kemudian ambikkan air asam yang diperah itu bubuh di atas kelopak mata tiap-tiapnya hari hatta dapat hilang tetapi jangan bubuh di dalam mata hanya di luar mata jua dan jika kanak-kanak halus bubuhkan air susu ibu sendiri di dalam mata budak-budak tiap-tiap hari in shā Allāh.”

“Then, on the treatment of eye condition affecting small children or adult: Heat up a piece of old metal such as a blade or an axe until it appears red hot, but not in the extreme. Then, squeezed some lemon juice on the blade or axe such that the juice is boils and bubbles. Collect some of this juice and salve it on the eye lids. Do this every day. Never put it in the eyes; only on the eyelid. If the children are very small, then use mother’s milk instead.”

Materials: Iron, lime, mother’s milk (for small children).

b. Cough, Throat, Cold and Fever Medications

“Kemudian pada menyatakan bagi ubat penyakit batuk iaitu sakit tekak dan keluar air hidung serta demam sedikit maka ambillah asam limau nipis satu butir kemudian perahkan airnya bubuh di dalam satu-satu bekas dan masakkan manisan sedikit kemudian baru beri bergaulnya selalu diminum pada tiap-tiap hari pagi dan petang in shā Allāh ta ‘ālā boleh jadi sembuh penyakit batuk itu.”

“Then, on the treatment of cough, and throat ache, runny nose and fever. One fruit of lime is squeezed for its juice. Collect the juice in a bowl, mix with some sweet while heating the mixture up. Take this every morning and afternoon daily. If God wills it, the cough will disappear.”

Materials: Lime and sweet (sugar or honey)

c. Postpartum Medication

“Kemudian pada menyatakan ubat memberi peranakan atau rahim perempuan se(m)pit kebanyakan perempuan-perempuan lepas bersalin maka luaslah peranakan itu kerana besar beri dengan melalukan seorang budak itu dan tiadalah sedap duduk bagi pihak perempuan itu dan terasa hendak jatuh peranakan itu kemudian ambillah buah manjakani dan asah-asahkan dengan air hatta likat kemudian disapu sekeliling bibir faraj dan lamanya sekadar tanak nasi masak dan kemudian sapu pulanya kalinya kedua dan biarkan seperti tersebut maka se(m)pitlah faraj in shā Allāh ta ‘ālā.”

“On the treatment of improving the vagina. After giving birth, most vagina will become loosened causing discomfort when sitting and the feeling that the vagina may come out (prolapse). Take gall’s oak (manjakani), scrape with water until it becomes thick. Use as a salve around the mouth of the vagina for the duration it takes to cook rice. Apply the medication the second time and leave it as it is. The vagina will constrict afterwards, by God’s Will.”

Material: Manjakani

d. Stomachache Medication

“Kemudian pada menyatakan senak perut medu iaitu berlompat-lompat didalam perut lagi pun senak dan sakit kemudian ambil tiga butir pisang kelat yang masak-masak diramas bersama kulit kemudian tapis airnya sudah itu minumlah dengan turut pelaturan itu in shā Allāh tiada lagi medu di dalam perutnya itu.”

“Then on the treatment of stomach ache where there is pain, bloatedness, and signs of indigestion. Take three ripe pisang kelat, squeeze together with their peels. Simmer the juice and drink. If God wills it, the stomach ache will go away.”

Material: Ripe pisang kelat.

From the selected examples above, it could be seen that the medical information contained in this manuscript covers various diseases and covers all ages and genders. The ingredients, techniques for producing ingredients, duration and how to use the drug are also described by the author of the manuscript. Generally, the content of the manuscript has a potential to be developed and utilised either in terms of history, pharmacology and medicine.

A brief look at the materials mentioned in this manuscript shows that it consists of various types of *materia medica*. Indeed, at the beginning of the manuscript, the author is mentioned that he will list various types of medicinal plants – *akar-akar kayu*. Among the list of herbs used in this manuscript are *akar mata ayam*, *akar minyak*, *akar celaka*, *akar melada pahit*, garlic, lemon, eggplant, *manjakani*, *kancing baju merah*, and more. In terms of the use of fauna, this manuscript states the use of animals such as lizards, parrots, pigeons, ants and others. In addition, there are other ingredients such as honey, eggs, ghee, and others.

