

**THE QUEST FOR THE LEGENDARY HOUSE
OF ALFRED RUSSEL WALLACE
IN TERNATE**



Nicholas Hughes and Rinto Taib

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**City of Ternate
and
The Alfred Russel Wallace Memorial Fund**

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of Alfred Russel Wallace in Ternate*

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City of Ternate and
The Alfred Russel Wallace Memorial Fund

Front cover:

Photoshop mock-up depicting Wallace in front of a house similar to that in which he may have lived (except for the corrugated roof). Wallace rented his house from a Chinese landlord, hence the Chinese gentlemen in front of the house together with Wallace. (Credit: Paul Whincup)

Back cover:

Logo of Ternate City. Ternate was declared a city on 27 April 1999.

Logo of The Alfred Russel Wallace Memorial Fund

Oil painting by Victor Evstafieff, 1958, of Wallace in the Aru Islands, with two King Bird-of-Paradise specimens

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Welcome by Dr. M. Tauhid Soleman, Mayor of Ternate



Assalamu'alaikum Warahmatullahi Wabarakatuh

May peace and Allah's mercy and blessings be upon you

Thank God Almighty for all the abundance of His grace and bounty, so that at this time we are still given opportunities and health.

The city of Ternate is very rich in culture including oral and written history. To research, explore, unearth, understand, and preserve this history and culture requires collaboration and synergy across multiple parties - including government, society, academics, the private sector as well as individuals. In this book, the authors describe their collaboration with many partners to produce a tangible and original piece of research on an interesting and globally-renowned subject – the famous naturalist and explorer, Alfred Russel Wallace.

This book is an important work that greatly strengthens the narrative about the role of Ternate City in, not only the past, but also the present and future. Historical data and documentation of knowledge such as Alfred Russel Wallace's "*The Letter From Ternate*", which he wrote to Charles Darwin in England in 1858, reminds us that Ternate was an epicenter of modern knowledge relating to natural history, biology, and ethnography, among others, in the past. The book alerts us now to the important role of our country as a center of biodiversity and its potential for scientific research and development in the present and future. This includes R&D relating to food bioeconomy, conservation and climate change, community-based ecotourism, bioprospecting for drug and energy discovery, and so on. Indeed, the book also reminds us of the importance of cultural heritage protection and preservation, a key part of our efforts as stated in the Ternate Government's "14 Points of Priority towards an Independent and Just Ternate".

Finally, as the Mayor of Ternate, I highly appreciate that the two authors of this book have collaborated closely, together with other partners, to bring this book to the reader. The presence of this book will expand our knowledge and our scientific fields as well as being a valuable reference in regional development planning, especially in the field of tourism and culture.

Thank you.

Wassalamu'alaikum Warahmatullahi Wabarakatuh

Dr. M. Tauhid Soleman, M.Si

Mayor of Ternate

27 April 2022

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Foreword by Dr George Beccaloni, Chair of the Wallace Memorial Fund and Director of the Wallace Correspondence Project

The theory of evolution by natural selection has been described as "... arguably the most momentous idea ever to occur to a human mind..." (Richard Dawkins, evolutionary biologist, 2007*), but it was in fact discovered by two minds, not just one. Although many people know something about the theory, relatively few realise that it was published *jointly* by Charles Darwin and Alfred Russel Wallace in August 1858. Fewer still realise that Wallace was living on Ternate Island when he dispatched his essay detailing his revolutionary idea, along with a covering letter, to Darwin in England. This set off a chain of events that led, first, to the hasty joint publication of both independently originated but identical theories and, second, it spurred Darwin to write his landmark book, *Origin of Species*, that was published fifteen months later.

The site of the house where Wallace was living when he mailed his famous *Letter from Ternate*, as it is often called, has become a 'must-see' for people visiting Ternate who are interested in the history of science. (The original house, made largely of wood and palm leaves, would have rotted away long ago in the tropical climate). Two sites for the house in different areas of Ternate city had been proposed. But as you will discover in this book, both were incorrect, and only very recently has the actual site been identified beyond all reasonable doubt.

I first became interested in Wallace when doing my PhD in the 1990s. One aspect of my work concerned the evolution and function of butterfly wing patterns, and I soon discovered that Wallace had made more contributions to our understanding of animal colouration than anyone else. I was surprised by how little information there was about him, especially since he was Darwin's equal in so many ways. Desiring to correct what I regarded as an historical injustice, I decided to study his life and work in detail and educate people about his many important contributions to science.

The first thing I did was set up the Wallace Memorial Fund in 1999 to restore his neglected grave in Dorset, UK. The Fund continues its work to this day and has paid for several memorials to Wallace around the UK including a larger than life-size bronze statue of him, which is on display in the Natural History Museum, London. In 2002, I played a key role in helping the museum acquire the world's largest and important collection



Statue of Alfred Russel Wallace, by Anthony Smith, Natural History Museum, London. The statue was commissioned by the Wallace Memorial Fund and unveiled by Sir David Attenborough on the 100th anniversary of Wallace's death, 7 November, 2013.

of Wallace's manuscripts, books, and other items from his grandsons, who I had come to know during the restoration of his grave. I wanted to make transcripts of these available online and then decided to greatly expand its scope to include all of his letters.

This led to the Wallace Correspondence Project, which aims to locate, digitise, transcribe, interpret, and publish the many surviving letters to and from Wallace stored in archives around the world. I am its Director and Sir David Attenborough and Bill Bailey, both admirers of Wallace, are the Project's patrons. The Project's online archive of letters (<https://tinyurl.com/WallaceInEpsilon>) is proving to be a goldmine of information for scholars and biographers, and I hope it will help to make him better known, in the same way that the Darwin Correspondence Project has for his better known colleague.

Over the years I have given numerous talks about Wallace and have published a number of articles about his work, plus a co-edited book *Nat-*

ural Selection and Beyond: The Intellectual Legacy of Alfred Russel Wallace (Oxford University Press, 2008). I have also been a consultant for the multi award-winning two-part BBC series, *Bill Bailey's Jungle Hero*.

In the course of my work on Wallace, I have visited most of the important Wallace-related sites in the UK and many of those in the Malay Archipelago, where he spent nearly eight years collecting. It was only in 2012, when helping the BBC make *Jungle Hero*, that I finally had the opportunity to visit Ternate Island and, of course, I had to visit the place where many believed his house had once been - a site known as the San-tiong House. However, I quickly realised that its location did not agree with the important statement that Wallace made in his book, *The Malay Archipelago*, "Just below my house is the fort...". In fact, there was no fort directly below the site, the nearest one, Fort Oranje, being some distance away, down the road and some way around the corner. An account of how my observations helped lead to the identification of the actual site of the house is recounted in this book. Nicholas Hughes and Rinto Taib have done a fine job in researching and documenting the complex story of how the site was finally identified.

As I write, the plot where Wallace's house once stood is for sale. If the land could be purchased, then a replica of his house could be built and used as a museum about his work and travels in the region. It could also showcase the amazing biodiversity he did so much to document and also tell the story of his local assistants, especially the "faithful" Ali, without whom his collecting expeditions would not have been so successful. Such a museum would be an important attraction for tourists and locals alike. They would be able to stand on the very spot where Wallace wrote his famous letter to Darwin; a letter which probably had a greater impact on science than any other letter in history.

Dr George Beccaloni, Fellow of the Linnean Society
June 2022

* Dawkins, Richard. 2007. *Review: The Edge of Evolution*. New York Times, 29 June.

Preface

This book documents the study led by Paul Whincup in 2019 in the discovery of the site of Wallace's house in Ternate. His discovery of an old deep well was the key to pinpointing the exact site of this house.

The Indonesian Academy of Sciences has raised awareness in Indonesia and internationally of the role of Alfred Russel Wallace in the theory of evolution, as the father of modern biogeography, and documentation of biological diversity in Indonesia. Marzuki & Andili conclude, "*Wallace's house in Ternate is the most important science history site in Indonesia*" because this is where he was living when he dispatched his famous *Letter from Ternate*, with his *Ternate Essay* on his Theory of Evolution by Natural Selection, to Charles Darwin in March 1858.

Wallace provides tantalizing clues to the location of his house in his travelogue, *The Malay Archipelago*. Historians, biologists and Wallace enthusiasts as well as local government and residents of Ternate have for many years sought to locate the site of Wallace's house. Their efforts have generated much debate based on oral history, local interests, and hypotheses based on interpretations of clues that Wallace provides.

Two of Wallace's clues are critical in locating the site of his house – that it had a *deep well* with *pure, cold water*, and that Fort Oranje was *just below* his house.

Until recently, two sites had been proposed: the Sultan's House and the Santiong House. The first can be disregarded as it does not have a deep well and is not located in the generally-agreed area in which Wallace lived. The Santiong House had become the accepted location because it has a deep well and was supported by oral history.

The study builds on earlier attempts to locate the Wallace house, namely, Niizuma in 1980, and Marzuki and Andili in 2008. Later, Beccaloni in 2012 questioned the location of the Santiong House, that it did not correspond with Wallace's clue that Fort Oranje was *just below* the house. He proposed another general location closer to and facing the fort. But his conjecture was not supported by evidence of an old, deep well.

Whincup, hydrogeologist with many years of professional experience in Indonesia, took the initiative to revisit the search for the site of the Wallace house in 2019. First, he and colleagues undertook an exhaustive review of historical documents and maps to identify conclusively the general area in which Wallace had lived (see *Ternate in the Time of Wallace*). This review confirmed the earlier proposals that Wallace had lived in the Santiong district (see *Earlier Efforts to Locate Wallace's House*). Second, Whincup arranged for a thorough search (census) of all old, deep wells within the Santiong district. This search resulted in the discovery of a hitherto unidentified well at a site that Whincup named the Oranje Site. Finally, Whincup examined each of the wells that had been identified to determine how their location, mode of construction and quality of water corresponded with the clues that Wallace provides (see *Clinching Evidence—Discovery of the Oranje Site Well*).

Whincup concluded that the Oranje site well provided convincing evidence for the location of the Wallace House. We believe that the site of the Wallace house has now been identified conclusively—beyond all reasonable doubt.

This book also provides a brief history of Ternate from early times when Chinese, Arabs and Indians dominated the international trade in spices until the arrival of Europeans—Portuguese, Spanish, English and Dutch in the 16th century. Appendix 1 documents all of the forts on Ternate. Appendix 2 provides a comparison between the three designated sites of the Wallace house (Sultan, Santiong and Oranje), and Appendix 3 provides a summary of the key elements of the Theory of Evolution by Natural Selection as Wallace wrote in his *Ternate Essay*.

We trust you will find this book useful in your travels around the historic island of Ternate and that you will enjoy learning about Alfred Russel Wallace, the famous naturalist, and visiting the site (on the southern corner of Jalan Pipit and Jalan Merdeka) where he is now believed to have lived in Ternate.

Nicholas Hughes and Rinto Talib

June 2022

Acknowledgements

Many people were associated with the study. We are very grateful to all of them for their many and varied contributions.

First and foremost, we acknowledge Paul Whincup, who led the study, and thank him for his advice and guidance in the preparation of this account of the search for the Wallace house.

We acknowledge Dr George Beccaloni who collaborated with Paul Whincup on this project. We thank George especially for editing the text to ensure that information about Alfred Russel Wallace is historically accurate, and for permission to publish his photos.

