



INTERNATIONAL CONFERENCE ON MALAY MEDICAL MANUSCRIPTS

ICOMMM 2020

15TH - 16TH DECEMBER 2020

**Organized by:
Health Information and Knowledge from
Malay Medical Manuscripts (HIKAM)
Flagship, Kulliyyah of Allied Health Sciences**

"Discovery, Innovation & Integration"

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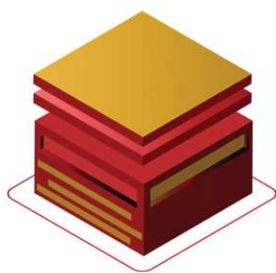
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**INTERNATIONAL
CONFERENCE
ON MALAY MEDICAL
MANUSCRIPT**

**ICOMMM
2020**

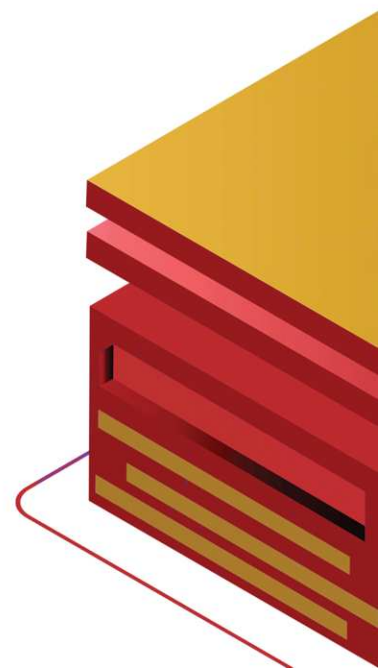
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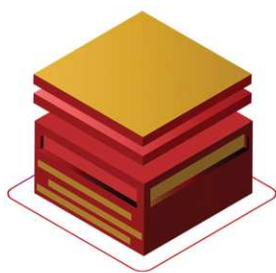


PROGRAMME

15TH DECEMBER 2020 (DAY 1)

8.00 AM	Registration
8.30 AM	Qur'an and Doa Recitation
8.40 AM	Welcoming Remark by Programme Manager
9.00 AM	Officiating Ceremony by Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak IIUM Rector
9.30 AM	Book Launching by Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak
9.45 AM	Keynote Presentation I Dr. Goh Cheng Soon Director of Traditional & Complementary Medicine, MOH <i>Regulatory Challenges in Uplifting Traditional Malay Medicine in Malaysia</i>
10.30 AM	Break
10.45 AM	Keynote Presentation II Prof. Emeritus Dr. Shaharir Mohamad Zain Former President of Akademi Sains Islam Malaysia <i>Isu-isu Manuskrip Perubatan Dalam Bahasa Melayu Jawi Sebelum 1900</i>
11.30 AM	Oral Presentation (Session 1) Manuscript Studies
1.00 PM	Lunch Break & Zuhr
2.00 PM	Oral Presentation (Session 2) Reproduction & Respiratory Problems
3.30 PM	Break
3.45 PM	Oral Presentation (Session 3) Materials & Method
5.00 PM	Adjournment & 'Asr

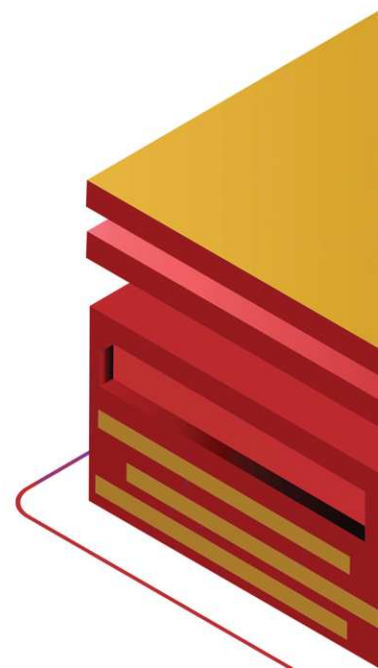


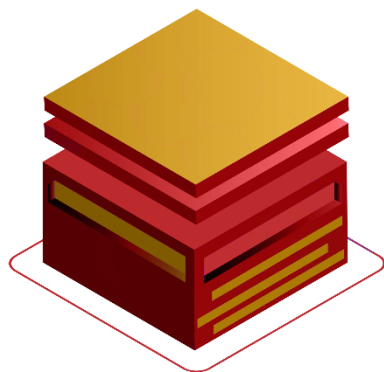


PROGRAMME

16TH DECEMBER 2020 (DAY 2)

- 8.45 AM** **Qur'an Recitation**
- 9.00 AM** **Keynote Presentation III**
Pak Kemas Andi Syarifuddin
Manager of Laboratorium Naskhah Melayu Prasarjana
UIN Raden Fatah Palembang
*Manuskrip Perubatan Melayu Dalam Khazanah Warisan
Keraton Palembang Darussalam*
- 9.45 AM** **Keynote Presentation IV**
Assoc. Prof. Dr. Mohd. Affendi Mohd. Shafri
Project Leader of Malay Medical Manuscripts IIUM
*Development and Use of IIUM Scientific Index for Malay
Medical Manuscripts (ISIM)*
- 10.30 AM** **Break**
- 10.45 AM** **Oral Presentation (Session 4)**
From Teeth to Tumour and Toxin
- 1.00 PM** **Lunch Break & Zuhr - iKOP Corporate Message**
- 2.00 PM** **Oral Presentation (Session 5)**
Infectious Diseases
- 4.00 PM** **Break**
- 4.30 PM** **Closing & Prize-Giving Ceremony**
- 5.00 PM** **Adjournment & 'Asr**





CONTENT

	Page
Programme Schedule	iii
Foreword	vi
IKOP	vii
Keynote Presentations	1
Keynote I – Dr. Goh Cheng Soon	2
Keynote II – Prof. Emeritus Dr. Shaharir bin Mohamad Zain	4
Keynote III – Pak Kemas H. Andi Syarifuddin	8
Keynote IV – Associate Professor Dr. Mohd. Affendi Mohd. Shafri	10
Oral Presentations Schedule	12
Abstracts	18
Session 1 – Manuscript Studies	19
Session 2 – Reproduction & Respiratory Problems	24
Session 3 – Materials & Methods	29
Session 4 – From Teeth to Tumour and Toxin	33
Session 5 – Infectious Diseases	40
Advertisement	47
Organising Committees	50



Foreword

In the Name of Allah, Most Gracious Most Merciful

All praises to Allah, Lord of the Worlds, and to His Messenger, Prophet Muhammad, peace and blessings be upon him, his family and companions. There is no power nor strength except through Allah.

Please allow me to welcome all delegates of the International Conference on Malay Medical Manuscripts (ICOMMM) 2020! This year's theme: **discovery, innovation and integration**, is timely as we embrace the new norm amidst the COVID-19 pandemic. With every hardship and constraint, we are continuously being stimulated to **discover** many opportunities and venture into research in health and medical sciences. In ICOMMM, we believe that re-discovering the Malay medicine from the manuscripts and ancient practice gives us the prospect to understand and appreciate the epistemology of medicine and remedies from our ancestors. Learning from history ensures current and future generations are inspired by the Malay Civilisation and take the lead to **innovate** and **integrate** the Malay medical knowledge with the conventional approach. I have no doubt that delegates will take part in thought provoking and stimulating discussion. The assortment of topics is also sure to provide the delegates with a fascinating insight into the contents of Malay medical manuscripts to the modern world.

The event could not have taken place without the support from our Rector, Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak and Faculty Dean, Prof. Dr. Suzanah Abdul Rahman. We are most grateful for the generous financial support from iKOP, ACE Holding Group and other co-sponsors. We are sure that every reader interested in looking for new drugs and new approaches to treating diseases, will find this ICOMMM captivating and fruitful. Please enjoy!

Intan Azura Shahdan, Ph.D
Chairman of the ICOMMM 2020 Organising Committee

LAWAN SAKIT HABIS- HABISAN.

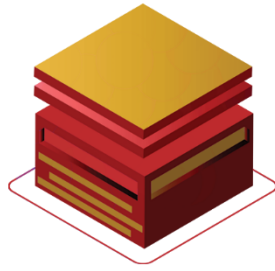


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IKOP



Keynote Presentation

Day 1 | 15 Dec 2020




KEYNOTE I



Dr. Goh Cheng Soon

Director, Traditional and Complementary Medicine Division, Ministry of Health, Malaysia

Dr. Goh Cheng Soon is presently the Director of the Traditional and Complementary Medicine Division, Ministry of Health, Malaysia. Dr Goh began her career in Malaysia as an allopathic doctor in Hospital Queen Elizabeth, Kota Kinabalu, Sabah, in 1993. prior to her transfer to the Medico-Legal Unit, Practice Division and Traditional and Complementary Medicine Division. She and her team had implemented the Traditional and Complementary Medicine Act 2016 (Act 775) and developed the Traditional and Complementary Medicine Blueprint 2018-2027 (Health Care). She was one of the committee members in the Medical Research and Ethics Committee, council members in the Council of Traditional and Complementary Medicine, Ministry of Health and a consultant in Traditional and Complementary Medicine to the World Health Organization. Recently, she was also involved in the policy-making and administrative support to hospitals to fight against COVID-19.



Regulatory Challenges in Uplifting Traditional Malay Medicine (TMM) in Malaysia

Dr. Goh Cheng Soon

- Traditional and Complementary Medicine Division, Ministry of Health Malaysia, Block E, Cenderasari Road, 50590 Kuala Lumpur | dr.goh_cs@moh.gov.my

Throughout the world, there is an increased level of awareness and acceptance of traditional and complementary medicine (T&CM) in enhancing health and general well-being. T&CM has become increasingly popular in Malaysia, with its rich and bountiful heritage of multi-ethnicity, multiculturalism, biodiversity and range of T&CM practices.

The integration of T&CM including traditional Malay medicine (TMM) into the national health care system is geared for the future and it is our vision to see its co-existence and harmonisation with conventional medicine. Ministry of Health (MOH) has taken a proactive approach in ensuring the safe and good quality T&CM practices being rendered to the public in order to facilitate its integration into the national health care system.

The governance of T&CM industry covers the regulation of practices and practitioners, education and training as well as products and research. The gazettment of the T&CM Act 2016 [Act 775] on 1 August 2016 is one of the biggest catalysts for the development and professionalisation of T&CM by regulating T&CM practices and practitioners.

MOH faces various issues and challenges in uplifting T&CM including Malay Medicine. The challenges are difficulty in enforcing the T&CM Act 2016, lack of education and training, inadequate qualified academic staff, lack of research data, and lack of understanding and prejudice towards the T&CM profession. However, with continuous and consistent efforts from all stakeholders, solutions could be developed to promote the safe and effective use of T&CM through the regulation of products, practices and practitioners.