At the end of this manuscript, there is a colophon stating the name of its author, Abdullah bin Wan Besar. With this limited information it is not easy to locate the precise origin of the author as the name Wan Besar is widely used in the three Pattani-influenced corridors. There is hitherto no specific record on a scholarly figure of this name nor there is text that has been produced by a person with this name. With regard to the year in the colophon, this is still uncertain due to the difficulty in reading the Arabic numeral as it could be read as either 1255H or 1355H. What is certain is that the manuscript was completed on Thursday in the month of Rabi' al-Awwal according to the Hijri calendar.



Figure 1.1 Colophon at the end of the IAMM 1998.1.3370

CONCLUSION

The study presents a description of an example of a Jawi *nipah* palm leaves manuscript containing medical knowledge. In studying this kind of manuscript, Malaysia Traditional and Complementary Medicine (TCM) sector, which include the Malay medical tradition, could be boosted through improved understanding from data mining activity of its ancient manuscripts, and could stand to offer the world a unique TCM offerings in terms of medical, social and cultural experiences. Improvement will be made to treatment efficiency, increase life expectancy and better prevention, promotion of racial harmony through increasing positive cultural experience, while maintaining tradition and heritage for posterity, coinciding with the Sustainable Development Goals (SDGs) championed by UNESCO, in particular SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities) and SDG 15 (Life on Land).

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REFERENCES

- Agrawal, O. P. (1984) Conservation of Manuscripts and Paintings of South-east Asia, Butterworths & Co Ltd.: London.
- Ekor, M. (2013) The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety, *Frontier in Pharmacology*, 4:177.
- Hinzler, H. (1993) Palm-leaf manuscripts, *Bijdragen tot de Taal-, Land- en Volkenkunde* 149(3): 459.
- Lin, R. (2018) The Al-Tibb Exhibition at the Islamic Arts Museum Malaysia Delves into Ancient Medical Knowledge, *The Star*, 17th August 2018.
- Kesiman, M.W.A., Burie, J., Ogier, J., Wibawantara, G.N.M.A, Sunarya, I.M.G., (2016). AMADI_Lontar Set: The First Handwritten Balinese Palm Leaf Manuscripts Dataset. 15th International Conference on Frontiers in Handwriting Recognition 2016, Shenzhen, China.
- Maidin, S.M. (2018) Al-Tibb: Healing Traditions in Islamic Medical Manuscripts, Islamic Arts Museum Malaysia: Kuala Lumpur.
- Newbold, T.J. (1839) Political and Statistical Accounts of the British Settlements in the Straits of Malacca, J. Murray: London.
- Oyebode, O., Kandala, N., Chilton, P.J., & Lilford, J. (2016) Use of traditional medicine in middle-income countries: a WHO-SAGE study *Health Policy and Planning*, 31 (8): 984–991.
- Patwardhan, B.A. & Mashelkar, R.A. (2009) Traditional Medicine-inspired Approaches to Drug Discovery: Can Ayurveda Show the Way Forward?, *Drug Discovery Today*, Elsevier.
- Srichaikul, B., Samappito, S., Bakker, G., Dejchai, S., Boonsong, K., Thongkong, A., & Japa, S. (2012) The Therapeutic and Clinical Drug Review of Thai Traditional Herbal Remedies Extracted from Ancient Thai Medicinal Manuscript, *Advances in Natural Science*, 5(1): 29-36.
- Wang, J., Xu, C., Wong, K., Li, Y., Liao, F., Jiang, T. & Tu, Y. (2019) Artemisinin, the Magic Drug Discovered from Traditional Chinese Medicine, *Engineering*, 5(1): 32-39

WHO (2013). WHO Traditional Medicine Strategy 2014-2023 .http://www.who.int/medicines/publications/traditional/trm_strategy14_23/en/ , accessed 7 August 2019.

WHO. (2013) Traditional Medicine, https://apps.who.int/gb/archive/pdf_files/WHA56/ea5618.pdf