Rinto Taib, Head of History and Cultural Heritage, Department of Culture, Ternate, and Curator of the Spice Museum in Fort Oranje, supported the project with his extensive knowledge and history of Ternate, and liaison with local authorities. Nicholas Hughes provided support for and documented the project. Nicholas and Rinto collaborated in the preparation of this book.

Fiffy Sahib and Muhdi Aziz undertook the census to identify all old wells and liaised with the Santiong community and local authorities. This study was only possible with their local knowledge and active support. We are extremely grateful to both of them.



Mayor Burhan Abdurrahman
with Paul Sochaczewski (2019)

Our special thanks are due to the former Mayor of Ternate City, Burhan Abdurrahman, for his support for this project and commitment to promoting the memory of Wallace. Sadly, Mayor Burhan passed away in July 2021 while this book was in preparation.

We acknowledge the earlier studies of Dr Akio Niizuma, and Professor Sangkot Marzuki and Mayor Syamsir Andili in their searches for the site of Wallace's house. This study builds on their earlier work.

Paul Sochaczewski contributed information about Ali, Wallace's faithful companion. Dr David Parry provided his expertise in locating and interpreting historical maps and images of Ternate.

Ms. Farida, Japanese interpreter and translator, translated sections of Niizuma's book (in Japanese) that enabled us to relate Niizuma's account of his search for the Wallace house in English (for the first time, as far as we know).

Ms. Naoko Misono researched the translation of Wallace's *The Malay Archipelago* by Kakichi Uchida (1931) and revision (1942) (see Endnote 38). Ms. Naoko also attempted to view the film of the interview with Dr Najib of 1990 in the archives of NHK, the Japanese public broadcaster but was unable to obtain access to it for copyright reasons.

All images are acknowledged where sources are known. Acknowledgements to Java Lava refer to photos taken by members of volcano climbing expeditions in Halmahera in 2016 and 2017 led by Nicholas Hughes.

Finally, we wish to express our appreciation to the current Mayor of Ternate, Dr. M. Tauhid Soleman, and to the Chair of the Wallace Memorial Fund and Director of the Wallace Correspondence Project, Dr George Beccaloni, for lending their support for the publication of this book by way of their Welcome Message and Preface.

BIO SKETCHES

Authors



Nicholas Hughes: Food and Agriculture Organization of the United Nations (retired). Nicholas has travelled extensively in Eastern Indonesia including climbing volcanoes throughout the region and Halmahera in particular. He is an ardent student of the history of the spice trade and of Wallace.

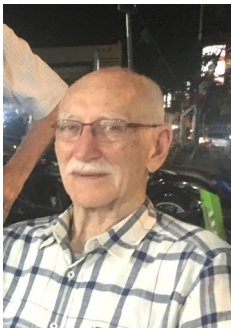
Nicholas Hughes below Gunung (mountain) Lewotolo, Lembata Island, East Nusa Tenggara



Rinto Taib: Rinto has written extensively on the history and sociology of Ternate. He is currently the curator of Museum Rempah Rempah (Spice Museum) within Fort Oranje. His historical knowledge of Ternate and understanding of its people contributed significantly to this project and to this book.

Rinto Taib on the Great Wall of China

Contributors



Paul Whincup: Hydrogeologist with many years of professional experience in Indonesia. Paul led the search for the site of Wallace's house. He conceived of conducting the census of old wells in the agreed area in which Wallace had lived, and of examining how their locations corresponded with Wallace's clues. His study resulted in the discovery of the Oranje Site well that provided convincing evidence for the site of Wallace's house.

Paul Whincup at an evening food stall in Ternate town



Dr George Beccaloni: Zoologist and science historian. George has studied Wallace's life and work for many years and is an internationally recognised authority on Wallace. George is currently the Director of the Wallace Correspondence Project and founder of the Wallace Memorial Fund.

George Beccaloni in the Banda Islands, with Gunung Api in the background



Paul Spencer Sochaczewski: Conservationist and writer. Paul's early experience in Sarawak, Malaysia, started his life-long interest in Southeast Asia. He has written extensively about Wallace including his book, *An Inordinate Fondness for Beetles*, which chronicles his 40-year quest following Wallace's travels. Amongst his many interests is the role of Ali, Wallace's 'faithful companion'.

Paul Spencer Sochaczewski below the summit of Gunung Gamalama, Ternate



Fiffy Sahib and Mudhi Aziz undertook the field work to identify all old wells in the Santiong area that led to the discovery of the Oranje Site well.

Fiffy Sahib and Mudhi Aziz, together with Nicholas Hughes and Paul Whincup, at the evening food stalls in Ternate town



Map 1: The Spice Islands of Eastern Indonesia
 Wikipedia Commons (annotations Nicholas Hughes)

The volcanic islands along the west coast of Halmahera were the principal source of cloves, and the Banda Islands of nutmeg.

Ternate: the Point-of-Origin of the Spice Trade

The Indian Ocean and Chinese trade in the highly-prized spices, cloves and nutmeg, existed from ancient times. Ternate, a small volcanic island off the west coast of Halmahera in the northern Moluccan Islands of Indonesia, was historically the 'point-of-origin' of that trade. The



Ternate island with Mount Gamalama at sunset (Becalonni©)

sultans of Ternate and the nearby island of Tidore competed for control of the cloves trade centred on the islands of Ternate, Tidore, Makian and Bacan. *“The Sultans kept this lucrative trade entirely in their own hands as a rigid monopoly ...”*⁽¹⁾ They also exercised some control over the nutmeg trade from the Banda islands. From early times, Javanese, Makassarese, Bugis and Malays traded with Chinese, Indians and Arabs who dominated the international spice trade. Until then, trade had generally been peaceful except for piracy—traders were not armed with heavy weapons. But the dynamics of trade changed dramatically with the arrival of Europeans—Portuguese, Spanish, English and Dutch in succession—beginning in the early 16th century.

Ammari and Siokona (2003) have traced the origin of Ternate town back to 1250 and the kingdom to 1257.⁽²⁾ The first recorded ruler (*kolano/raja*) was Cico, later known as Baab Mashur Malamo, who held power between 1257-77.



Nutmeg from the Banda Islands, the spice that drew European explorers to the Moluccas (Java Lava)



And cloves that grew on Ternate and the volcanic islands to the south (Koehler's Medicinal-Plants, 1887)

With the decline of the seafaring Majapahit Empire centred on East Java in the mid-15th century, Ternate became the centre of a maritime empire that controlled trade throughout eastern Indonesia as far as eastern Sulawesi, Seram and the southern Philippines. Tidore's influence extended to eastern Halmahera, the Raja Ampat islands and Papua.

Besides spices, commodities traded traditionally included trepang, edible bird nests, tortoise shell, pearls, mother-of-pearl, sandalwood, ambergris, birds-of-paradise plumes, and other local produce. These were exchanged for textiles from India, and silks, ceramics and other household goods as well as guns and gunpowder from China.

Ternate adopted Islam during the reign of Sultan Marhum (r. 1466-86).⁽³⁾ Sultan Zainal Abidin (r. 1486-1500) had been a pupil of Sunan Ampel at Gresik in East Java, one of the Wali Songo who supposedly brought Islam to Java in the 15th century.

Ternate's power rose to a peak during the reign of Sultan Babullah (r. 1570-83). "*The sultans of Ternate and Tidore were once celebrated throughout the East for their power and regal magnificence.*" ⁽⁴⁾ Ternate and Tidore competed for superiority by demanding tribute from local communities throughout the region. Their outrigger fleets of *kora-kora* were important in maintaining their dominance. The sultans were astute in intervening in local conflicts and, later, joining forces with Europeans to subdue their vassals.

The Portuguese, under the command of Francisco Serrao, arrived in Ternate in 1512 at the invitation of Sultan Bayan Sirullah alias Bolief (r. 1500-1522), after being shipwrecked near Ambon while seeking to purchase nutmeg in the Banda Islands. In 1518, the Sultan permitted the Portuguese to establish a trading post and Fort Kastela (1522) in Ternate, which became the first permanent Portuguese settlement. They later built Fort Kalamata, also known as Kayu Merah, in 1540, as well as several other minor forts. (See Appendix 1—Forts of Ternate.)

Box 1. The Treaty of Zaragoza (1529) between Castile (Spain) and Portugal defined their respective areas of influence in Asia to resolve the 'Moluccan issue' that had arisen because both kingdoms claimed the Moluccan islands. Both asserted that the islands were within their area of influence as established by the **Treaty of Tordesillas (1494)** that had divided the globe into two hemispheres along a meridian 370 leagues west of the Cape Verde islands with Spain gaining most of the Americas and Portugal territories to the west in Africa and India. With both Portugal and Spain making landfall in the Moluccas in the early 16th century the Treaty of Zaragoza sought to resolve the dispute between the two maritime superpowers by establishing an antemeridian 297.5 leagues east of the Moluccas. As a compromise, the Portuguese paid the Spanish 350,000 guilders in gold to secure a monopoly on the spice trade although continuing to dispute the Spanish claims.

The first Spanish fleet under the command of Ferdinand Magellan, who had been killed in the Philippines in April 1521, arrived on the neighbouring island of Tidore in November 1521 and began to establish a trading post and fort. The Sultan of Tidore welcomed the Spanish in sup-

port of his opposition to the Sultan of Ternate and the Portuguese. At this time, the Spanish and Portuguese were hostile powers and competed in the spice trade. Despite the 1529 Treaty of Zaragoza (Box 1) between Spain and Portugal, their relations in the Moluccas remained estranged.

Relations between the Portuguese and Sultan Khairun (r. 1535-1570) deteriorated culminating in the Portuguese murder of the Sultan in 1570. Babullah became Sultan (r. 1570-1583), captured Fort Kastela, expelled the Portuguese in 1575, and converted Kastela into his palace. A monument at the site of the Kastela fort (in ruins) records these events.



De Molukische Eilanden, Celebes, Gilolo, 17th century map of the Spice Islands by Nicolas Sanson published in 1683 (Parry, D.E., 2005)

The kingdoms of Portugal and Spain had united in 1580, and thereafter their agents in the Moluccas worked together. The Portuguese and Spanish retained a small presence on Tidore but were powerless to retake Ternate from Sultan Babullah.

Between 1579 and 1606, the British, Spanish and Dutch competed for influence over the spice trade. The British embarked upon their expedition under the command of the privateer Francis Drake arriving in the Moluccas in 1579 to trade in spices but not to establish a permanent presence as the Dutch were to do later.

After several unsuccessful attempts to restore Spanish-Portuguese power in the Moluccas the Spanish, based in Manila, eventually captured Fort Kastela from the Ternatenese in April 1606 with the aid of Tidore, and deported Sultan Saidi (r. 1583-1606) and his entourage to Manila.

The Dutch arrived in Ambon to trade in spices in 1599. They came to Ternate in 1606 at the invitation of Sultan Saidi's sons, Princes Hidayat and Ali, to re-establish their right to the throne following the deportation of the Sultan and to take control from the Spanish.