KEYNOTE II



Professor Emeritus Dr. Shaharir bin Mohamad Zain
Mantan Presiden ASASI

Prof. Emeritus Dr. Shaharir b. Mohamad Zain berpendidikan penuh aliran bahasa Melayu sehingga ke peringkat Sijil Tinggi Pelajaran Malaysia (STPM) sebelum melanjutkan pendidikannya ke Australia di bawah Colombo Plan Scholarship 1967-1974. Beliau merupakan anak Melayu pertama beroleh Ijazah Doktor Falsafah (Ph.D) dari La Trobe University, Australia pada 1974 di dalam bidang Matematik Fizik dan seterusnya berkhidmat di UKM sehingga bersara wajib pada 2004. Kini beliau berkhidmat sebagai Felo Penyelidik Kanan di Pusat Dialog Peradaban, UM sejak 2011. Beliau mendapat pengiktirafan Profesor Emeritus pada Majlis Konvokesyen UKM sesi 2014/2015.

Kejayaan dan sumbangan besar beliau adalah melalui, pembinaan teori baru dalam kefahaman mekanik kuantum menerusi kamiran fungsian. Beliau juga membina formulasi teori pengoptimuman multi-matlamat yang lebih serasi dengan Islam, membina Lagrangean baru bagi penyelesaian yang memenuhi persamaan KdV dan menemui sistem nombor, angka serta sistem sukatan Melayu. Bahkan beliau mengukuhkan gagasan teori dan formula yang spesifik dalam pemprimumian dan pengislaman ilmu terutamanya dalam sains matematik. Beliau juga telah membina model peruntukan sumber universiti di Malaysia. Monograf terbaharunya, Cabaran Mantik pada Muslim terbitan Pusat Dialog Peradaban 2019 memaparkan banyak unsur mantik Melayu dan Barat yang membuka ruang penyelidikan yang cukup mencabar; dan Falsafah Ilmu Sains dan Matematik Malayonesia terbitan Akademi Ketamadunan, Kolej Dar al-Hikmah 2018. Kepelbagaian ini menjadikan beliau seorang sarjana yang berdaya tinggi dalam aneka ilmu. Beliau juga merupakan aktivis dalam memartabatkan Bahasa Melayu setanding dengan bidang-bidang lain.

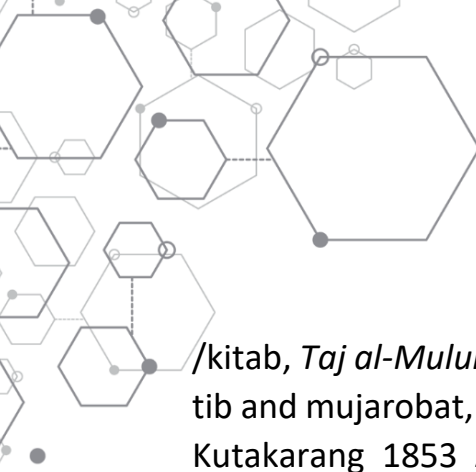


Issues of Medical Manuscripts in Malay Jawi Before 1900

Shaharir bin Mohamad Zain

Centre for Civilisational Dialogue (Pusat Dialog Peradaban), Level 1, Door C6,
High Impact Research Building, University of Malaya, 50603 Kuala Lumpur
riramzain@yahoo.com

Malay medical manuscripts are manuscripts in *tib* and *mujarobat* written in Malay and using *Jawi* characters, and the scope of these fields are presented here. We propose 10 research issues in these fields but here we only concentrate on the items which we have been engaged together in two research groups in ethnoscience at INSPeM, UPM (known as the KuPeLEMa) since 2005 and at PDP, UM (known as *Kumpulan Penyelidikan Warisan Sains*, KuPeLARIS) since 2011. One of the issues is identifying the manuscripts in the world and we find that the medical manuscripts which have been catalogued before 1997 are the second largest after the number of manuscripts which we had categorized them as “*ramalan and taabir*” (“predictions and inferences”), but we found that the later manuscripts also contain some medical elements. For the second issue, we find that the oldest medical manuscript *Sia-sia Berguna* written in the early 15th century AD by Syafiyuddin al-‘Abbasi as described by Mohd Shoghri is still unavailable for us and a manuscript entitled *Kitab Sia-sia Berguna* at PNM is not the same as the one in the Mohd Shoghri’s Collection. We note also that this earliest manuscript is more than 100 years older than the earliest medical writing in English 1547 by Boorde, *Breuiary of Healthe*. We also represent studies on the second oldest manuscript, the Chapter Seven of the *Bustan al-Salatdin* by al-Raniyriy, dated 1047 H = 1638 AD which is heavily influenced by the Islamic medical elements and naturally free of unislamic medical practices. We also found a medical manuscript at PNM which is appropriately referred to it as the oldest original Malay medical manuscript to date and PNM entitled it as *Tib dan Azimat* dated 1020 H = 1795 AD. The manuscript contains a collection of medical practices by the great Bomoh, ‘Abd al Rahman. We also had studied two manuscripts in the category of “*ramalan and taabir*”, namely *Firasat dan Akal* and *Petua Petua*, both are estimated as written in the 19th century AD and we find that both contains interesting medical elements. Therefore, any studies on Malay medical manuscripts should not abandon the manuscripts in the “*ramalan dan taabir*” category. We present our study on the famous manuscript



/kitab, *Taj al-Muluk*, written and edited by Isma'il Aceh 1889 AD which contains tib and mujarobat, and elements of mujarobat from astrology written by 'Abbas Kutakarang 1853 AD. We also present some studies by other scholars on selected famous mujarobat manuscripts written before 1900 AD for the purpose of comparative studies with tib manuscripts, on selected great books in Malay literature and general books on history and culture of the people in the South-East Asian region, Malayonesia, written in various European languages before 1800 AD. All these are used to show that medical knowledge among Malayonesians were widely practiced and to establish the validity of the common belief that medical knowledge in Malayonesian civilisation was remarkable, in fact better than the European, especially English achievement before 18th century. We highlight the fact that many of medicinal flora and fauna species in the manuscripts are currently unknown of their existence besides various unknown diseases as well. As far as the philosophy of Malay medical knowledge is concerned we show the difference between our findings with those of the Western scholars and some of our own scholars as well as such that we do not prescribe to the belief that the Malay medical philosophy is entirely based on animism and Hindu-Buddhism or completely Islamic in nature. Our philosophy is the syncretism of these two philosophies. Other remaining issues are presented in brief while indicating our preference in the path of the relevant research.



Keynote Presentation

Day 2 | 16 Dec 2020




KEYNOTE III



Pak Kemas H. Andi Syarifuddin

Pengelola Laboratorium Naskah Melayu Pascasarjana UIN Raden
Fatah Palembang

Nama penuh diberi ialah Kemas Andi Syarifuddin bin Kemas H. Ibrahim Umary. Pak Kemas dilahirkan di Palembang pada tanggal 26 Mei 1971. Mendapat pendidikan di Institut Agama Islam Negeri Raden Fatah Palembang (1996) dan memiliki pengikhtirafan pascasarjana daripada Universitas Islam Negeri Raden Fatah Palembang (2020). Kini, beliau bertugas sebagai Pengurus Yayasan Masjid Agung Palembang selain guru untuk Sekolah Dasar Plus di IGM Palembang dan BLU di UIN Raden Fatah Palembang. Selain itu, Pak Kemas juga merupakan TIM Pelestarian Peninggalan Kesultanan Palembang Darussalam sejak 2005 sehingga kini. Kepakaran dan kecenderungan Pak Kemas di dalam bidang manuskrip purba mendapat pengikhtirafan di Indonesia dan di persada antarabangsa. Beliau mendapat anugerah Tokoh Peduli Kebudayaan Kota Palembang 2017 oleh Walikota Palembang (2017), Anugerah Budaya Naksatra Sriwijaya oleh Gubernur Sumatera Selatan (2018), Pelestari Naskah Kuno oleh Kepala Perpustakaan Nasional RI (2019) dan juga Certificate of Appreciation Manuscripts Owner oleh Digital Repository of Endangered and Affected Manuscripts (DREAMSEA, Jakarta 2018). Pak Kemas merupakan penulis buku sejak zaman universiti lagi. Antara karya terawal beliau adalah *Manaqib Syekh Muhammad Samman* (1994), *Kamus Kecil Bahasa Palembang* (1995) dan *Manaqib Syekh Abdus Samad al-Palembani* (1997). Minat dan kesungguhan beliau dalam meninggikan martabat ilmu tamadun di Palembang dinukilkan di dalam beberapa buku termasuk *261 Tahun Masjid Agung dan Perkembangan Islam di Sumatera Selatan* (TIM 2001), *Syair Perang Palembang 1819* (2009), *Ratib Samman: Riwayat, Fadhilat & Silsilahnya* (2010), *101 Ulama Sumsel: Riwayat Hidup & Perjuangannya* (Ar-Ruzz Media, Yogyakarta, 2013) dan *Syair-Syair Spiritual Syekh Muhammad Azhari al-Palembani* (2015).



Manuskrip Perubatan Melayu Dalam Khazanah Warisan Keraton Palembang Darussalam

Kemas H. Andi Syarifuddin

- Program Pascasarjana, UIN Raden Fatah Palembang, Jl.Prof.K.H.Zainal Abidin Fikri, KM.3,5 Palembang, Sumatera Selatan,30126, Indonesia | kemasandisyarifuddin71@gmail.com

Kesultanan Palembang Darussalam pernah menjadi salah satu dari empat Pusat Pengkajian Islam Melayu terbesar di Nusantara sekitar abad ke-18. Pada periode ini, keraton Kesultanan Palembang banyak melahirkan ulama-ulama besar terkemuka, penulis, yang mewariskan karya-karya ilmiah baik masih dalam bentuk manuskrip maupun cetak, seperti: Syekh Abdus Samad al-Palimbani, Kemas Fakhruddin, Syekh Syihabuddin, Kemas Ahmad bin Abdullah, Syekh Muhammad Akib bin Hasanuddin, Syekh Muhammad Azhari, dan lainnya. Sejak Kesultanan Palembang Darussalam dimazlulkan oleh kolonial Belanda (1823), harta kekayaan dan khazanah koleksi manuskrip yang tersimpan di keraton sempat dijarah dan diangkut oleh kaum penjajah (Belanda-Inggris) ke negaranya sekitar lebih dari 100 judul, dan kini sebagian tersimpan di berbagai perpustakaan dan muzeum di Belanda, Inggris, Paris, Rusia, Jakarta, dan lain tempat. Meskipun demikian, masih untung beberapa khazanah manuskrip Palembang yang tersisa, masih sempat diselamatkan oleh para ulama, bangsawan, masyarakat dan lainnya hingga turun-temurun. Khazanah manuskrip tersimpan ini sudah tentu menjadi warisan peradaban Melayu yang tak ternilai harganya, kerana dapat menjadi sumber penelitian dan kajian sejarah bagi masyarakat luas. Pertulisan manuskrip Melayu meliputi seluruh aspek kehidupan, seperti keagamaan, sejarah, adat istiadat, politik, kesusastraan, bahkan termasuk bidang medis dan perubatan. Manuskrip Perubatan Melayu Palembang adalah bukti nyata tingginya peradaban kebudayaan Melayu, serta mencerminkan ketinggian intelektual muslim atau kearifan lokal. Manuskrip perubatan Melayu di Palembang terdapat cukup banyak. Disimpan dan dikoleksi secara pribadi maupun lembaga. Di antaranya yang tersimpan di Laboratorium Naskah Melayu Pascasarjana UIN Raden Fatah Palembang dan koleksi Kemas H. Andi Syarifuddin.