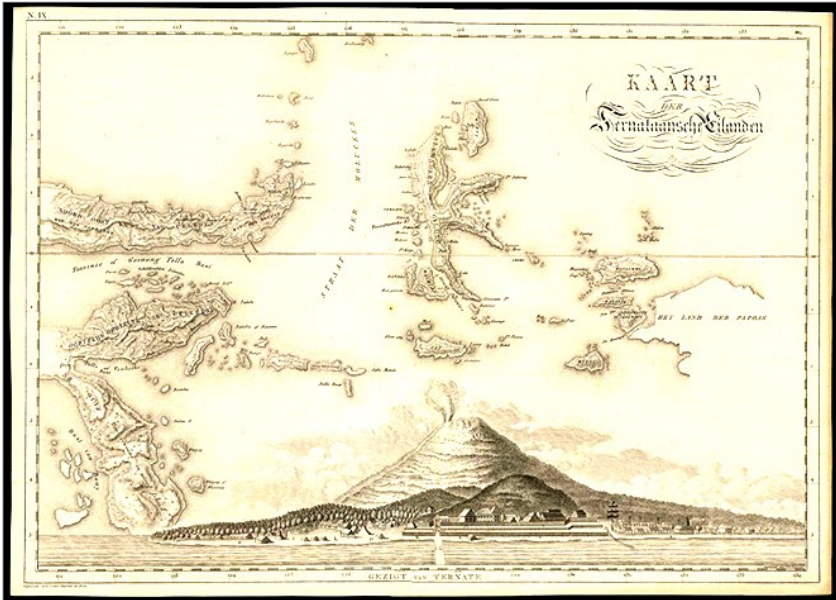
Captain Jacques l'Hermite began construction of Fort Malayo on Ternate in 1606. Meanwhile, the Spanish retained control of Fort Kastella. A prolonged stalemate between the Spanish and Dutch continued until 1663 when the Spanish finally withdrew to the Philippines due to insufficient supplies from Manila in the face of a possible invasion of Manila from China. The Spanish, on their departure, took with them many local Christians of mixed descent where they established a settlement in the province of Cavite where a form of Ternatenese is still spoken to this day.

Fort Malayo was completed in 1607 and renamed Fort Oranje, after the House of Oranje in the Netherlands. The sultan's palace, the *Kadaton*, was later moved from Fort Kastela and reestablished to the north of Fort Oranje, where the Dutch could provide protection and maintain close relations with the sultans.

During the 17th century, the Dutch expelled Asian and other European merchants from the Moluccas in an attempt to establish a monopoly over the production and trade of clove and nutmeg. British nutmeg traders remained on the island of Run in the Banda islands until about 1619. British claims to Run were eventually settled in the 1667 Treaty of Breda in which the British exchanged Run for the island of New Amsterdam (Manhattan, New York).⁽⁵⁾

Ternate became the headquarters of the *Vereenigde Oostindische Compagnie* (VOC), the Dutch East Indies Company, until it was transferred to Jayakarta in 1619 (known as Batavia under the Dutch and, later, Jakarta during the Japanese occupation during the Second World War).

The Dutch attempted to maintain their monopoly over the nutmeg and clove trade. ⁽⁶⁾ But by the 18th century, the British and French had

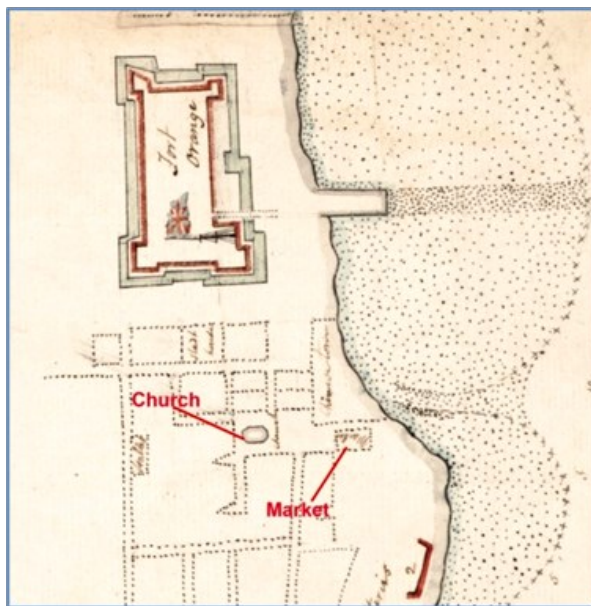


Early 19th century profile of Ternate showing Fort Oranje, with dwellings and market to the left of fort (Van den Bosch, J. 1818)

acquired seeds of these highly prized spices and had established plantations in Grenada in the Caribbean (nutmeg) and Mauritius and Seychelles (clove), respectively, thereby breaking the Dutch monopoly. Pierre Poivre (Peter Pepper), a Frenchman, famously smuggled clove seeds out of the Moluccas in 1770.

The British occupied the VOC's Moluccan possessions in 1796 during the French Revolutionary Wars. ⁽⁷⁾ The passage via the Moluccas

provided the British with an alternative route to China to maintain their China trade should the French blockade the more direct passage via the Malacca Strait and French Indochina (South China Sea). It was during this occupation that the British acquired nutmeg seed from the Banda islands and established plantations in their colonies in the Caribbean. By 1799, the VOC was bankrupt and its possessions were taken over by the Netherlands Government. The British handed control of the Moluccan possessions back to what was then the Netherlands Batavian Republic under the 1802 Treaty of Amiens.



Fort Oranje, 1810. Note the British flag on Fort Oranje
(Library of Congress, USA)

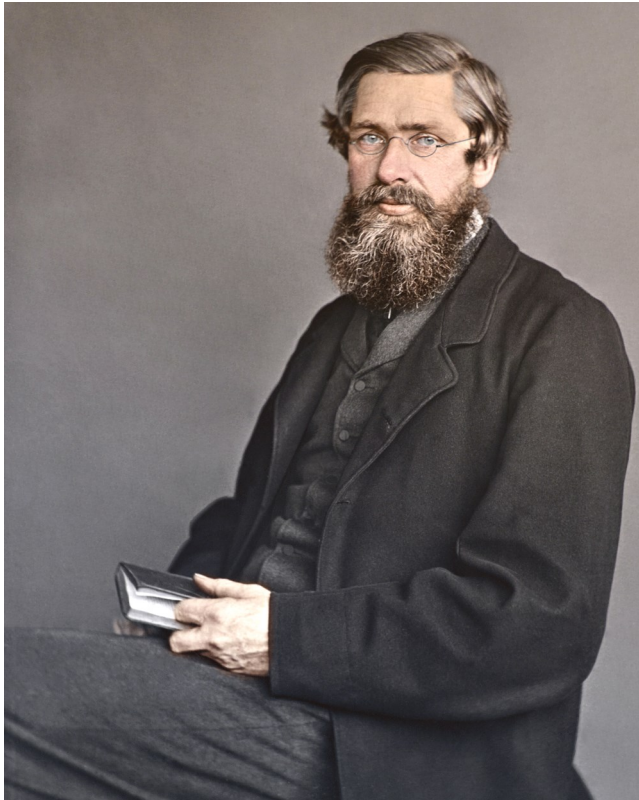
During the Napoleonic Wars, France annexed the Netherlands and was governed by Napoleon's brother, Louis, 1806-10. In 1807, Louis Napoleon appointed Herman Willem Daendels as Governor-General of the Dutch East Indies in the name of the French. To prevent French control of the Dutch colony, the British launched an invasion under Lt Governor-General Raffles in August 1811. This invasion was preceded by a second

occupation of the Moluccas including Ternate in August 1810 under the command of Captain Edward Tucker. ⁽⁸⁾ The British again returned the East Indies to the Netherlands in 1817. British and Dutch claims throughout the Malay Archipelago were finally settled in the 1825 Treaty of London.

When Alfred Russel Wallace arrived in Ternate in January 1858, the town was no longer a thriving trading port as in earlier times. A small community of Europeans, Christians of mixed descent, and Chinese and Arabs lived in the town alongside indigenous traders, collectively known as Makassarese, as well as the local people of Ternate who were subjects of the then Sultan, Muhammad Arsyad (r. 1859-76). The Dutch administration retained a presence with a small contingent of troops. Maarten Dirk van Renesse van Duivenbode, who assisted Wallace to find his house, was an important trader known as the 'king of Ternate' at the time.

Alfred Russel Wallace, the Naturalist

Alfred Russel Wallace (8 January 1823 - 7 November 1913) was born to a middle-class family of modest means, attended a grammar school (actually a single, large classroom), and was apprenticed as a land surveyor. He became very interested in natural history as a teenager, and read extensively on the subject. One book that greatly impressed him was *Vestiges of the Natural History of Creation* (Anon, 1844, Chambers, 1884), which convinced him that species were not fixed but could change, i.e., that they evolved over time.



Wallace, aged 46 years, in 1869, possibly holding a volume of his recently published book, *The Malay Archipelago*.
(George Beccaloni©)

Wallace's first natural history collecting expedition was to the Amazon, 1848-1852, with his friend Henry Walter Bates. Unfortunately, on his return voyage to Britain, the ship caught fire in the mid-Atlantic destroying all of his collections and most of his notebooks. Fortunately, he and the crew were rescued 10 days later by a passing boat. In February 1854, Wallace was elected a Fellow of The Royal Geographic Society for his writings following his Amazon expedition.

In March 1854, Wallace embarked on his second collecting expedition, this time in the Malay Archipelago (now comprising Brunei, Malaysia, Indonesia, Singapore and Timor Leste). He was attracted to the region because of its rich biological diversity and the paucity of specimens from there in British museums. He arrived in Singapore on 18 April 1854, and spent seven years and nine months travelling around the vast archipelago visiting each major island at least once. ⁽⁹⁾ The book he later wrote about his travels, *The Malay Archipelago: The Land of the Orang-utan, and the Bird of Paradise*, (Wallace, 1869) has inspired generations of naturalists and has never been out of print since it was first published.

Wallace's primary aim in his expedition was to collect natural history specimens (mainly butterflies, beetles and birds) for his private collection, which he planned to study when he returned to Britain, hoping to get insights into how species evolved. To earn money to fund the trip he sold duplicates specimens to private collectors and museums through his agent Samuel Stevens in London. Stevens sent Wallace money and equipment and published extracts of his letters about his collecting to raise interest in the specimens. By the end of his expedition, Wallace had collected 125,660 specimens of perhaps 5,000 species of which about 1,000 were new to science. ⁽¹⁰⁾

Wallace was an astute observer, a self-taught naturalist/scientist and a prolific writer of articles on many aspects of natural history many of which appeared in learned journals. ⁽¹¹⁾ His writings, while travelling in the Malay Archipelago, reflect the development of his thinking about evolution and related subjects.

His most notable article during the early period of his travels in the region was his 1855 Sarawak Law paper, *On the Law that has Regulated the Introduction of New Species* (Wallace, 1855). This was an important first step towards his theory of evolution by natural selection and includes the profound statement, “*Every species has come into existence coincident both in space and time with a pre-existing closely allied species.*”

His second and most important paper was his 1858 *Ternate Essay, On the Tendency of Species to Depart Indefinitely from the Original Type*, which outlined his theory of evolution by natural selection. ⁽¹²⁾ Although he most likely wrote the manuscript in Ternate, his actual epiphany, which he explains in *The Malay Archipelago* occurred during a malaria fit, was probably in the village of Dodinga on the nearby large island of Halmahera (Beccaloni, 2019).