Kata Kunci: Perubatan Melayu, Keraton Palembang, Manuskrip

KEYNOTE IV



Associate Professor Dr. Mohd. Affendi Mohd. Shafri

Flagship Project Leader, Health Information and Knowledge from
Malay Medical Manuscripts (HIKAM), IIUM

Assoc. Prof. Dr. Mohd Affendi received his PhD in Neurophysiology in 2012 from Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia. His interest in drug discovery and medical history leads him to the Malay Medical Manuscripts. He has presented at local and international conferences on this topic. He has also published several books such as *Tayyib al-Ihsan* (2015), *al-Rahmah fi al-Tibb from Aceh* (2017), *Rumah Ubat di Pulau Penyengat* (2018), *Sari Segala Ubat dari Pontianak* (2019) dan *Sudah Gaharu Cendana Pula* (2020). At IIUM, he is Project Leader for the Flagship Project on Malay Medical Manuscripts (HIKAM).

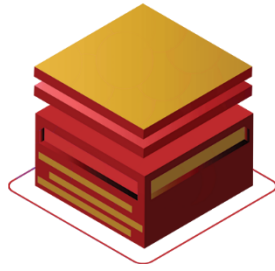


Development and Use of IIUM Scientific Index for Malay Medical Manuscripts (ISIM)

○ **Mohd. Affendi Mohd. Shafri**

Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University, Jalan Sultan Ahmad Shah, 25200 Kuantan, Pahang | affendishafri@iium.edu.my

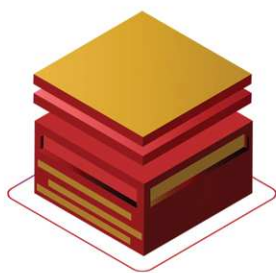
Malay medical manuscripts have become new objects of study at IIUM. The research at IIUM has departed from common manuscript study as emphasis is given on historical, philosophical as well as the practical use of manuscript content. In order to accelerate scientific study on manuscript data, a scientific index called IIUM Scientific Index for Malay Medical Manuscripts (ISIM) has been used to analyse Malay medical manuscript data. The three components include (i) index of comparison with published scientific articles, (ii) bioprospective index, and (iii) consensus index with other manuscripts. Each formulation in a manuscript would be graded according to these indices and a priority list can be generated to help a researcher in finding the formulation with the strongest overall value. The recent COVID-19 pandemic has shown the value of having such index in helping to quickly identify possible new cure.



Oral Presentations

Programme Schedule

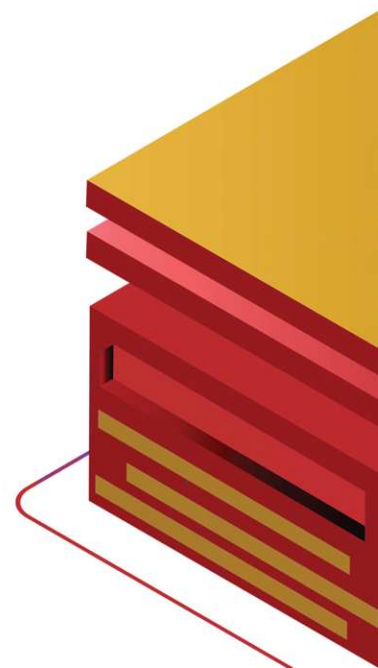


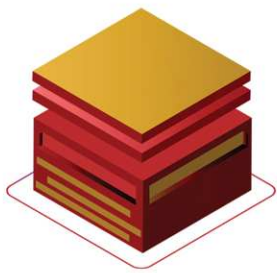


SESSION 1 PROGRAMME MANUSCRIPT STUDIES 15TH DECEMBER 2020 (DAY 1)

SESSION 1 - Manuscript Studies

- 11.30 AM** OP01 - Malay Manuscripts on Traditional Malay Medicine In Syed Muhammad Naquib Al-Attas (ISTAC) Library, IIUM
Wan Ali @ Wan Yusoff Bin Wan Mamat
- 11.45 AM** OP02 - An Analysis on Medical Hadith in Chapter 7 of Bustan al-Salatin of Nur al-Din al-Raniri
Hasbullah bin Mohamad
- 12.00 PM** OP03 - Discourse on Ethnomedicinal Plants in “Hikayat Nurul-Lisan Menjawab Masalah” for Gastroenterology Purposes
Wardah Mustafa Din
- 12.15 PM** OP04 -An Insight into Medicinal Plants from the Malay Medical Manuscript, MSS 3126
Izzuddin Ahmad Nadzirin
- 12.30 PM** OP05 - Malay Medicinal Knowledge on a Palm-leaf Manuscript: A Descriptive Study
Ainaaul Mardhiyah Binti Jamil
- 12.45 PM** Q&A Session 1

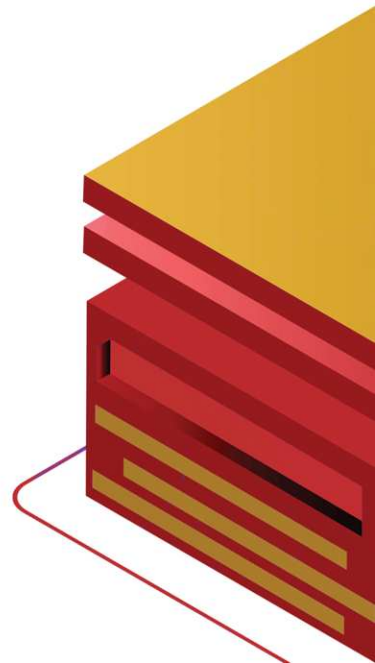


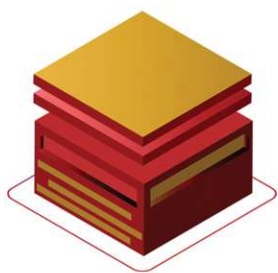


SESSION 2 PROGRAMME REPRODUCTION & RESPIRATORY PROBLEMS 15TH DECEMBER 2020 (DAY 1)

SESSION 2 - Reproduction & Respiratory Problems

- | | |
|----------------|---|
| 2.00 PM | OP06 - Breastfeeding Challenges: Data Mining on Malay Formulation and Practice Recommended in the Malay Medical Manuscripts
<i>Nur Alia binti Mohammad Rihan</i> |
| 2.15 PM | OP07 - Malay Practices on Prevention and Treatment of Female Sexual Dysfunction Mati Putik
<i>Ain Ilmiah binti Anhar</i> |
| 2.30 PM | OP08 - Treatment Formulations for 'Resdung' in Malay Medical Manuscript, MS 699
<i>Nur Syazwani Feisal Hamdee</i> |
| 2.45 PM | OP09 - Ancient Remedies for Respiratory Symptoms and Diseases
<i>Raja Nurhanin Binti Raja Perdaus</i> |
| 3.00 PM | OP10 - Extraction of Medicinal Information on Respiratory System From MSS 4837
<i>Harith Firdouse Bin Idham Khalid</i> |
| 3.15 PM | Q&A Session 2 |

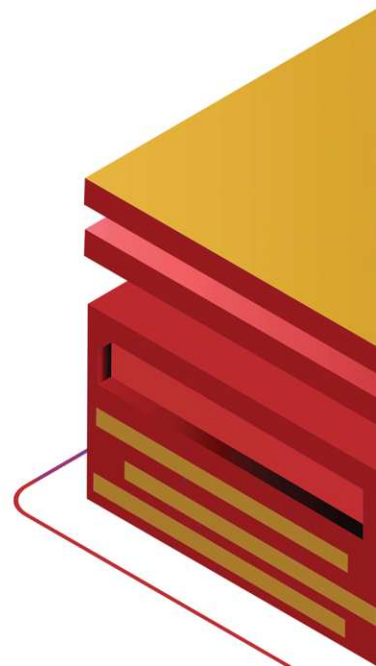


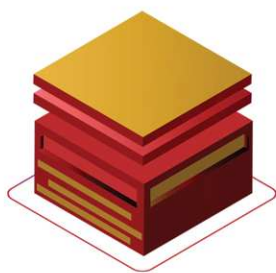


SESSION 3 PROGRAMME MATERIALS & METHODS 15TH DECEMBER 2020 (DAY 1)

SESSION 3 - Materials & Methods

- 3.45 PM** OP11 - A Narrative Review on the Potential Use of Board Games for Promoting Malay Medicine
Ibrahim Adham bin Taib
- 4.00 PM** OP12 - The Use of Germinating Parts of Plants; Mata Kunyit, Sunti Halia and Lemukut in Medical Treatment from Malay Medical Manuscripts
Intan Shahrira Binti Noorain
- 4.15 PM** OP13 - Local Units of Measurement and Weight Used in Traditional Malay Medicine Manuscripts (MS 33 DBP)
Ros Mahwati Ahmad Zakaria
- 4.30 PM** OP14 - Aloe vera from Islamic Perspective, Scientific Study and Malay Traditional Medicine Manuscripts: An Analysis of Its Real Potential and Benefits
Madiyah Binti Mohd Budiman
- 4.45 PM** Q&A Session 3

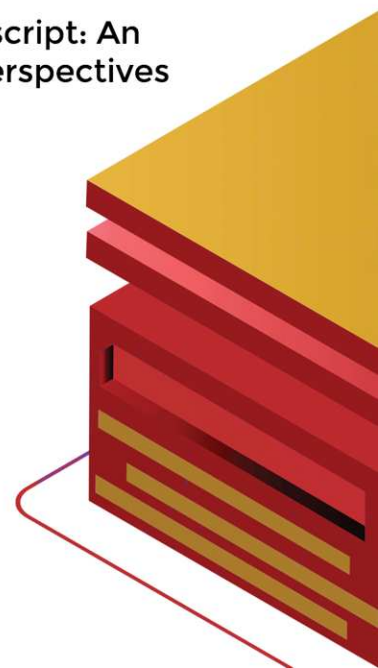


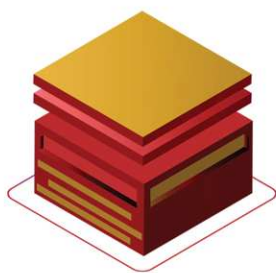


SESSION 4 PROGRAMME FROM TEETH TO TUMOUR & TOXIN 16TH DECEMBER 2020 (DAY 2)

SESSION 4 - From Teeth to Tumour and Toxin

- 10.45 AM** OP15 - Dental Diseases and Treatments in *Tayyib al-Ihsan fi Tibb al-Insan*
Ahmad Badruddin Ghazali
- 11.00 AM** OP16 - *Solanum torvum* for hypertension in 'Kitab al-Tibb': A systematic review on the Scientific Evidence
Azlini binti Ismail
- 11.15 AM** OP17 - The Effectiveness and Application of *Urtica dioica* (Stinging Nettle) for Musculoskeletal Disorders (MSDS): A Systematic Review and Meta-analysis
Sahira Syamimi Binti Ahmad Zawawi
- 11.30 AM** OP18 - Analysis and Medicinal Content of Tumour Treatment in MSS 4016
Mohamad Adib Bin Ismail
- 11.45 PM** OP19 - Traditional Medicine for Cancer Treatments: A Comparative Study Between Scientific Reports and the Malay Medical Manuscripts
Mardhiah Mohammad
- 12.00 PM** OP20 - *Zingiber officinale* Rhizome Extract as A Potential Anti-Snake Venom
Nurrul Hazwani Mohamad Yunus
- 12.15 PM** OP21 - Jujube in Malay Medical Manuscript: An Analysis from Scientific and Islamic Perspectives
Najihah binti Mohamad Sabri
- 12.30 PM** Q&A Session 4

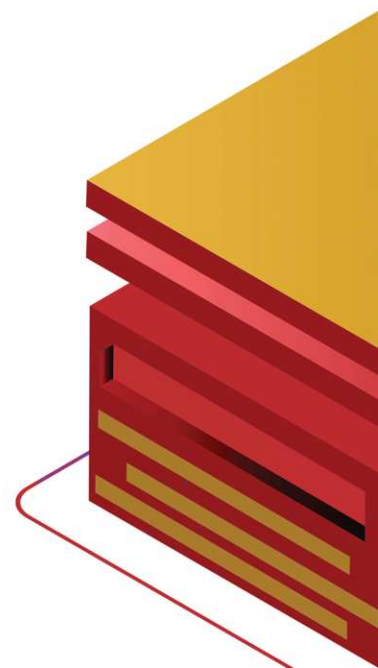


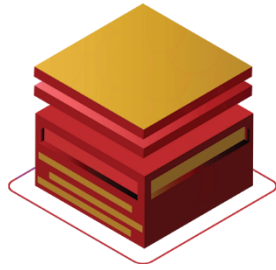


SESSION 5 PROGRAMME INFECTIOUS DISEASES 16TH DECEMBER 2020 (DAY 2)

SESSION 5 - Infectious Diseases

- | | |
|----------------|--|
| 2.00 PM | OP22 - Biomedical Appraisal of Malay Medical Manuscript MSS 4016 on Typhoid Fever
<i>Muhammad Hakimi bin Ruzaidee</i> |
| 2.15 PM | OP23 - Finding Cures for the Emerging Yaws
<i>Nurul Syahirah Binti Abdul Halim</i> |
| 2.30 PM | OP24 - Antimalarial Assessment on the Formulation from Tayyib Al-Ihsan Fi Tibb Al-insan By Shaikh Ahmad Al-Fatani
<i>Nur Khairulbariah Khairul Niza</i> |
| 2.45 PM | OP25 - <i>In vivo</i> Antiplasmodial Assessment of <i>Syzygium aromaticum</i> Based on the Formulation From the Malay Medical Manuscripts
<i>Norazsida Binti Ramli</i> |
| 3.00 PM | OP26 - Antibacterial Activity of <i>Allium cepa</i> -based Formulations as Documented in the Malay Medical Manuscripts
<i>Hanani Ahmad Yusof @ Hanafi</i> |
| 3.15 PM | OP27 - Black Seeds (<i>Nigella sativa</i>) from Islamic and Science Perspective
<i>Mawaddah Bt Abd Manan</i> |
| 3.30 PM | OP28 - Leaf Anatomy of the Medicinal Plant <i>Citrus aurantifolia</i> (Christm.) Swingle
<i>Zainab Sholehah Abdul Rashid</i> |
| 3.45 PM | Q&A Session 5 |





Oral Presentations

Abstracts



Malay Manuscripts on Traditional Malay Medicine in Syed Muhammad Naquib Al-Attas (ISTAC) Library, IIUM

Wan Ali @ Wan Yusoff Bin Wan Mamat

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Malay manuscripts are considered as heritage materials of the Malays, rich in local wisdom on matters of interest to them. One of the subjects of interest to the Malays was medicine, often known as traditional Malay medicine. Texts on traditional Malay medicine were not confined to kitab tib only but also could be found in other genres such as amulet (azimat), du`a and human anatomy because the fields of healing covers both the physical and psychological ailment. ISTAC library has 8 manuscripts on traditional Malay medicine, in the form of tib, amulet (azimat), du`a and a text on human anatomy, a rare item, with the accessing numbers of MAL 015(36), MAL 015 (47), MAL 015(56), MAL 041 (6), MAL 041 (8), MAL 54, MAL 76 and MAL 106. Three of the texts are notes of 1-2 pages only while the others are more substantial between 10 to 38 pages. This paper would explain briefly about the manuscripts concerned. However, for a few titles, particularly the manuscript on human anatomy, a more detailed explanation would be given. From the limited numbers of Malay manuscripts on medicine in ISTAC library, it was found that the process of healing using recipes of ingredients would be better undertaken together with du`a. Human illnesses were both physical and psychological in nature. One rare manuscript on human anatomy provided not only the basic functions of the human organs but of equal importance was the psychological and philosophical understanding of the whole healing process, including how the mind functions.

Key words: ISTAC, medical manuscript, Syed Naquib al-Attas library, Malay medicine

Analisa Terhadap Hadith-hadith Perubatan dalam Bab VII dalam Kitab *Bustān al-Salāṭīn* karangan Nur alDin al-Raniri | An Analysis on Medical Hadith in Chapter 7 of *Bustān al-Salāṭīn* of Nur al-Din al-Raniri

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Syeikh Nur al-Din Muhammad bin Ali bin Hasanji bin Muhammad Hamid al-Raniri al-Quraisy al-Syaffi'i, dikenali dengan nama Nur al-Din al-Raniri (1658) adalah tokoh ulung sarjana Islam di Aceh semasa pemerintahan Sultan Iskandar Thani (1636-1641) yang menyumbang kepada perkembangan ilmu akidah, tasawwuf dan *fiqh* melalui karya-karya beliau dalam bidang tersebut. Di antara karangan al-Raniri yang terkenal ialah *Bustān al-Salāṭīn* yang mengandungi ilmu perubatan dalam Bab ke-VII nya. *Bustān al-Salāṭīn* merupakan bukti bertulis terawal ilmu perubatan Islam Melayu yang bersifat saintifik. Dalam bab VII *Bustān al-Salāṭīn* tersebut terdapat hadith-hadith berkaitan dengan nasihat-nasihat umum dan juga panduan-panduan dalam ilmu perubatan sebanyak empat puluh lapan (48) hadith. Dalam bahagian ini, terdapat hadith-hadith yang tidak dinyatakan sumbernya. Manakala sebahagian yang lain di datangkan dalam bentuk matan yang berbeza dalam perkara yang sama. Namun berkaitan dengan autoriti hadith, beliau tidak menyatakan dengan jelas hal tersebut. Oleh itu kajian ini bertujuan untuk menyelidik sumber dan autoriti hadith-hadith tersebut. Untuk tujuan itu, kaedah *takhrij* hadith dan kajian sanad dan perawi (*al-jarh wa al-ta'dil*) akan digunakan untuk mengenal pasti sumber dan autoriti hadith-hadith tersebut. Justeru, dengan kajian ini akan menyingkap sejauh mana sikap al-Raniri terhadap penggunaan hadith-hadith dalam *Bustān al-Salāṭīn* di samping menambahkan lagi nilai ilmiah karya tersebut.

Kata kunci: *Bustān al-Salāṭīn*, hadith, perubatan Melayu, *takhrij*, sanad.

Discourse of Ethnomedicinal Plants in “*Hikayat Nurul-lisan Menjawab Masalah*” for Gastroenterology Purposes.

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Since ancient times, people have been using plants not only as a source of food, but also as a source of medicine. In the Malay culture, many ethnomedicinal plants are being used for various medicinal properties. This knowledge is recorded in many ancient Malay manuscripts that acknowledge many different local names of plants and their traditional uses. This study will be discussing one of the ancient Malay manuscripts named “*Hikayat Nurul-lisan Menjawab Masalah*” whereby the original work was written in *Jawi* alphabets. Fortunately, Harun Mat Piah in his book, “*Kitab Tib Ilmu Perubatan Melayu*” had translated the work to *Latin* alphabets and organized it to a better structure which makes the content readily accessible and easily interpreted for Malay researchers. Among illnesses frequently mentioned in the manuscript are gastroenterology related, such as digestion, bloating, diarrhea and others. The purpose of this study is to analyse and tabulate ethnomedicinal plants documented in the translated manuscript which mentioned gastroenterology benefits. To attain the research objectives, qualitative thematic analysis will be employed on the translated manuscript in order to classify different themes in the text systematically. The study highlights that there are 31 plants mentioned in the manuscript related to gastroenterology purposes. There are different way of use, whereby some are provided with detailed explanation, and others are very general. Some plants are mentioned as being used for the well-being of the digestive system. This study is imperative for comprehensively structuring the traditional knowledge obtained in the manuscript for easy reference and access to other researchers locally and internationally. Besides enriching our traditional knowledge on ethnomedicinal plants, this research will indirectly serve to preserve an important Malay cultural heritage.

Keywords: Ethnomedicinal plants, thematic analysis, Malay ancient manuscript, Malaysia medicinal plants, gastroenterology.

An Insight Into Medicinal Plants from Malay Medical Manuscript MSS 3126

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Malay Medical Manuscripts can be considered as forgotten gems, especially in Malaysia. The presence of ancient scriptures detailing remedies for numerous ailments since hundreds of years ago seems to be neglected and what is more, the physical condition of those manuscripts worsen day by day. One of them is a manuscript located in Pusat Kebangsaan Manuskrip Melayu (PKMM) at Perpustakaan Negara Malaysia with the catalogue number of MSS 3126. The manuscript has undergone conservation as the sheets had been pasted on new papers. The purpose of this study is to extract medicinal content mentioned in the manuscript and analyse herbal plants in terms of their scientifically proven pharmacological effects. There are a few pages missing at the beginning, in the middle and at the end of the manuscript, however the number of pages missing is unknown. Nevertheless, 13 pages remain and are written in 'Jawi' using 'Naskh' calligraphy. The writing is relatively clear and easy to read, and every chapter is separated with the word 'Fasal ini' in red ink. Each chapter represents each disease and each formulation in one chapter is separated with the word 'Sebagailagi' in red ink. Despite not knowing the author, information contained within is valuable and worth a research. Upon transliteration of the text into Roman letters, a total of 18 diseases were identified including diarrhoea, yaws, cataract and mouth ulcer, and 37 formulations have been noted as the remedies. However, one of the diseases has no further information for identification and three formulations are not complete because of the missing pages. Out of the many ingredients mentioned in the formulations, 70 are plant-based, 15 are mineral-based, 3 are animal-based, others and unknown are 13 and 12 respectively. This study highlights important medicinal plants for certain diseases and the information can serve as the basis for natural product researches.