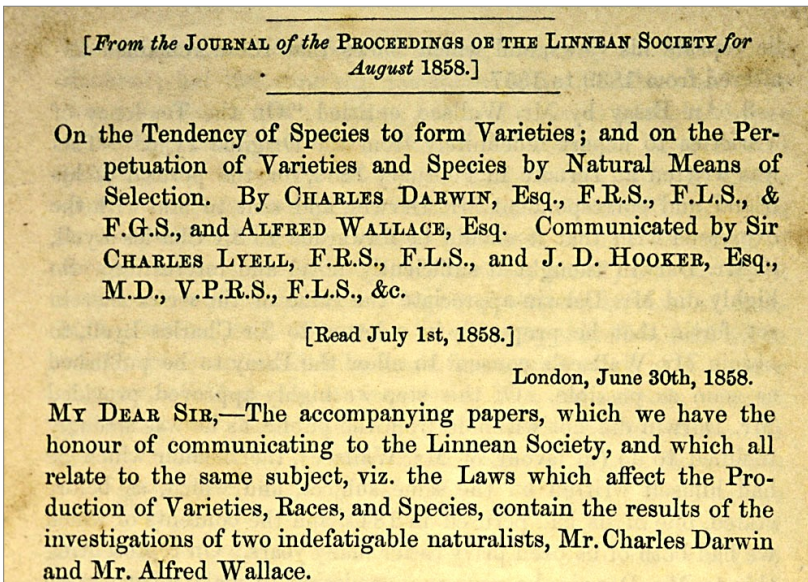
Wallace dispatched the manuscript of his *Ternate Essay*, together with a covering letter, now known as the *Letter from Ternate*, to Charles Darwin in Kent, UK, in March 1858. When Darwin read the essay he was astounded that Wallace had independently come up with exactly the



The lower part of Dodinga village, Halmahera Island, where it is believed Wallace had his ‘epiphany’ of the theory of evolution by natural selection. (George Beccaloni©)

same theory he had devised, but not published, 20 years earlier. Darwin's friends, the geologist Charles Lyell and botanist Joseph Hooker, came to Darwin's rescue and decided that Wallace's paper should be read together with extracts of two of Darwin's unpublished writings on the subject at a meeting of the Linnean Society of London on 1 July 1858. Their writings were then published the following month.

Darwin's and Wallace's writings were published together in the Linnean Society's journal as the paper, *On the Tendency of Species to form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection* (Darwin and Wallace, 1858). The Darwin-Wallace paper contained the first proposal of the mechanisms underlying evolution by natural selection and enabled scientists to finally accept the concept of evolution, which had been disputed for many years.



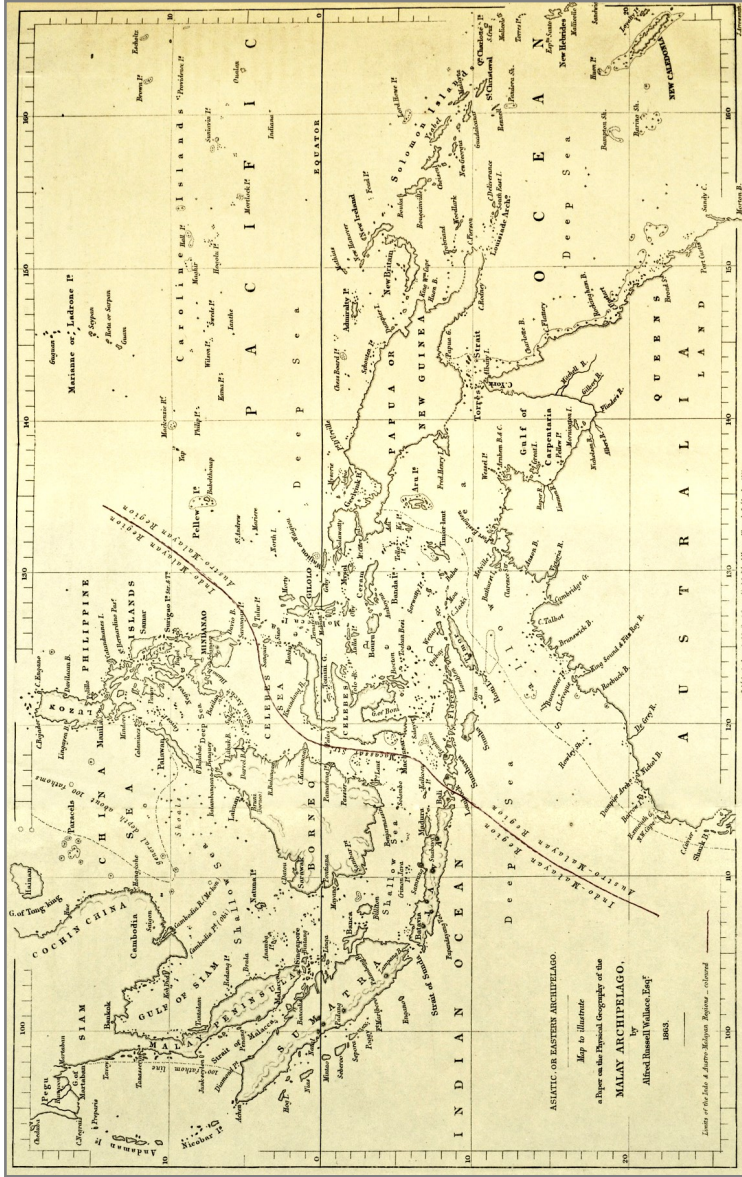
Title of Darwin and Wallace's 1858 paper on natural selection.
(Wallace Memorial Fund and George Beccaloni©)

Controversy exists, to this day, whether Wallace's name should have appeared before that of Darwin in the Linnean publication, i.e., who should have been given primary credit for the discovery of the theory of evolution (precedence in publication being all important in the scientific community).

Darwin had been slowly accumulating evidence and writing a large book about evolution for many years. Wallace's *Ternate Essay* prompted him to condense what he had written thus far and produce his now famous book *On the Origin of Species*, (Darwin, 1859), which was printed 15 months later in November 1859.

Wallace's other major discovery during his travels was, what has become known, as the Wallace Line, the idea of which was published in his paper, *On the Zoological Geography of the Malay Archipelago* (Wallace, 1859).⁽¹³⁾ Because of this and his later monumental two-volume work, *The Geographical Distribution of Animals* (Wallace, 1876), Wallace is recognized as the father of evolutionary biogeography, the discipline that describes and seeks to explain the distribution of organisms throughout the world.

Box 2. The Wallace Line is an imaginary line that runs north from between Bali and Lombok, and Borneo and Sulawesi to the southern Philippines, demarcating Asian fauna from that of Australasia. Wallace observed that, despite no apparent physical barriers to the dispersal of species, a distinct biogeographical transition exists between Sundaland (Asia) to the west and Sahul (Australasia) to the east, and that this zone was one of the world's centres of biodiversity now known as *Wallacea*. To the west of the line, the fauna is Asian in origin and includes species like tigers, rhinos and orang-utans, whereas east of it the fauna is Australian, and includes marsupials, birds of paradise and cockatoos. Wallace postulated that the explanation lay in geology, which he explained first using Lyell's theory of uplift and subsidence and later by sea level changes. Both Darwin on his Beagle voyage and Wallace in his travels in the Malay Archipelago carried Lyell's *Principles of Geology*, 1835, with them.



Map 2: First map showing the Wallace Line, from his paper, "On the physical geography of the Malay Archipelago", Wallace 1863 (George Beccaloni©)

THE
MALAY ARCHIPELAGO:
THE LAND OF THE
ORANG-UTAN, AND THE BIRD OF PARADISE.
A NARRATIVE OF TRAVEL,
WITH STUDIES OF MAN AND NATURE.

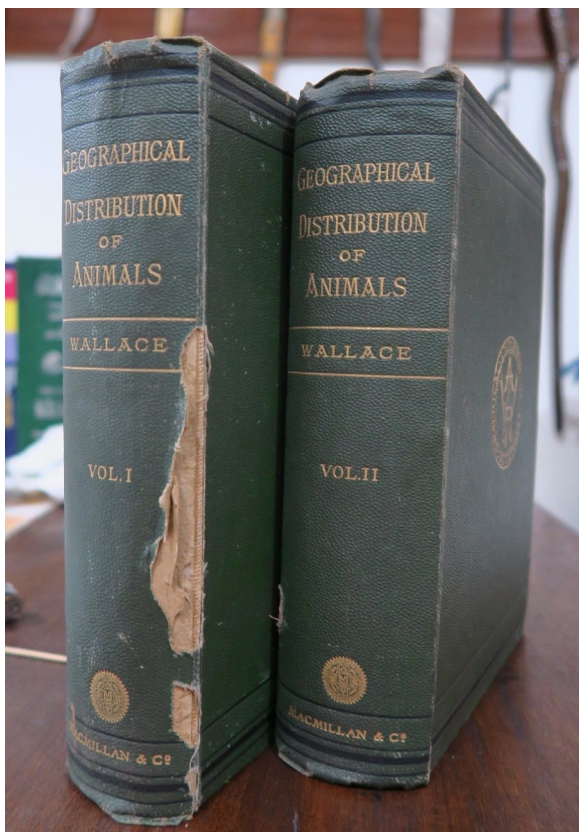
BY
ALFRED RUSSEL WALLACE,
AUTHOR OF
TRAVELS ON THE AMAZON AND RIO NEGRO, "THE PALM TREES OF THE AMAZON," ETC.
IN TWO VOLS.—VOL. II.



London:
MACMILLAN AND CO.
1869.

[The Right of Translation and Reproduction is reserved.]

Title page of Wallace's *The Malay Archipelago*, First Edition, 1869
(British Museum, Natural History Branch)



A first edition of *Geographical Distribution of Animals* (Wallace, 1876) in the library of the Royal Geographical Society of South Australia

Ali, Wallace's faithful companion

During much of his travels, Wallace hired paid assistants including a young man whom he refers to simply as Ali, "*my faithful companion*". In Sarawak on the island of Borneo, where he stayed for about 15 months until 10 February 1856, he "*engaged a Malay boy (Ali) as a personal servant and to help (him) to learn the Malay language...*", Malay being the "*lingua franca*" (trade) language throughout the Archipelago. ⁽¹⁴⁾

Ali was about 15 years old at the time. He proved very adept as a camp cook and, in time, shooting birds and skinning them in preparation for shipment to London. Wallace and Ali worked together continuously during Wallace's travels until they arrived in Singapore on 18 January 1862 shortly before Wallace's departure for England.

Wallace describes Ali as his "*headman*" and "*faithful companion*" and mentions him often in *The Malay Archipelago* and elsewhere in his writings. Notably, Ali nursed Wallace during his malaria fit at Dodinga during which Wallace is believed to have conceived of his Theory of Evolution by Natural Selection. Wallace also restored Ali to health on numerous occasions. They both suffered and helped each other to overcome frequent episodes of illness, accidents, and general misery during their travels, not to mention the exasperation of trying to manage strings of often unreliable, sometimes larcenous, hired hands. ⁽¹⁵⁾

Upon Wallace's departure from Singapore to England, he gave Ali many gifts: "*On parting, besides a present in money, I gave him my two double-barreled guns and whatever ammunition I had, with a lot of surplus stores ... which made him quite rich. He here, for the first time, adopted European clothes, which did not suit him nearly so well as his native dress, and thus clad a friend took a very good photograph of him. I therefore now present his likeness to my readers as that of the best native servant I ever had, and the faithful companion of almost all my journeyings among the islands of the far East.*" (Wallace, 1859b). Ali was then about 22 years old.

There is a lot that we do not know about Ali. Of particular interest is where he went after saying farewell to Wallace in Singapore in 1862. Wallace and Ali had spent some three years based in Ternate. Ali had married

in Ternate in 1859 and, it is believed, that he later returned there. ⁽¹⁶⁾ An interesting account emerged confirming Ali's presence in Ternate in 1907. An American zoologist, Thomas Barbour, Director of the Museum of Comparative Zoology at Harvard University, visited Ternate and met "a wizened old Malay man" who said, "I am Ali Wallace". Ali would have been around 68 at the time. The two men discussed obscure zoological speci-



The only known photo of Ali taken in Singapore in 1862 upon Wallace's return to England (Wallace, 1905, public domain)

mens. Barbour took a photo of Ali and sent it to Wallace who, "wrote me a delightful letter acknowledging it (i.e., the letter—ed) and reminiscing over time when Ali had saved his life, nursing him through a terrific attack of malaria." ⁽¹⁷⁾ However, for some unknown reason, the photo was not enclosed and sadly Wallace did not see it.

The question arises: are there descendants of Ali Wallace in Ternate or Halmahera? Paul Spencer Sochaczewski (see Bio Sketches) has attempted to locate descendants of Ali. In 2018-2019, he conducted a media campaign with the help of Rinto Taib, Curator of the Fort Oranje Museum in Ternate. There was modest initial interest but enquiries did not yield any definitive results.

The role that Ali played in enabling Wallace to make his discoveries deserves greater attention. Ali's little-known story should be recorded and acknowledged as a significant contribution to Wallace's expeditions in eastern Indonesia.

Wallace's Clues to the Location of His House in Ternate

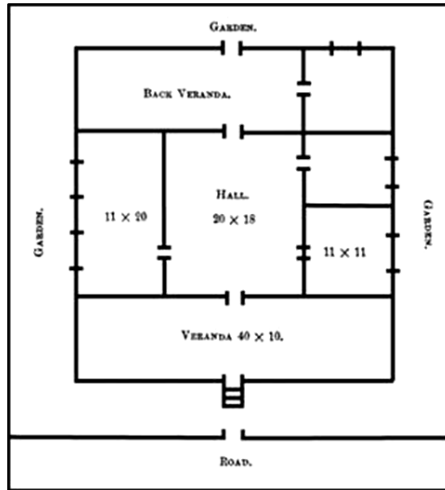
Dr Sangkot Marzuki, then president of the Indonesian Academy of Sciences, raised awareness of Wallace's role in the theory of evolution, as the father of modern biogeography and in biological diversity and conservation (Marzuki & Andili (2015)).⁽¹⁸⁾ They conclude that "*Wallace's house in Ternate is the most important science history site in Indonesia*" because this is where he was living when he sent his essay on evolution by natural selection to Charles Darwin.

Wallace describes the features and setting of his house in Chapter 21 of *The Malay Archipelago*. Historians, biologists and Wallace enthusiasts as well as the local government and residents of Ternate have for many years been interested in locating the site of Wallace's house. Their efforts have generated much debate based on oral history, local interests, and hypotheses based on interpretations of the clues that Wallace provides in his travelogue.

Wallace wrote that he rented his house from a "*Chinaman*" with the aid of ... "*Mr Duivenboden, a native of Ternate, of an ancient Dutch family.*"⁽¹⁹⁾ "He then visiting the Resident, (Casparus Bosscher),⁽²⁰⁾ and the Police Magistrate (where he presumably registered as a resident). (Our attempts to search historical records, that might reveal details of Wallace's registration as a resident and possibly the location of his house, have so far been unsuccessful.)

In his book, Wallace provides a description and plan of his house that offers clues to its location: "*I obtained a house, rather ruinous, but well adapted to my purpose, being close to the town, yet with a free outlet to the country and the mountain. A few needful repairs were soon made, some bamboo furniture & other necessities obtained, and after a visit to the Resident and police magistrate, I found myself an inhabitant of the earthquake-troubled island of Ternate ... I retained this house for three years, as I found it very convenient to have a place to return to after my voyages to the various islands of the Moluccas and New Guinea, where I could pack my collections, recruit my health, and make preparations for future journeys.*"⁽²¹⁾

Wallace goes on to describe his house and provide some more clues as to its location: “A description of my house (the plan of which is here shown – sic) will enable the reader to understand a very common mode of building in these islands. There is of course only one floor. The walls are of stone up to three feet high; on this are strong squared posts supporting the roof, everywhere except in the verandah filled in with the leaf-stems of the sago palm, fitted neatly in wooden framing. The floor is of stucco, and the ceilings are like the walls. The



Plan of Wallace's house, *The Malay Archipelago*, p. 313
(dimensions in feet)

house is forty feet square [about 12.2 x 12.2 m—ed.], consists of four rooms, a hall, and two verandahs, and is surrounded by a wilderness of fruit trees. A deep well supplied me with pure cold water - a great luxury in this climate. Five minutes' walk down the road brought me to the market and the beach, while in the opposite direction there were no more European houses between me and the mountain. In this house, I spent many happy days. ... Just below my house is the fort, built by the Portuguese, below which is an open space to the beach and beyond this is the native town extends for about a mile to the north-east. About the center of it is the palace of the Sultan, now a large untidy, half-ruinous building of stone.”⁽²²⁾

Wallace informs that the mode of construction of his house was very common and its floor plan was not unusual either. Roofing of sago palm leaves strung together is very durable and can last for a long time with periodic replacement. Nevertheless, the original Wallace house has likely rotted away or been built over after some 150 years. Although “*the walls ... of stone up to three feet high*” would be more resilient, they also could have been built over.

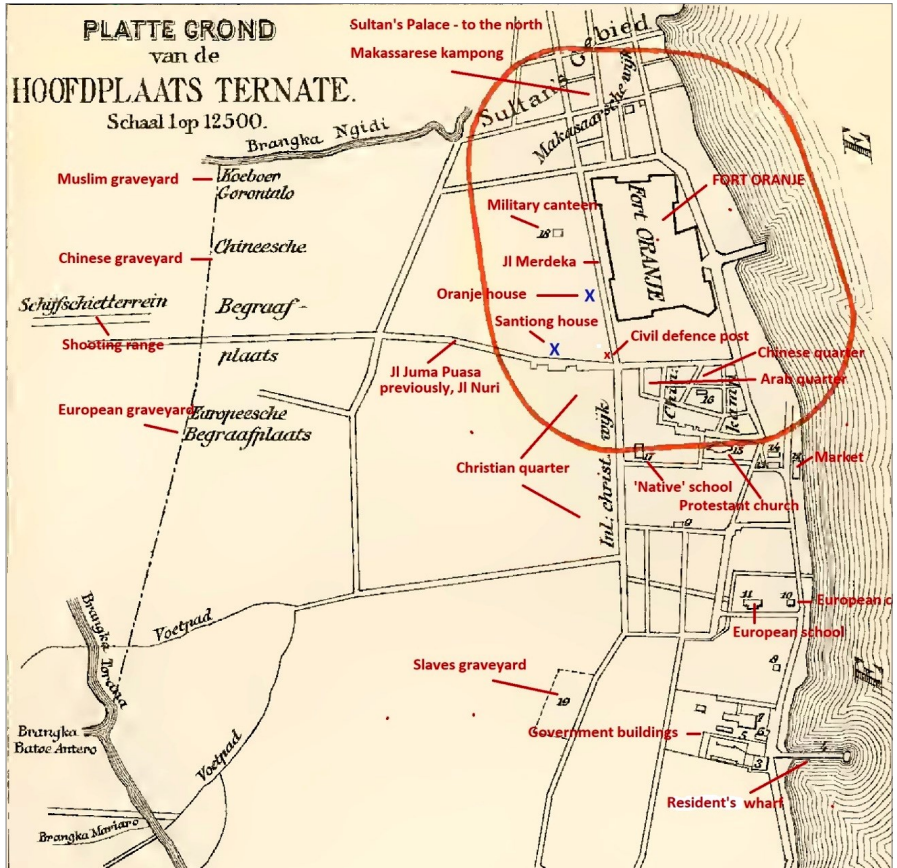
Box 3. Wallace’s Clues to the Location of His House

- Mode of construction: not dissimilar to native houses, *a very common mode of building in these islands.*
- The house was owned by a *Chinaman.*
- Deep well: *a deep well supplied me with pure cold water - a great luxury in this climate.*
- Location relative to the fort: *just below my house is the fort, built by the Portuguese.*
- Location relative to the market and seafront: *five minutes walk down the road brought me to the market and the beach.*
- Location relative to the native town: *the native town extends for about a mile to the northeast [from the open area in front of the fort].*
- Location relative to the town and the mountain: *close to the town, yet with a free outlet to the country and the mountain.*
- Location relative to other European houses: *while in the opposite direction [from the market i.e. west of the fort] there were no more European houses between me and the mountain.*

So, a search for the original Wallace house is unlikely to be productive. Rather, we need to rely on the clues that Wallace provides in *The Malay Archipelago* in the search for the site of his house.

Ternate in the Time of Wallace

The first task in the search for the site of Wallace’s house was to establish the general area in which he had lived. Historical accounts and recent research about Ternate town and its people before and around the time of Wallace assist in interpreting Wallace’s clues regarding the location of his



Map 3: Late 19th century map of Ternate
(De Clercq, 1890; with some additional annotations, Nicholas Hughes)

house relative to the European community and Fort Oranje. They also provided interesting information about the presence of deep wells in the old town.

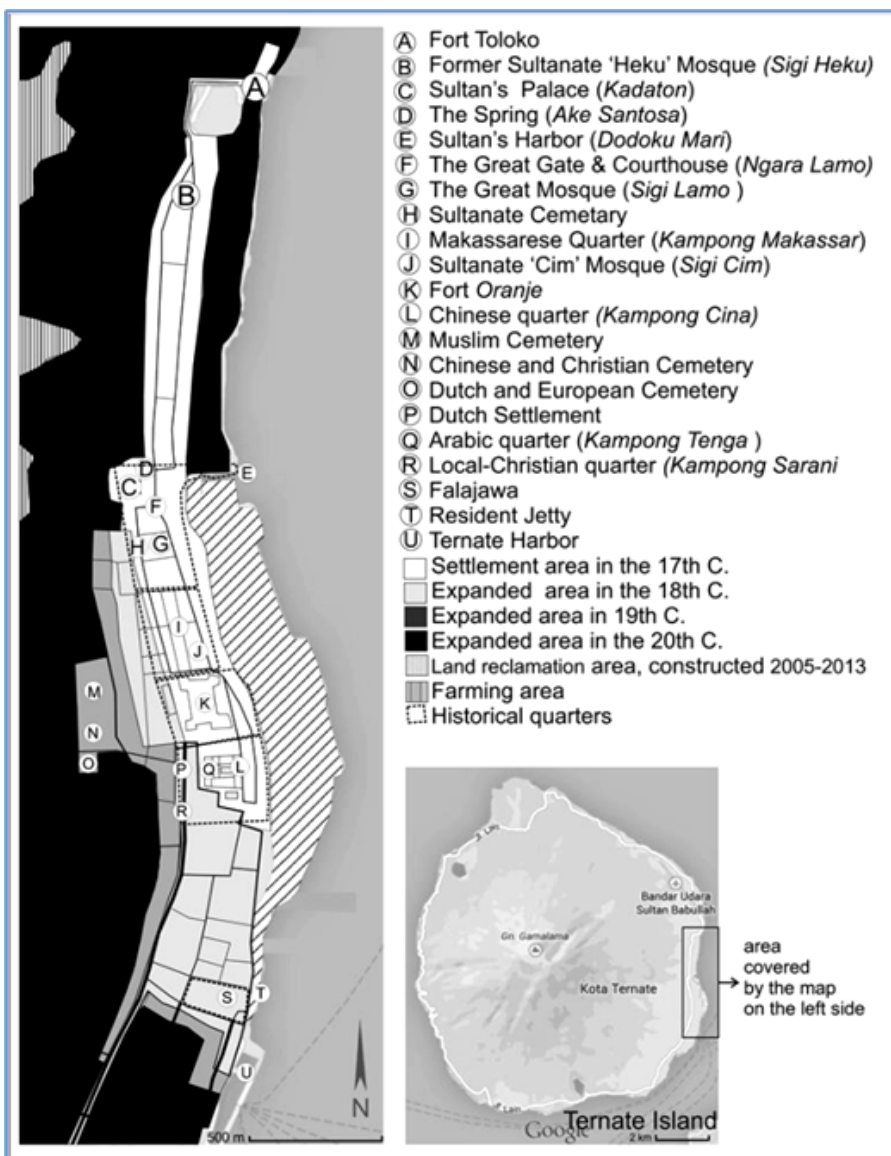
The European community

First, we examined Wallace's clues that he was "close to town, yet with a free outlet to the country and the mountain" and that "there were no more European houses between me and the mountain". The history of the growth of Ternate town is informative in this regard.