Keywords: Malay medical manuscript, MSS 3126, natural product, medicinal plant, traditional medicine.

Malay Medicinal Knowledge on a Palm-Leaf Manuscript: A Descriptive Study

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Numerous Malay medical manuscripts have been discovered in the collections of libraries such as national libraries, institutions such as museums, or personal collections. These valuable resources have brought new light to the study of science and literature of the Malay people particularly in the field of medicine. Amongst these collections, one medical text in the collection of the Islamic Arts Museum Malaysia (IAMM) in Kuala Lumpur is considered a remarkably unique text due to its being written on a palm-leaf material (*Nypa fruticans*) - a case of such is unusual considering the common material used in other discovered Malay medical manuscripts is paper. Our paper presents a descriptive study of the manuscript, coded IAMM 1998.1.3370. It is a complete text that ends with a colophon supplying the name of the author, and date of writing. The manuscript contained medical instructions and prescriptions for numerous health problems such as diabetes, malaria, and others and was prepared in a booklet form by stitching several nipah leaves together to form several square pages which are then bound with a cloth. Naskh 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, embrittled condition due to several factors such as age, material used, etc. Considering the valuable information in the manuscript, there is a necessity for performing preservation, conservation and transliteration work on this manuscript before the content is lost forever.

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

Breastfeeding Challenges: Data Mining on Malay Formulation and Practice Recommended in Malay Medical Manuscripts

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Breast milk confers numerous benefits to infants throughout their stages of life. Inappropriate practice and cessation of breastfeeding are also associated with several breastfeeding-associated disturbances among women. In addition, it is greatly renowned that Malays have inherited many practices for centuries, especially practices using natural products in healing an illness, including remedies to enhance milk production and treat breastfeeding-associated problems. These practices had been documented in written form which is known as Malay Medical Manuscripts. Therefore, this study sought to discover potential natural products that were employed by Malays to overcome problems in breastfeeding mothers as documented in Malay medical manuscripts. A narrative review procedure was applied for data mining on Malay medical manuscripts. Thematic analysis was adopted which is crucial to investigate the data that are significant for this study. The study discovered some information closely related to breastfeeding aspects. Throughout reviews of 15 publications, there were only three derived sources that are related to breastfeeding which are Kitab Perubatan Melayu: Tayyib al-Ihsan fi Tibb al-Insan, Seksologi: Ilmu Perkasihan Melayu and Warisan Perubatan Melayu. Also, nine traditional remedies were found in the formulations. Thematic analysis showed that there were two breastfeeding-associated problems mentioned in the formulations; breast engorgement and clogged ducts. This study has discovered that there is data available about breastfeeding, including its treatments, recommended in the Malay medical manuscripts. However, more transliteration of the manuscripts and review of secondary sources is proposed in order to overcome the limitation of data associated with breastfeeding. This discovery of breastfeeding treatment in Malay medical manuscripts would be very much appreciated if they can contribute to the incorporation of local natural products into the current modern medicine for breastfeeding treatment.

Keywords: breastfeeding, Malay medical manuscript, narrative review, thematic analysis

Malay Practices on Prevention and Treatment of Female Sexual Dysfunction (*Mati Putik*)

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Mati putik or female sexual dysfunction (FSD) is a term commonly used to refer to sexual problems in Malay women and it usually happens among married women and after childbirth. Women with FSD tend to have a low sexual desire and fatigue. In Malay context, FSD is considered a sensitive issue and not many people are comfortable discussing it or willing to seek treatment in the clinics. Therefore, this study aimed to identify the signs and symptoms of FSD and traditional remedies to treat and prevent FSD, from transliterated books of Malay Medical Manuscript (MMM). This study reviewed 13 derived sources of MMM from the year of 2005 until 2019. The signs and symptoms of FSD were divided into three categories of female sexual dysfunction based on Diagnostic and Statistical Manual of Mental Disorder (5th Edition), which are female sexual interest/arousal disorder (FSIAD), female orgasmic disorder (FOD) and genitopelvic pain/penetration disorder (GPPPD). From the results, there were a total of 78 signs and symptoms of FSD and 266 traditional remedies found across the manuscripts. There were 26 signs and symptoms recorded for FSIAD, one symptom for FOD and 22 signs and symptoms for GPPPD. There were also two symptoms of hypersexuality and two symptoms of post-coital coughing. In conclusion, MMM provides a rich source of information regarding *mati putik* that may contribute to the development of treatment and prevention of FSD in conventional medicine. Hence, future study is warranted for further analysis of *mati putik* and should be verified by numbers of experts in the field of MMM and Obstetrics & Gynaecology.

Keywords: Malay Medical Manuscript, Malay traditional medicine, sexology

Treatment Formulations for 'Resdung' in Malay Medical Manuscript, MS699

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Resdung, a commonly used term among Malaysians can be referred to as either allergic rhinitis or sinusitis. Allergic rhinitis is an inflammation of the nasal mucosa whereas the sinusitis is an inflammation of the nasal sinuses which are the hollow cavities in the skull located between and behind the eyes, in the cheeks and also forehead. These diseases affect the worldwide population and the prevalence of this disorder is increasing. Study in Malay medical manuscripts for treatment of many diseases including resdung is important to reveal knowledge of the past and persevering it would benefit future generation and therapeutic discovery. Hence, the MS699 was selected from the National Library of Malaysia and transliterated from Jawi into Roman script before the therapeutic information such as treatment formulations, signs and symptoms of diseases as well as its ethno-botanical were analysed and compared to the available scientific study. The study discovered two multiple compounded formulations for treatment of resdung. The material medica of the formulations was mostly locally available vegetative such as sirih (*Piper betle*), cekur (*Kaempferia galangal*) and limau nipis (*Citrus aurantiifolia*). Though information regarding signs of the disease in the manuscript was limited than the other available transliterated publications as well as current medical textbook, the description was sufficient to imply inflammation. In conclusion, the manuscript reflects documented evidence of herbal plants being utilized as medication in the Malay community.

Key words: Allergic rhinitis, resdung, herbal medicine, Malay medical manuscript, sinusitis

Ancient Remedies for Respiratory Symptoms and Diseases

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Introduction: Study on traditional and complementary medicine is greatly encouraged by the World Health Organization Traditional Medicine Strategy (2014-2023). Malay manuscripts can serve as reliable sources of knowledge on traditional Malay medicine. The control of the disease burden on respiratory diseases is still a major challenge worldwide. With the increased tolerance to antibiotics and reports on the adverse effects of conventional medicine, scientists must race against time to develop and innovate medicine to treat emerging respiratory diseases. **Objective:** This study aims to document information on respiratory related-symptoms and diseases. **Methodology:** The information relevant to respiratory diseases and symptoms were extracted from six Malay medical manuscripts and the therapeutic effects of materials described in the manuscripts were compared with contemporary scientific studies. **Results:** Based on the findings, *batuk*, *lelah* and *esak* were the common terms used in the Malay manuscripts. A total of 63 formulations have been documented according to ten defined categories. From the formulations, 102 plant species have been used, of which 88 could be identified and 14 remained unidentified. The pharmacological effect of materials on respiratory health includes anti-inflammatory, anti-asthmatic, antimycobacterial, bronchodilator, anti-allergic, and antitussive. Other pharmacological activities are mucolytic or expectorant, antihistamine, antibacterial, anti-influenza and antioxidant. Roots and leaves were the most frequently used plant parts in the preparation of remedies. **Conclusion:** The evidence from this study suggests that asthma, cough and tuberculosis were the main symptoms or diseases treated. This study may provide an insight into considerable materials or formulations for further evaluated experimentally and clinically in the area of therapeutics and basis for respiratory medicine.

Keywords: Respiratory disease, Respiratory symptom, Malay manuscript

Extraction of Medicinal Information Pertaining to Respiratory System from MSS 4837

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The subsets of chronic lower respiratory diseases include pneumonia, lung cancer, and chronic obstructive pulmonary disease (COPD). In 2017 and 2018, chronic lower respiratory diseases were recorded as the second and fifth leading causes of deaths in Malaysia, respectively. Currently, β -agonists – taken orally or inhaled, are among the drugs used to treat the diseases. They are further classified into short acting β -agonists (SABA) such as salbutamol and terbutaline, as well as long acting β -agonists (LABA) like salmeterol. These drugs act as bronchodilators in treating acute exacerbations and maintenance of asthma, chronic obstructive pulmonary disease, and bronchiectasis. Despite that, this study provides medicinal information for developing natural product-based drugs, which then contribute to the establishment of Traditional and Complementary Medicine (T&CM) in Malaysia. Albeit the abundant honorary mentions of the contributions of Malay medicine, the society still lacks adequate knowledge and exposure of the aforementioned contributions. The cures and remedies record natural products like herbs and plants that are local to Southeast Asia. In encouraging this developing field of research in Malaysia, this study aims to extract medicinal content pertaining to respiratory system from a Malay medical manuscript kept in the National Library Malaysia, with catalogue number MSS 4837. The information was extracted by reading MSS 4837, in which diseases were clearly identified as every chapter represents a specific disease. Chapters have been separated by the author as red ink was used to write their initial words, such as “sebagailagi” and “bab ini”. Identified diseases are then tabulated and classified according to their respective body systems, followed by the transliteration of their corresponding formulations and categorisation of medicinal ingredients. Ultimately, the ingredients were analysed by comparing them with contemporary studies. MSS 4837 bears 22 formulations for respiratory diseases, containing 39 plants, one animal product, as well as 7 minerals and unidentified medicinal ingredients. They are intended for treating four ailments among the locals, of which ‘balgham’ or phlegm was the most frequently mentioned (72.7%), followed by ‘batuk’ or cough (13.6%), ‘senduang’ or sinusitis (9.1%), and ‘suara’ or hoarseness of voice (4.5%). Present findings demonstrated that ancient Malay physicians had an established medical knowledge concerning human respiratory diseases and treatments using natural products and herbal medicine. To allow better understanding of their healing mechanism, restricting factors of the study should be overcome by reducing limitations during the process of analysis.