When Wallace arrived in Ternate in 1858, the town was no longer a busy commercial centre as in earlier times - rather, it had become a colonial backwater. The spice trade no longer flourished although a thriving trade in birds-of-paradise plumes existed. Ternate remained the administrative and logistical centre for the Halmahera Islands with a monthly mail boat that enabled Wallace to send his specimens to London. It also served as an ideal base for his collecting trips in eastern Indonesia to which he could return to dispatch his specimens and restore his health.



Town planning map of Ternate (Reimer, C.F. ca 1759).
The European community lived south and west of the Burgherswache—the civil defence post (annotations Nicholas Hughes)



Map 4: Evolution of Ternate town—17th through 20th centuries
 (Maulana & Kanazawa, 2016)

De Clercq (1890), the Resident of Ternate, 1885-89,⁽²³⁾ provides an extensive description of Ternate and a map of the town (page 23) albeit some 30 years after Wallace's time. Maulana & Kanazawa (2016) researched the historical development of Ternate's urban quarters from the 17th through the 20th centuries (map, page 25). Early maps of the Oranje Fort and its surrounds are also informative.

Wallace wrote, "*The people of Ternate are of three well-marked races: the Ternate Malays, the Orang Sirani and the Dutch.*" ⁽²⁴⁾ ⁽²⁵⁾ In Dutch colonial times, residents were classed as Europeans, Foreign Orientals (predominantly Chinese and Arabs) and *Inlandsche* (indigenes), each subject to a separate set of regulations. According to de Clercq, Christians of mixed descent in Ternate fell into a "grey area" between Europeans and *Inlandsche*; they were considered "equivalent to Europeans" due to their "whim of fate".

Box 4. Population of Ternate and Tidore in the Time of Wallace, Census of 1860 (de Clercq, 1890, pg 23). The Dutch conducted a census of Ternate and Tidore every ten years at the end of the year:

- *Subjects of the Sultan of Ternate* – 64,393
- *Subjects of the Sultan of Tidore* – 28,878
- *Serfs* – none recorded (slavery had been abolished officially before 1860, but this is not to say that there were no longer any slaves in Ternate)
- *Makassarese* (other indigenes not subjects of the sultan) – 1,256
- *Chinese* – 392
- *Arabs* – none recorded (De Clercq observes that some Arabs, traders and Islamic teachers, arrived in Ternate in the 1880s. (Sutherland, 2021, fn 168, informs that there were already Arabs in Ternate in 1853.)
- *Native Christians* – 428
- *Europeans and those on the same level* (i.e., of mixed descent) – 416.

There were about 25 *full-blooded* Europeans among a population of some 416 *Europeans*, i.e., "those on the same level" as the Dutch. Given de Clercq's explanation, Wallace's use of the word *European* would appear to include people of mixed descent also.

Some Dutch officials lived along the beachfront where the Resident's wharf and administrative buildings were and are still located. Although the wharf and buildings have long since been rebuilt, the layout of the town remains largely unchanged. Chinese and Arabs lived in designated quarters south of Fort Oranje that continues to be the business centre of the town. Indigenous traders, known collectively as Makassarese, lived in a kampong immediately north of Fort Oranje. Native Ternatenese, subjects of the Sultan, lived in kampongs at Soa Sio further north around the sultan's palace as they do to this day.

Wallace's clues that he was "*close to town, yet with a free outlet to the country and the mountain*" and that "*there were no more European houses between me and the mountain*" indicate that he did not live within the European quarter. Europeans and Christians of mixed descent lived south and west of Fort Oranje. Reiner's map of ca 1759 (page 24) shows the area to the south of the fort demarcated for town development. The *burgerswache*, a civil defence post, would have been for the protection of the European community in this neighbourhood. Maulana & Kanazawa (2016) indicate that there were European houses along the southern side of Jalan Nuri, now Jalan Juma Puasa. (Whincup confirmed this by locating four old, deep wells on blocks along the south side of this street.)

De Clercq's 1890 map shows some key features: the Christian and Chinese quarters, the Protestant church, the *Inlandsche* and European schools, and the market to which Wallace refers. A military drill ground, the Oranje Field, is behind the northwestern rampart of Fort Oranje. Higher up towards the mountain, beyond the Christian, Chinese and Muslim cemeteries, is a shooting range.

We conclude that Wallace did not live in the European quarter. Moreover, Wallace's clues that his house was "*surrounded by a wilderness of fruit trees*" suggests it was separate from the European quarter.

Ternate town has grown extensively in recent years (Maulana & Kanazawa map, page 25). Prominent features in the historic quarter, including the market, can still be seen while walking around the town. The most significant change has been land reclamation between 2005 and 2013 over

the reef on the seaward side of Fort Oranje due to a lack of urban space. Originally, Fort Oranje was on the foreshore - now the seafront is about 350 m from Fort Oranje with high-rise, commercial buildings on the reclaimed area.

Fort Oranje

Wallace writes, *“just below my house is the fort, built by the Portuguese”*. Obviously, he is referring to Fort Oranje, the Dutch fort constructed in 1606-7. Fort Tolukko (Spanish/Dutch) is the only fort several kilometres north of Fort Oranje. The other principal Portuguese forts are Kastela on the southwest of the island and Kalamata at the southern end (see map page 57).

So, why did Wallace write that the fort was *“built by the Portuguese”*? There are various accounts of the early origins of Fort Oranje. Hanna & Alwi (1990) ⁽²⁶⁾ suggest that Fort Oranje was built over the remnants of an earlier Portuguese fort at the coastal village of Malayu, as does the information plaque at the entrance to Fort Oranje. Most sources inform that the fort was initially called Malayo (or Malayu) after the village where it was built – possibly over a local fort. ⁽²⁷⁾ Initially, the Dutch named their new fort Malayo, but in 1609 renamed it Oranje after the House of Orange-Nassau in the Netherlands.

Wallace’s statement, *“built by the Portuguese”*, may have some historical basis, but it also seems that Wallace was weak in his historical knowledge. For example, he writes that Fort Belgica in the Banda islands was a Portuguese fort, which is incorrect – it was built by the Dutch. ⁽²⁸⁾ He also refers to the fort at Dodinga, on Halmahera, as a Portuguese fort – it also is a Dutch fort. De Clercq, who had a Dutch translation of *The Malay Archipelago*, comments that he found many of Wallace’s historical and geographical observations to be inaccurate. ⁽²⁹⁾

A devastating earthquake occurred in Ternate in February 1840, about 20 years before Wallace arrived. Wallace records *“In walking around the suburbs of Ternate, we find everywhere the ruins of massive stone and brick buildings, gateways, and arches, showing at once the superior wealth of the ancient town and the destructive effects of the earthquakes.”* ⁽³⁰⁾

De Clercq informs that in the aftermath of the earthquake, “... the bastions of Fort Oranje suffered little damage; stone-built houses collapsed but those constructed in the traditional Ternatenese style survived.” Stone buildings within the fort suffered “... and had left the fort in a state unfit for habitation.”⁽³¹⁾ This led the Dutch authorities to review the fort’s strategic im-



Fort Oranje from a larger painting of Ternate Island— source unknown. The fort, in this image, does not have a moat so the painting must date from before 1634 when the moat was constructed.

portance and, in 1866, the garrison was withdrawn. The Indonesian military has occupied the fort since Independence in 1945. In 2012, the fort was transferred to civilian authorities and is now being restored as a historic site. The military still occupies the Oranje Field behind the Fort.

Old deep wells

Interestingly, De Clercq provides information about wells in Ternate town: “There is a clear shortage of good drinking water in the capital. The wells have been dug too close to the beach and not deep enough—as a result, there is

always salt in the water. It does not bother the natives, though, and even the Europeans become used to it after a while, so nobody wants to take the trouble and spend the money needed to dig a deeper well ... on the slope of the mountain.” ⁽³²⁾

Clearly, deep wells providing *pure cold water*, as Wallace describes, were uncommon in his time. That Wallace had a deep well indicates he lived higher on the slope of the mountain, not near the beach where wells were shallower and more saline.

The presence of *a deep well (that) supplied me with pure cold water* is an important clue in the search for the site of Wallace’s house.

The General Location in which Wallace lived

The study team concluded that Wallace lived somewhere in what is now the Santiong Kelurahan (sub-district—village). This conclusion corroborates earlier efforts to locate Wallace’s house that came to a similar conclusion, which is discussed below.

Earlier Efforts to Locate Wallace's House

Key contenders for the site of Wallace's house have been the Sultan's House and the Santiong House. More recently, a third contender, the Oranje Site, has been proposed.

We know of three earlier documented accounts that enquired into the location of Wallace's house: Niizuma (1997) who visited Ternate in 1980 and 1988; Marzuki & Andili (2015) who visited in 2008; and Beccaloni (2012a,b) who visited in 2012.

Marzuki & Andili's working assumption was that the original house might no longer exist. Instead, they reasoned that it should be possible to determine its location based on Wallace's clues, in particular, the presence of a deep well supported by oral history. Niizuma had adopted a similar approach earlier. Both researchers placed the Wallace house at the site that has become known as the Santiong House. Beccaloni questioned whether this site met another of Wallace's clues adequately, that *"just below my house is the fort, ..."* He proposed another location closer to the southwest bastion of Fort Oranje.

The Sultan's House

Some people have claimed that an old house, known as the Sultan's House, owned by the family of the Sultan, in Kampong Sao Sia (Nine Clans) north of Fort Oranje on Jalan Sultan Babullah, is the Wallace house.

Wallace informs that his house was owned by a *"Chinaman"*—not by the Sultan's family. Moreover, the Sultan's House does not have a deep well—rather, it is shallow (2.4 meters). The well is square, unlike deep wells that are round, and the water is brackish being near the coast. A square well, if deep, would be subject to cave-in in the event of earthquakes that occur frequently in Ternate. Moreover, this house is more than *"five minutes' walk ... to the market"* to which Wallace refers. Nor does it have a *"free outlet to the mountain"*.

The then Sultan of Ternate, Muzaffar Shah II (r. 1975-2015), perpetuated the belief that this house was the Wallace house. He stated that this

was the site during a symposium on the Wallace Line, in Ternate, December 2010, and that he had some notes from foreign researchers to support



Sultan's House, 1986, before restoration. (Courtesy of Sir Ghilleain Prance, in Gardiner, B. G., 2008)



Paul Whincup, Paul Sochaczewski and Fiffy Sahib inspecting the Sultan's House well. (Nicholas Hughes, 2019)

his claim. These notes supposedly included a reference to the then Sultan Muhammad Zain (r. 1823-61) having offered his protection to Wallace during his stay in Ternate. ⁽³³⁾ Wallace does not refer to having met the Sultan nor to seeking his protection.

Severin (1997) visited the Sultan's House in 1996 and observed that its architecture and the floor plan do not conform to Wallace's description. For example, the front verandah is supported by a row of eight masonry pillars. Marzuki & Andili (2015) made the same observation as have other well-informed visitors, ourselves included.

Two certificates, dated November 2013, bearing the names of *Fauna and Flora International* and *SeaTrek*, a sailing adventure company, are displayed in the Sultan's House. ⁽³⁴⁾ Beccaloni has clarified that one refers to a replica of a Wallace hut on Gam Island in the Raja Ampat islands ⁽³⁵⁾ and the other, which suggests that this is the Wallace house, is based on misinformation. ⁽³⁶⁾

Surprisingly, some visitors searching for the Wallace House are still directed to the Sultan's house to this day.

The Santiong House

The Santiong House is so named after the Kelurahan (sub-district) Santiong in which it is located. *Santiong* is Chinese for *cemetery* and, indeed, the Chinese cemetery is further up the road toward the mountain.

As mentioned, we know of three accounts of persons who searched for the Wallace House in this area, Akio Niizuma, Marzuki & Andili, and Beccaloni.

Akio Niizuma—1980

Dr Akio Niizuma, evolutionary biologist, Hokkaido University, nominated the Santiong house as the site of the Wallace house in 1980. ⁽³⁷⁾⁽³⁸⁾ While researching Wallace, Niizuma visited Ternate in 1980 and, again, in 1988 together with colleagues and, inter alia, searched for the site of Wallace's house. ⁽³⁹⁾ He relied principally on local knowledge of old wells.

Niizuma (1997) writes, "Where was Wallace's house? The most important hint is to find where the well was. It seems that the place was close to the mountainside of the fort. ... I asked many people about the location of old wells. ... There are many wells, but there are only two old wells. One well is located on the corner of a small Islamic mosque which is situated on the left side of the fort, as seen from the seaside. The other is located behind a small office which is situated on the right side. I think that Wallace lived near the well, which is situated on the left side. That well was used until 1980 but when I visited in 1988 it was surrounded by a fence constructed by a young medical doctor, Dr Najib, and the top of the well had been covered. A water pipe had been installed ... Besides, children sometimes fell down the well ... and died." (40)



Santiong House and well, 1980.
"The well that is beside the house where Wallace is thought to have lived; I think the cement column is from Dutch times".
(Niizuma, 1997, p. 230)

Niizuma concludes that the Santiong House was the site of the Wallace house. His 1980 photo shows that it had a thatched roof at the time.

Niizuma relates an interesting story from the 1940s about the Santiong House. ⁽⁴¹⁾ Dr Ahmad Najib Aziz, a medical doctor and Santiong resident, had owned the Santiong house until the 1980s. When Najib was young, a Japanese engineer, Mr Odagawa from Habikino-shi (city), Osaka-fu (prefecture), had worked for a coal mining company, Maruta Development Enterprises, and had rented a room in the Santiong House during the Second World War. Niizuma attempted to verify this account but found that the company no longer existed.

Najib recalls that after Niizuma's second visit in 1988 Niizuma sent him a copy of *The Malay Archipelago* via an NHK journalist (Japan's public



Fifty Sahib with Mr Runza, current owner of the Santiong House, on the plinth of the capped well. Note the cement pillar shown in Niizuma's photo of 1980 (Paul Whincup, 2019)

broadcaster) who interviewed Najib in 1990. The journalist asked Najib to provide a narrative when making a film about the Wallace house. (Ms. Naoko Misono, see Acknowledgements, attempted to view this film in NHK archives but was informed that the archives could not be accessed for copyright reasons. It is assumed that the film does exist.)

This narrative recounts the story of the Japanese engineer who had supposedly lived in the Santiong House and believed that he was staying in the Wallace house. *The Malay Archipelago* had been translated into Japanese (Kakichi Uchida, 1942)⁽³⁸⁾, and it is likely that the Japanese engineer had a copy of this translation as part of the Japanese war effort and, therefore, a basis for believing that he was staying in Wallace's house.

And that is how the Santiong community came to believe that the Santiong House was the site of Wallace's house. Most importantly, it demonstrates that interest in the location of the Wallace house dates back as far as the 1940s.

Marzuki & Andili—2008

Marzuki & Andili searched for the site of the Wallace house during a preliminary event in Ternate to the *International Conference on Alfred Russel Wallace and the Wallacea*, Makassar, 10-13 December 2008.⁽⁴²⁾

Dr Ahmad Najib Aziz and Dr Mochtar Zein Pattiha related the story of the Japanese engineer to Marzuki & Andili. (2015). They "... were most aware that more solid evidence was needed ... to support this position." They examined De Clercq's 1890 map and Wallace's clue of a deep well in the neighbourhood. Andili, who "... was born and grew up in Santiong, independently confirmed that older people who had grown up in the locality, point to the fact that until recently there were only two deep wells in the neighbourhood, the only source of freshwater for the local inhabitants. Both wells had been capped ... but one ... is still being used with the help of a water pump", namely, the one behind the Santiong House.

Marzuki & Andili were "reasonably confident" that there were only two old wells in the neighbourhood. They inform that the second well was to the south side further to the west, which would place it on the opposite side of the road from the Santiong House on Jalan Juma Puasa, i.e., in the

area where European houses had existed in Wallace's time. (As we mentioned above, Whincup identified four such wells on the south side of Jl Juma Puasa. This would suggest that Marzuki & Andili's search for old wells was somewhat incomplete.) They deduced that the Santiong house corresponded with Wallace's clues and that Najib's account of the Japanese engineer corroborated their conclusion.

Santiong residents, including the former major, Syamsir Andili, have cited an additional reason for the Santiong House being the site of the Wallace house. They have claimed that the remnants of an old wall on the southern side of Jalan Puasa, opposite the Santiong House, are evidence of a Portuguese fort in their attempt to verify Wallace's clue, "*just below my*



Paul Sochaczewski beside remnants of an old Dutch wall in front of what were European houses along Jalan Juma Puasa (Nicholas Hughes, 2019)

house is the fort, built by the Portuguese". Marzuki did not support this claim. Importantly, Marzuki and Andili did not examine or comment on whether Fort Oranje could be considered as being *just below* the Santiong House.

Our research does not provide any evidence of a Portuguese fort in this area. Old maps, before Wallace's time, show only one military-style structure in the Santiong area, the *burgerswache* (civil guardhouse) on the southwest corner of Jalan Merdeka and Jalan Juma Puasa.

Some remnants of an old wall still exist on the southern side of Jalan Puasa. The wall is about two metres high and 50 cms thick – much too flimsy to be a fort! De Clercq explains the origin of such walls, "... *the white walls surrounding the (European) compounds ... are a real Old Dutch custom, adopted from our ancestors and still observed.*" ⁽⁴³⁾ (Interestingly, Wall Street, the financial district in New York, is so named after walls that surrounded Dutch houses when Manhattan was the Dutch colony of New Amsterdam.) The team concluded that this wall is simply a stone wall marking the perimeter of the European houses, a view endorsed by Rinto Taib. ⁽⁴⁴⁾



Jalan Nuri was renamed Jl ARW in 2008 and, again, Jl Juma Puasa in 2010 (Nicholas Hughes, selfie, 2009)

Recognition of the Santiong House as the Wallace House Site

Following the *International Conference on Alfred Russel Wallace and the Wallacea* in 2008, the Ternate city council recognized the Santiong House as the site of Wallace's house. ⁽⁴⁵⁾ The Conference recommended that a museum, *Observatorium Wallace*, be constructed on the site. Mayor Syamsir Andili renamed Jalan Nuri, the street on which the Santiong House is located, Jalan Alfred Russel Wallace. Mayor Burhan Abdurrahman, who took office in 2010, changed the name of the street again to Jalan Juma Puasa after the family of a prominent freedom fighter during



Lorong A. Wallace with mural of Wallace and his assistant, Ali, on wall of the Santiong House (Nicholas Hughes, 2019)

the Indonesian War of Independence who had lived in the Santiong area. This was a council decision based on local opposition to the street being named after a foreigner rather than a prominent local figure. The *Observa-*

torium Wallace made no further progress. An alley (*lorong*) off Jalan Juma Puasa on the corner of the Santiong House was named Lorong A. Wallace.

Until recently, visitors asking for Wallace's house are usually shown to the Santiong House and photographed next to the cement column and concrete cap over the old well behind the house.

Doubts about the Santiong House - Another Location?

Niizuma, and Marzuki & Andili's conclusions, based on their limited investigation of old wells and the anecdotal account of the Japanese engineer, would have been compelling if there were no other old deep wells in the area.

Maulana had reservations that the Santiong House should be proclaimed the site of Wallace's house without further evidence, "*There is a need for strong evidence if foreigners (the international community) are to support a Wallace museum project.*"⁽⁴⁶⁾

Significantly, Maulana observed that the dimensions of a traditional village house, a *fala kanci*, are normally about 8 x 15 meters (about 26 x 50 feet), whereas Wallace's house was 40 x 40 feet (as per his diagram page 21). Maulana suggests that Wallace did not live in a traditional village house but in one constructed for Europeans using traditional building techniques. Moreover, he had doubts whether a house of those dimensions would have fitted onto the Santiong block (at least, as it is currently configured).

Beccaloni—2012

In 2012, Beccaloni (see Foreword and Bio Sketches) raised doubts about the Santiong House as the site of Wallace's house.

He observed, "*A house owned by a Chinese family has been identified by some as the house, but it has the wrong orientation to the mountain, is too far from the fort, and the front garden is too large. We used the landmark of the fort to orientate ourselves and found a plot across the road and up-hill of the fort which is about the right size as the one that Wallace's house would have occupied (his house was 40 feet in width and had a garden on either side of it). The width*

is of great relevance, because plots of land on which houses are built tend not to change in size over time. This plot is now occupied by a new two storey building owned by Adira Finance. It will probably never be possible to be 100% certain whether this is the actual site of the house, but we feel that we may be a step closer to finding the Wallace holy grail. (Beccaloni, 2012a)

Beccaloni (2012b) reasoned that an area near the southwest bastion of Fort Oranje just behind Fort Oranje would correspond more closely with Wallace's statement that the fort was *just below* his house.

Private dwellings were not permitted along Jalan Merdeka where the Oranje Field military compound was and is still located. This limited Beccaloni's proposal to a site between Jalan Pipit and Jalan Juma Puasa. He proposed the block, currently occupied by PT Adira Dinamika Multi Finance, as a possible site for the Wallace House.