A Narrative Review on the Potential Use of Board Games for Promoting Malay Medicine

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Malay medical manuscripts or *Kitab Tib* are handwritten books that describe the medical beliefs and practices of the Malay community. The manuscripts provide documented evidence that, historically, the Malay community were knowledgeable and skillful in identifying and treating local diseases by using flora and fauna, among others. Their accomplishments, however, may be lost to many; as such, there is a need to promote these manuscripts to the masses to create a sense of pride, especially in the present Malay community, in their heritage. Moreover, these manuscripts can be the basis for contemporary management of diseases. A question arises then about the choice of platform for promoting Malay medical manuscripts. To this end, this narrative review was carried out to examine the possibility of using board games to educate players about Malay medical manuscripts. Papers that discussed educational board games were identified by using selected keywords in Scopus, ScienceDirect, PubMed, and Google Scholar. This review identified various fields of studies that have benefited from using board games to gamify learning, and they ranged from medicine, chemistry, and marine to archaeology, history, and tourism. Besides the game development process, many studies also describe the effectiveness of board games for education. In summary, this review suggests that board games can be an effective platform to educate players about Malay medical manuscripts in an entertaining manner.

Keywords: Malay medical manuscript, board game, gamification, education, training

The Use of Germinating Parts of Plants; Mata Kunyit, Sunti Halia and Lemukut in Medical Treatment from Malay Medical Manuscripts

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Germinating parts of plants are the beginning of the growth of a plant that can be seed, spore or bud and usually been used in the Malay community as a spice and traditional medicine. While the scientific use of this was to allow plant development in terms of the germination process with favorable requirements. This study reviews the utilization of germinating parts of three materia medica locally known as 'mata kunyit' (*Curcuma longa* – *Zingiberaceae*), 'sunti halia' (*Zingiber officinale* – *Zingiberaceae*) and 'lemukut' (*Oryza sativa* – *Poaceae*) that are commonly incorporated in the disease cure formulation recipes to treat certain diseases by traditional Malay practitioners. Their medical use of these germinating parts was searched in six different published transliterated Malay medical manuscripts namely *MSS2999 Kitab Tib*, *Sari Segala Ubat*, *Al-Rahmah Fi Al-Tibb Wa Al-Hikmah*, *Tayyib Al-Ihsan Fi Tibb Al-Insan*, *Khazinat Al-Insan*, and *Rumah Ubat di Pulau Penyengat*. Collectively, *mata kunyit*, *lemukut*, and *sunti halia* were mentioned 13, 10 and 3 times in these six manuscripts, respectively. The review found that *mata kunyit* and *lemukut* are repeatedly used in combination to treat diseases such as dysmenorrhea, parturition, orthostatic hypotension, cough of bronchial asthma, backache, constipation, lethargy, leprosy, ulcers and edema. Whereas *sunti halia* and *mata kunyit* were used interchangeably as the adding factors in formulations to treat diseases such as dysmenorrhea and cough. These findings have enriched the enormous use of germinating tips of three plants and also revealed the benefit of plant parts that have always been neglected specifically *mata kunyit*, *sunti halia* and *lemukut*.

Local Units of Measurement and Weight Used in Traditional Malay Medicine Manuscripts (MS 33 DBP)

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Medicine is an important aspect of human life. Prior to the modern day, each society developed their own traditional medicines to treat and cure illnesses, as well as maintain good health. Most of the ingredients used in these traditional medicines were derived from herbs growing in their natural surroundings. Through observation and life experiences, herbalists were able to use these herbs as natural remedies. The knowledge they possessed was then passed down to the next generation through both verbal instructions and written documents, which are known as manuscripts. Besides the names of herbs and their usage, another important aspect recorded in these manuscripts was the units of measurement and weight. Today, most medicine manufacturers use the international unit system (SI) when processing their products. In the old days, however, herbalists did not have a standard system of measurement and weight, but they understood the importance of using correct measurements and weights to ensure that the remedies benefit the users. Therefore, the objective of this study is to highlight the methods of measurement and weight used in preparing traditional Malay medicines, as written in manuscripts labeled MS 33 DBP. Content analysis methodology is used to extract the related information from the manuscripts. This study discovered interesting information on how local herbalists developed their own unit of measurement and weight, based on common objects found in their daily lives, such as parts of body, coins and household items. This study highlights an awareness among Malay herbalists on the importance of good practice and prescriptions in preparing herbs to avoid excessive use, which could be harmful rather than beneficial.

Keywords: manuscript, Malay, traditional, medicine, herbs, herbalist, health

Aloe vera from Islamic Perspective, Scientific Study and Malay Traditional Medicine Manuscripts: An Analysis of Its Real Potential and Benefits

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Aloe vera or known as *Lidah buaya* in Malay (scientific name; *Aloe vera Barbadensis*) is a valuable treasure of nature as a treatment agent. Besides having modern medical system treatment, the majority of Malaysian citizens consume traditional or Malay medicine and are referred to traditional healers for treatment, thus, it is significant to know the real potential of Malay or traditional medicine. However, many people are not aware of the real potential of *aloe vera* since there is some misleading and unreliable information about it. Thus, this review aimed to provide advantages, benefits and real potential that can be obtained from *aloe vera* based on Islamic perspective and scientific studies. In this article, Hadith is used as a basis to show the significance of *aloe vera* from an Islamic perspective and scientific details is used to factually list the proven benefits of *aloe vera*. Scientific findings show that *aloe vera* has numerous advantages, benefits and is mentioned several times in Hadith. Besides, in order to promote and protect natural heritage and its knowledge, Malay medicine tradition and manuscripts data from secondary sources is gathered based on *aloe vera* in 'The medical book of Malayan medicine' the *kitab tib*.

Keywords: *Aloe vera*, Islamic perspective, authentic hadith, Malay ○ medicine, real potential, scientific findings

Dental Diseases and Treatments in Tayyib al-Ihsan fi Tibb al-Insan

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Shaykh Ahmad al-Fatani, a Malay scholar, residing in Makkah wrote a medical manuscript named Tayyib al-Ihsan fi Tibb al-Insan. This manuscript was written more than one hundred years ago in the year 1894 and published a year later in the year 1895 in the holy city of Makkah. A Romanized version of the text published in the year 2015 was used in this study. The manuscript discussed the philosophy of diseases and health, maintaining health and treatment of diseases. There are 14 chapters discussing the source of sickness in the human body and identifying the symptoms from the traditional perspective, as well as dividing the diseases based on the anatomy and location of the pain. Dental related diseases and the treatments were identified from the classic text in chapter nine, together with diseases in the facial area. The diseases identified included treatment of pain of molar teeth, bleeding and swelling of gingiva and the periodontal tissues, tooth whitening procedure, dental calculus, tooth extraction procedure without using metallic instruments, swollen tongue and halitosis. Several methods were listed for each dental-related disease from this text. However, some descriptions of the dental-related diseases in the manuscript might be different from what we understand in modern dentistry. Most treatment modality for dental-related diseases are from floral and herbal sources. Further in-depth analysis from the text is needed to fully comprehend the treatment of dental-related diseases from a traditional Malay medical manuscript.

Key words: Tayyib al-Ihsan fi Tibb al-Insan manuscript, dental-related diseases, dentistry treatment

Solanum torvum for Hypertension in 'Kitab al-tibb': A Systematic Review on the Scientific Evidence

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Solanum torvum or 'terung pipit' is a perennial herb that was mentioned in 'Kitab al-Tibb' or 'Kitab Tibb Pontianak' for treatment of hypertension. The aim of this study is to conduct systematic review utilizing Science Direct, PubMed and Scopus databases asserting the claim. Search was carried out without date and language restrictions, and based on combinations of the following keywords; "*Solanum torvum*", "*S. torvum*", "antihypertensive", "anti-hypertensive", "diuretic", "vasodilation", "ACE inhibitor", "angiotensin converting enzyme inhibitor", and "blood pressure". After systematic search and filtration of the inclusion and exclusion criteria, 17 research articles were included in this review. It was found that the frequently used part of *S. torvum* in these studies was its fruits. The plausible evidences found include; i) reduction in blood pressure of normotensive and hypertensive rats (induced by high fructose diet), ii) diuretic activity by increasing total urine output and increased sodium excretion in normotensive rats, and iii) significant inhibition on angiotensin-converting enzyme that is responsible for production of Angiotensin II, a potent vasoconstrictor. The isolated active compound found was (E)-2,3-dihydroxycyclopentyl-3- (3',4'-dihydroxyphenyl) acrylate. In contrast, one article showed contradictory findings whereby *S. torvum* was reported to induce partial vasoconstriction, and to amplify hypertensive effect in L-N^o-Nitro arginine methyl ester (L-NAME)-induced hypertensive rats, an animal model which was deprived from the relaxing factor, nitric oxide. Despite this, the same study reported an increase in total urine output and sodium excretion in L-NAME-induced hypertensive rats. These discrepancies actually suggest that *S. torvum* actually works distinctively in different animal models of induced hypertension; thus, there is a need to conduct further study on Spontaneously Hypertensive Rats model to actually mimic the essential hypertension that frequently occurs in humans. Altogether, this review found scientific evidence from modern science supporting the use of *S. torvum* as mentioned in 'Kitab al-Tibb' for hypertension.

The Effectiveness and Application of *Urtica dioica* (Stinging Nettle) for Musculoskeletal Disorders (MSDs): A Systematic Review and Meta-analysis

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Musculoskeletal disorders (MSDs) are injuries of muscles, bones, tendons, joints, and spinal discs. The use of non-steroidal anti-inflammatory drugs (NSAIDs) and other drugs have become a common treatment to manage chronic pain and inflammation in MSDs patients. These conventional medications however reported with undesired side effects from prolonged use of them. Therefore, the herbal medicines, such as *Urtica dioica* (stinging nettle), has become a popular alternative treatment for MSDs and believed by many to be safe for use and effective. This systematic review and meta-analysis were conducted to systematically address the effectiveness and application of stinging nettle as inclusively transliterated in Malay Medical Manuscript (MMM) as 'jelatang' in the MSDs treatment. The online searches were conducted via Google Scholar, PubMed, IIUM Online Library, CINAHL, and OVID from the year range of 1987 to 2020. All the studies included are randomized controlled trials, open clinical, and prospective case study. The finding has shown that the stinging nettle is effective given a small prediction interval in the random effect of meta-analysis despite a considerable heterogeneity. The studies included were shown to be normally distributed from $p = 0.57$ ($p\text{-value} > 0.05$). Oral ingestion and polyherbal formulation were identified as the most common method of stinging nettle applications. The stinging nettle application is, therefore, further recommended in the forms of capsule or blend for the MSDs. Further evidence is warranted for larger studies and higher reliability. There was a synergistic effect from polyherbal formulation and limited evidence in especially the single formulation intervention, henceforth, suggested for more studies of only stinging nettle application. This finding indicated that the stinging nettle has the potential to be considered as an alternative therapy to prolonged side effects of NSAIDs and analgesics attributed for MSDs and further justifies ○ its medical benefit in joint pain in the MMM.

Analysis and Medicinal Content of Tumour Treatment in MSS 4016

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Malay people in the past have recorded their knowledge about medicinal uses of local natural resources to treat several diseases including tumour which was mentioned as “ketumbuhan” in manuscripts. The objectives of this study are to extract and analyse the medicinal content related to the tumour from manuscript MSS 4016. The readability of the manuscript was considered average as a lot of words could not be read due to the faded ink. The text in the manuscript was transliterated except for obscured writings and words. Since this study focused on tumour disease, the analysis and comparative studies were done in relation to the disease only. Analysis of the medicinal properties of the plants as stated in the manuscript was done by articles search through Google Scholar search engine using specific keywords: [scientific name of the herbs] in [tumour] treatment OR [medicinal properties] in [scientific name of the herbs mentioned in the manuscript]. In MSS 4016, the treatment for tumour or “ubat ketumbuhan” has the longest discussion compared to any other treatments, which expanded until about two pages. Thirty-four different herbs from 11 formulations in MSS 4016 correspond to the tumour treatment. There are also 34 herbs for non-tumour treatment but with anticancer properties and additional 4 herbs with antitumour properties only. Overall, 72 herbs (29.6%) of 243 herbs described in MSS 4016 are suggested to have antitumour or anticancer properties. However, 15 herbs mentioned for the tumour treatment could not be identified. *Curcuma longa* or turmeric is the most frequently stated herb in MSS 4016; 32 times with anticancer properties. The plants used for the tumour treatment are found to have several medicinal properties which act directly with tumour or indirectly help the treatment of tumour by managing the sign and symptoms of the disease. Thus, the valuable medicinal content found in this study may serve important information for natural-product-based researches to treat tumour in the future.

Traditional Medicine for Cancer Treatments: A Comparative Study Between Scientific Reports and the Malay Medical Manuscripts

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As challenges in treating cancer continue, cancer research in Malaysia has been directed towards alternative treatments based on natural, locally available products that have been known to be used traditionally by the Malays. To assess the value of these treatments, a comparative study was conducted to identify the similarities and differences of the Malay traditional medicine for cancer treatments and available scientific reports. A systematic literature search was conducted to retrieve relevant scientific articles from three different electronic databases using key terms such as 'cancer', 'traditional Malay medicine', 'antitumour', 'ethno medicine' and the name of the Malay materia medica. The matched articles were assessed, and a final 68 relevant studies were included. The attributes included for the comparison were name of plant used, part of the plants, type of cancers and the methods of preparation for the cures. These attributes were compared to cancer cure recipes obtained from 7 transliterated copies of Malay medical manuscripts. It was found that not one of the articles has mentioned their basis of choosing the plants being studied or provided references to the traditional sources. This study found that 6 of the names of plants found in the articles were similar with that being mentioned in the manuscript, such as garlic, ginger, galangal, *temu kunci*, *laka-laka*, *rambai* and *api-api*. Nevertheless, the preparation described was different and limited to mostly single compound. The rhizomes of galangal and temu kunci as well as leaves of rambai were the only similar parts of plant used in both articles and manuscripts. In conclusion, the relevant information on this comparative study would be useful in future scientific study and could be directed towards functional treatment of cancer in the future.

Zingiber officinale Rhizome Extract as a Potential Anti-Snake Venom: A Scoping Review

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Snakebite injuries are potentially life-threatening and the current treatment for any snake envenomation is the administration of commercial anti-snake venom (ASV). However, ASV has limited availability and has raised a few issues of side effects. Therefore, it is crucial to find an alternative antivenom for snakebite management and one of the solutions is by producing a plant-based formulation ASV. Traditional medicine practitioners have documented few alternatives on animal venom treatment in the Kitab Tib MSS 1292 PNM transliterated by Harun Mat Piah and Nik Musa'adah Mustapha and *Zingiber officinale* is one of them. Thus, this review is aimed to describe *Z. officinale* as a potential ASV and compile scientific evidence of its activities. Key words used were [*Z. officinale*] AND [anti-snake venom] OR [phytochemical screening]. The search engines used in this review were PubMed, Science Direct, Scopus, and ProQuest. The scoping review was adopted from the Preferred Reporting Items for Systematic review and Meta-Analysis (PRISMA). After the exclusion criteria was applied, a total of 45 journals were found, and from these journals, further 37 journals had to be excluded with reasons. In this study, ASV activity was reported based on the parts of the plant used, type of extract, origin of *Z. officinale* used, type of clinical study, dose of *Z. officinale* extracts used, type of venom, and result of the antivenom test. Based on the literature, *Z. officinale* were reported to have high contents of phenols, flavonoids, terpenoids and tannins. The rhizome of *Z. officinale* was the preferred part amongst researchers who studied anti-snake venom activity. It was found that the lowest dose of *Z. officinale* extract used in the studies was 1.25 µg/ml using methanolic extraction. In conclusion, scientific evidence that supports *Z. officinale* as a potential alternative treatment for snakebite management is available and justifies its anti-snake venom properties in which future research is recommended.

Jujube in Malay Medical Manuscript: An Analysis from Scientific and Islamic Perspectives

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Jujube or known as '*Bidara*' in Malay customs is a beneficial plant to the human. Nowadays, it is being domestically produced into varieties of products to fulfil human needs. However, as time passed, jujube is only seen as a source for business products while ignoring its real benefits. Thus, this paper aimed to illustrate its benefits as stated in the transliterated books of Malay medical manuscripts, with strong support from scientific and Islamic perspectives. As a common ingredient for remedies, jujube has been documented in the old manuscripts such as Kitab Tib MSS 2151, Kitab Tib Muzium Terengganu, The Medical Book of Malayan Medicine and Al-Rahmah Fi al-Tibb Wa Al-Hikmah. Past journals and articles were analysed to describe the benefits of jujube from scientific and Islamic point of views which are derived from Quran and Hadith. In the selected Malay medical manuscripts, jujube was prescribed for dysentery, lost appetite, sore throat, smallpox, and scorpion sting. Scientific findings widen the discoveries of its medicinal advantages with the presence of its properties as anti-diarrhoeal, antimicrobial, anti-inflammatory, antidiabetic, antioxidant, anticancer and anti-allergic. Islamic views which are derived from Quran, Hadith, and scholars' books mainly circulate its benefits as a cleansing agent, black magic defence mechanism, and as medicines for certain illnesses. To conclude, this paper gave a comparison on the use of jujube from the ancient Malay medical manuscript, with the Islamic perspective and the contemporary studies.

Key words: Jujube, *Bidara*, Malay medical manuscript, remedies, scientific, Islamic perspectives.

Biomedical Appraisal of Typhoid Fever in Malay Medical Manuscript MSS 4016

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Typhoid fever is a bacterial infection caused by *Salmonella typhi*. People in the past have recorded their knowledge about the medicinal uses of local natural resources to treat various diseases including typhoid fever in manuscripts. It is very important to preserve this knowledge before these manuscripts degrade and become unreadable. The objectives of this study are to extract and analyse the medicinal content pertaining to typhoid fever disease from manuscript MSS 4016. The readability of the manuscript was considered good as the author used the red ink for the first word especially for discourse marker such as “Bab ini” and “Sebagai lagi” in every chapter to introduce the disease. The manuscript was transliterated except for some obscured writings and words that cannot be understood. The diseases and formulations were extracted and numbered, and the ingredients were listed respective to each number. The analysis and comparative studies were done to identify the medicinal values of the plants mentioned in the manuscript, intended for typhoid fever, against contemporary studies. This was done by searching in Google Scholar journal database using specific keywords which were “scientific name of plant”, “pharmacology”, and “typhoid fever” in any time frame. Based on the manuscript, 57 types of plants have been indicated to treat typhoid fever. The formulations intended for typhoid fever was the highest i.e 16 formulations out of 228 formulations mentioned in the manuscript, equivalent to 7.02%. From 57 plants, 49 of the plants were found to have various pharmacological activities that directly and indirectly help the treatment of typhoid fever disease. These include black cumin or also known as “jintan hitam” that has been shown to have anti-bacterial activity that may be used to treat typhoid fever. Thus, the priceless information gathered from this study may serve as a medicinal information warehouse for natural product-based researches to treat typhoid fever in the future.

Finding Cures for the Emerging Yaws

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Introduction: Yaws, a reemerging skin disease caused by *Treponema pallidum* subspecies *pertenue* bacteria, is known to infect underprivileged population living in tropical and subtropical regions. In 2018, the first evidence of antimicrobial resistance in yaws bacteria demonstrated a threat for the infection. As with other antimicrobial resistant drugs, a new drug is needed to prevent and treat the disease. In Old Malay culture, yaws is referred to as *puru*. **Objective:** This study aims to extract and analyse the information on *puru*, its symptoms and treatment from Malay medical manuscripts. **Methodology:** Key words used to identify yaws and *puru* content in six Malay manuscripts were: *puru*, *sakit kulit* (skin problem) and *gatal* (itchiness). Literature search using Pubmed, ScienceDirect and Google Scholar was made to validate the medicinal effects of the remedies using the following key words: yaws, *Treponema* spp., antibacterial and wound healing, with various remedies found in the manuscripts. **Results:** This study confirmed that information on yaws treatment was available in the manuscripts and was organised according to: (i) materials used in the remedy formulations; (ii) methods of preparation for the remedies; and (iii) routes of administration. In total, 132 materials, various preparation methods and five routes of administration of remedies for yaws were described in the six Malay medical manuscripts. The most common materials used were *Cocos nucifera* L., *Oryza sativa* L. and copper sulphate. Comparison with the scientific and contemporary studies did not find the link between remedies with yaws or *Treponema* spp. However, a further search on remedy substances found that the materials exert medicinal effects of either antibacterial, wound healing or anti-inflammatory effects. **Conclusion:** Malay medical manuscripts contain comprehensive information on yaws treatment. Although direct scientific evidence is lacking in associating the remedies with yaws, several remedy substances do possess other healing properties which could suggest their therapeutic effects for the treponemal skin problem. Nevertheless, the medical knowledge from the Malay manuscripts could be an alternative in finding the cure for yaws as well as other re-emerging diseases.

Antimalarial Assessment on the Formulation from Tayyib Al-Ihsan Fi Tibb Al-insan By Shaikh Ahmad Al-Fatani

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The occurrence of antimalarial drug has urges scientists to find new candidates of antimalarial drugs. Artemisinin derivatives are examples of Chinese traditional medicine which are still relevant in the modern world. In Malay medical manuscripts, Malay medical practitioners had also described some formulations to treat a disease which symptoms mimic malaria fever. Hence, this study aims to assess the antimalarial activity of a formulation prescribed by Shaikh Ahmad al-Fatani in his manuscript named *Tayyib al-Ihsan Fi Tibb al-Insan*. Antimalarial activity was evaluated by calculating the percentage of parasitised red blood cells and survival rate of *Plasmodium berghei*-infected mice. In the manuscript, the formulation was to mix 7 pieces of citrus fruits with sugar to taste. Using this formula, the remedy was prepared and given orally to the *Plasmodium berghei*-infected mice. In this study, 32 mice were divided into eight groups: group 1: positive control, 0.1 ml of 20 mg/kg Chloroquine; groups 2 – 4: experimental groups using complete formulation (5 ml/kg, 10 ml/kg, 30 ml/kg of *C. aurantifolia* juice respectively), groups 5 – 7: experimental groups using lime juice only without sugar (5 ml/kg, 10 ml/kg, 30 ml/kg of *C. aurantifolia* juice only, respectively) and group 8: negative control (0.1 ml of distilled water). The formulation without the sugar was designed to investigate the effect of fine sugar to antimalarial activity. This study found that the mean of parasitemia level for 30 ml/kg of *C. aurantifolia* juice with fine sugar group was 3.38 ± 1.74 and the survival rate was 100%, as compared to the treatment group using 5 ml/kg of *C. aurantifolia* juice with fine sugar (mean of parasitemia level, 14.28 ± 5.70 and survival rate, 100%). This study found that 30 ml/kg of *C. aurantifolia* juice with fine sugar has the potential to be developed as an alternative treatment. The small amount of fine sugar in the formulations might be prescribed to enhance the sweetness of the juice, without suppressive or synergistic effect. In conclusion, *C. aurantifolia* juice with fine sugar has the potential to be used as a supplementary antimalarial treatment as suggested by Shaikh Ahmad al-Fatani.

In vivo Antiplasmodial Assessment of *Syzygium aromaticum* Based on the Formulation from the Malay Medical Manuscripts

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The number of malaria cases remain high in Malaysian public health, particularly in Sabah, Sarawak and in the central interior regions of Peninsular Malaysia. It shows the need to put more efforts to discover new, affordable and local drugs for malarial infection. In fact, an ancient prescription from a Malay medical manuscript entitled “*Rumah Ubat di Pulau Penyengat*” suggested the use of *Syzygium aromaticum* to treat malaria-like disease. Thus, this study was conducted to evaluate antimalarial activity of *S. aromaticum* in *Plasmodium berghei*-infected mice. The mice were orally treated with various concentrations of *S. aromaticum* based on the described formula, a handful amount of *S. aromaticum* per person per treatment. In this study, 20 mice were divided into 5 groups. The positive control group (G1) was given 20 mg/kg dosage of chloroquine, starting from the 4th-day of post-inoculation until day 12. By force feeding, three treated groups were administered twice daily with 0.1 ml (G2), 0.2 ml (G3) and 0.4 ml (G4) of the formulations respectively. The control group (G5) received distilled water orally every day until the end of the study. Antimalarial activity was evaluated by calculating the percentage of parasitised red blood cells. Chloroquine has proven to be an effective commercial drug against parasites with the least parasitemia rate recorded even on day 11. On day 12 post-inoculation, the effective dose was recorded for G3 (0.2 ml), followed by G2 (0.1 ml), which reduced parasitemia by $2.68 \pm 1.82\%$ and $3.91 \pm 2.32\%$ respectively. From the result, it can be concluded that *S. aromaticum* formulation suggested in “*Rumah Ubat di Pulau Penyengat*” exhibited curative properties in the antiplasmodial assessment in mice but more study need to be conducted in order to establish its activity in humans.

Antibacterial Activity of *Allium cepa*-based Formulations as Documented in the Malay Medical Manuscripts

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In Malaysia, Malay medical manuscripts are noteworthy sources of traditional medicine where various remedies for a diverse kind of illnesses, including skin-related diseases, were documented. Remedies from ancient Malay medicine are believed to have fewer side effects and less expensive than other conventional treatments. In several Malay manuscripts, *Allium cepa* or *bawang merah* was frequently prescribed to treat various skin conditions. However, the efficacy and potency of *Allium cepa* based on the formulations in Malay medical manuscripts was unknown. Hence, this study aims to identify the effectiveness of *Allium cepa*-based formulation by assessing their antibacterial activity against selected skin bacteria. All formulations related to skin diseases were compiled from seven different transliterated Malay medical manuscripts and were categorized according to the causative agents of each skin problem. The formulation selected was from the manuscript of *Kitab Perubatan Melayu: Al-Rahmah Fi Al-Tibb Wa Al-Hikmah* reported by Shaykh' Abbas Kuta Karang, a Muslim scholar from Aceh, Indonesia, whereby the *A. cepa* was treated for either 1- or 3-day fermentation. For our laboratory study, antibacterial activity of the formulations were tested against the two most common skin pathogens, *Staphylococcus aureus* and *Staphylococcus epidermidis*. The study found that fermented *A. cepa* extract not only inhibited but also killed *S. epidermidis*. *A. cepa* fermented for 3 days displayed better bacteriostatic and bactericidal activities than the 1-day fermented extract. However, no bacteriostatic effect was seen for *S. aureus*. In conclusion, this study provides laboratory evidence that support *in vitro* antibacterial activity of fermented *Allium cepa* as documented in the Malay medical manuscript. Key words: Malay medical manuscripts, formulation, *Allium cepa*, skin infections, antibacterial activity.

Black Seeds (*Nigella sativa*) from Islamic and Science Perspectives

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Black seed or black cumin comes from *Nigella sativa* (Family Ranunculaceae), a plant that grows in Eastern Europe, Western Asia, and the Middle East. It has been widely used as herbal medicine for over 2000 century. The advantages of *Nigella sativa* as traditional medical are not only recorded in the old manuscripts but also mentioned by the Prophet Muhammad (pbuh). Therefore, this paper aims to review medicinal effects of black seeds as described in the Malay medical manuscripts (MMM), Islamic perspective as well as the scientific researches. According to MMM, black seeds have been used in various diseases including postpartum depression, asthma, gastroenteritis and headache. MMM also described detailed prescriptions on the ingredients that should be mixed with black seeds, the amount of black seed and the appropriate time to consume black seeds. Several MMM that described the medicinal use of black seeds include *Kitab tib Pontianak* and *Kitab Tib MSS 759*. Based on scientific articles search, thymoquinone was found to be the bioactive component of the seeds. In fact, several studies demonstrated that the black seeds are effective against various illnesses including the diseases mentioned in MMM. Similarly, from the Islamic perspective, black seeds are also prescribed for asthma and gasping. In conclusion, the study provided scientific evidence that supports the use of black seeds as healing remedy. Specific evidence that is linked to the MMM will be highlighted. Another major finding of the study is the evidence that the Old Malay community had been using non-local materials in treating various diseases, and this could be an integration between the Islamic and the Malay medicine.

Keyword: Black seeds, *Nigella sativa*, Malay traditional medicine, scientific research, Islamic perspective.

Leaf Anatomy of the Medicinal Plant *Citrus aurantifolia* (Christm.) Swingle | Zainab Sholehah Abdul Rashid

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Many Malay Medical Manuscripts (MMM) contain information of local materials that are commonly used as medicine by the Malay community. Families of medicinal plants mentioned in the MMM include Rutaceae, Asteraceae and Acanthaceae. One of the Rutaceae family members, *Citrus aurantifolia*, known as key lime (*limau nipis*) had been mentioned in at least four MMM namely MSS 2515, MSS 3140, MS 174 and MSS 2999. MSS 2515 described the use of *C. aurantifolia* juice to remove sputum. In MSS 3140, the leaves of *C. aurantifolia* are said to be beneficial in treating headache and the juice of the fruit is consumed to treat wounds which are caused by insect biting as well as neutralise venomous stung by snakes, scorpions and centipedes. In MS 174, *C. aurantifolia* juice is also a remedy for sinusitis, when taken together with the roots of *Jasminum sambac*, *Zingiber officinale* and *Allium cepa*. In MSS 2999, the whole fruit is used for dyspepsia and its juice can heal allergic conjunctivitis, parturition and hematometra. In addition, the seed of *C. aurantifolia* is said to be useful to remove insects in the ear. Due to numerous benefits of different parts of *C. aurantifolia* plant and the similarities it has with various citrus plants, it is crucial to identify the plant correctly in order to make use of its medicinal parts. Therefore, this study was conducted to determine anatomical and micromorphological characteristics of the leaves of *C. aurantifolia*. Methods in this study involved cross section of petiole and midrib using sliding microtome, leaf peeling observation under light microscope and scanning electron microscope. The findings of these studies have demonstrated the characteristic of leaf anatomy and micromorphology for *C. aurantifolia* that could be used in its identification and classification, such as based on the type of its vascular bundle, stomata, wax and trichome. In conclusion, results of this study have shown that the anatomical and micromorphological data can be useful in the classification and identification of plant species, and this would be useful for further research on *C. aurantifolia*.

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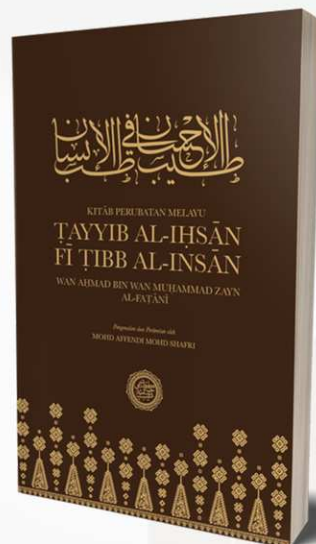
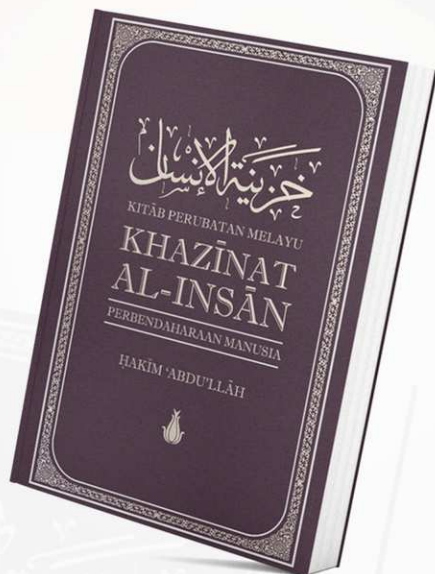
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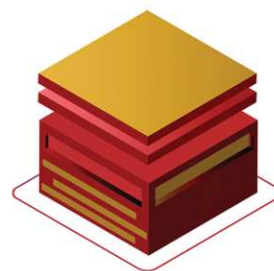
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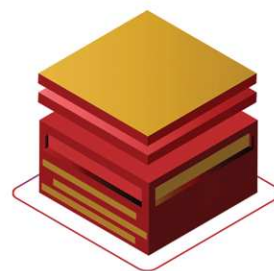


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