One important issue remained, however: that Wallace said he had a deep well in his garden. Beccaloni was unsure whether any such wells existed in the area he had proposed. He thought that the apparent lack of one was, nevertheless, not a sufficient reason to discount the area near the fort as being a possible location for the Wallace house.

It wasn't until Paul Whincup and colleagues conducted a census to locate all old wells in the Santiong neighbourhood in 2019, that they discovered an old deep well in a house near where Beccaloni had suggested that Wallace's house could have been.

Clinching Evidence - Discovery of the Oranje Site Well

Whincup—2019

Whincup found Beccaloni's proposal persuasive but observed that it was not supported by evidence of an old, deep well. As a hydrogeologist, he conceived of conducting a census of all old wells within Kelurahan Santiong, and of examining how their locations corresponded with the full set of Wallace's clues.

In January 2019 Fiffy Sahib and Muhdi Aziz (see Acknowledgements) door-knocked every house in Santiong to enquire about the presence of old wells. Seven old, deep wells including the Santiong House well were identified.

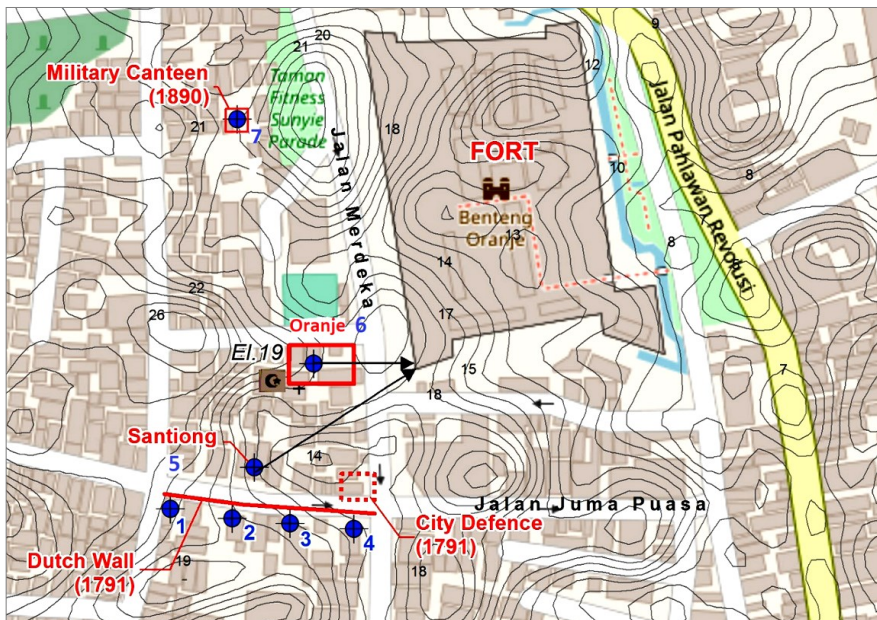
One well was in the military Oranje Field and can be disregarded as private houses were not permitted here. Four wells were on blocks of land along the southern side of Jalan Juma Puasa, opposite the Santiong House, where Europeans had lived, including the block with the rem-



Well dating from the early 17th century on *Groot Zee bolwerk*, the south-east bastion, of Fort Oranje (Nicholas Hughes, 2019)

nants of the old Dutch-style wall. As we have already established, Wallace did not live in this European quarter. So the four old wells at these sites can also be excluded.

An exciting discovery was an old, deep well on a block of land on the southern corner of Jalan Pipit and Jalan Merdeka that Whincup named the Oranje Site. This well was a prime contender for the site of the Wallace House, and conformed to the general area that Beccaloni had proposed.



Location of the seven old wells identified during the study, superimposed on contour map (Paul Whincup)

Whincup then examined all wells, excluding the Oranje Field (military) well. Where possible, he took measurements to see how they conformed to Wallace’s description of “a deep well supplied me with pure cold water.” Key parameters were depth (*deep*), salinity (*pure*), and temperature (*cold*). A fourth parameter was included, *age and mode of construction*.

Age and mode of construction of wells: Old wells in Fort Oranje, some dating back to the time of construction of the fort in the early 17th century, provided a reference point. Some of these wells remain open and can be observed internally.

Most domestic wells, on the other hand, have been capped with concrete and an electric pump installed so it was only possible to examine them internally by obtaining permission from the owners to open the wells.



Whincup taking measurements of a well in what was a European house on Jalan Juma Puasa (Paul Whincup, 2019)



- | | | |
|------------------|------------------|-------------------|
| 1 ARW House Site | 3 Lorong Wallace | 5 Jln. Juma Puasa |
| 2 Jln. Pipit | 4 Santiang House | 6 Jln. Merdeka |

The Oranje Site (1) is about 60 m from and facing Reael Bolwerk, the southwest bastion of Fort Oranje (Paul Whincup)

Of those wells observed internally, their diameter was about 1.2 meters indicating that they had been dug by hand using the age-old technique of shinning up and down the well with feet on one side and back on the other. The memory of residents did not shed any light on when these wells had been dug – long before their time!

Ternate experiences frequent earthquakes especially when the volcano is active. The volcano has erupted at least 45 times since records began in 1530. ⁽⁴⁷⁾ Without lining, wells can collapse internally given the permeable volcanic soil through which they are dug. All wells examined were lined with volcanic rock bound together with cement/lime and stabilized with a coating of cement grout like those in Fort Oranje. The Santiong House well had been capped earlier and was not examined internally. Whincup was confident that all wells observed could be considered as ‘old’.

Box 5. Hydrology of Volcanoes (After Whincup)

The Gamalama volcano (1,715 m) dominates the island of Ternate promoting high rainfall and permeable volcanic alluvium soils. Rainfall is usually much higher on the upper slopes of volcanoes. In the mid-slopes, groundwater discharges as springs and can be gravitated to lower elevations for irrigation and domestic use. On the lower slopes, wells from sub-surface aquifers yield potable groundwater. For reasons of hydrogeology, the deeper the water table, the higher the temperature of the water in a well. In the time of Wallace, before mechanical drilling, Ternate relied on springs on the upper slopes and hand-dug wells lower down for its water supply. The nearer a well is to the sea-front, the higher the salinity of the water.

Depth of wells: The depth of the Santiong well was 13 metres while the Oranje Site well, being at a slightly lower elevation, was 11.6 metres.

Purity of water: The drinking quality (salinity) of water in the wells was measured. ⁽⁴⁸⁾ All old deep wells examined had water of *pure* drinking quality, i.e., very little or no salinity.

Temperature of water: The water in all wells was consistently of 28°C. Undoubtedly Wallace would have found water, even at this temperature, refreshing in the tropical heat and humidity of Ternate.

The Oranje Site

The location of the Oranje Site corresponds closely with Beccaloni's proposal that the Wallace house was on Jalan Merdeka between Jalan Pipit and Jalan Juma Puasa.

The owner gave Whincup permission to open the concrete cap over the well to take measurements and study its internal structure. The well was found to be 11.6 meters deep with the water at 11.0 meters; the water was of low salinity and temperature 28°C. The internal lining was of typical, old construction—volcanic rocks loosely cemented with lime/concrete similar to wells within Fort Oranje dating from the 17-18th centuries.

A family member informed Whincup that the well had existed long before their grandfather's time – it would have been at least 100-150 years old—and that earlier, the well had been behind the original house. He



Looking down Jalan Pipit towards Fort Oranje. The existing house on the Oranje Site has an old, deep well. The wall of the fort is just below the house in the background, behind the motorbike passing along the road.

(George Beccaloni ©, 2019)

also informed that, originally, the well had a trestle, crossbar and pulley for drawing water, and that this and the Santiong House well were the only two wells from which the Santiong community could draw water.

The Oranje Site block is 850 m² with a frontage of 17.6 m on Jalan Merdeka overlooking the fort. This width would have been ample to accommodate Wallace's house of about 12.2 x 12.2 metres with some garden on each side (unlike the Santiong block, as noted earlier).



The lower block of the Oranje Site where Wallace's house most probably stood. The well is within the house above the fence and below the Mosque.

Do the foundations of Wallace's house still exist on this block?

(George Beccaloni© 2019)

The block has since been subdivided. The lower block, closer to the fort, formerly had a house facing the fort according to the present owners. The existing well is now within the house on the upper block. Thus, the well would have been about 10 metres behind where the back verandah of the earlier house on the lower block was situated.

Wallace does not inform where his well was relative to his house. But wells are normally behind houses, not at the front, so it makes sense that his house was on the lower block facing the fort with the well at the back of the house.

No evidence of the earlier house remains but an archeological dig on the lower, vacant block might reveal foundations that correspond with the dimensions of Wallace's house.

Examination of Wallace's Expression, "just below"

Finally, we examined Wallace's writings to try to understand his use of the expression, *just below*, as he applied it to the location of the fort relative to his house. A review of his writings shows that he uses this expression frequently—we counted at least 39 times—when describing geographical features and morphological characteristics of specimens. ⁽⁴⁹⁾

Synonyms for the word, *just*, are *exactly*, *precisely*, *directly* or *very close*. The front verandah of a house on the Oranje Site would have looked *directly* towards the fort about 60 metres away (*very close*), whereas a house on the Santiong Site would have been 135 metres from it. The southwest bastion of Fort Oranje is *below* both the Santiong and Oranje sites, but a house on the Santiong Site would have faced south, not *directly* towards the fort. A better view of the fort from the Santiong House would probably have been from its back verandah.

Advocates for the Santiong House, have argued that there was a Portuguese fort *just below* Wallace's house. As discussed on page 37, our research indicates there was no such fort at this location—rather, the existing walls are remnants of walls that had earlier surrounded the old European Quarter.

The team concluded that Wallace's use of the expression, *just below*, confirms that the Oranje Site, rather than the Santiong House, was the site of Wallace's House.

The results of the study, comparing the Sultan's House and the Santiong House sites and the Oranje Site, are summarized in Appendix 2.

Announcement of the Discovery of the Oranje Site

The former Mayor of Ternate, Burhan Abdurrahman, received the study team on 2 September 2019 during which Whincup informed the Mayor of the finding that the site of Wallace's house had been identified conclusively, and proposed that a replica of Wallace's original house be built on the site as a Museum. The Mayor accepted the conclusion of the study and supported this proposal.

The City of Ternate was hosting the Indonesian Creative Cities Conference and Festival, 2-7 September 2019, at that time. As part of the Conference, the Mayor convened a workshop on 3 September 2019, at the initiative of Rinto Taib, Curator of the Spice Museum, in which Whincup related the discovery of the site of the legendary house of Wallace. This was followed by a Press Conference in which the findings were announced publicly.



Rinto Taib speaking at the press conference, together with Paul Spencer Sochaczawski, Paul Whincup and Nicholas Hughes

Conclusions and Further Investigations

Whincup concluded that the block on the southwest corner of Jalan Pipit and Merdeka is the most likely site of Wallace's house. The location of the Oranje Site together with its deep well matches Wallace's description most convincingly when all of his clues are considered together.

Whincup's examination of the antiquity of wells in the Santiong district provides convincing evidence that the wells investigated are indeed 'old' – even before the time of Wallace. Their design and mode of construction are similar to those within Fort Oranje dating from 1607. The Orange site well was 'old', 'deep', had (almost) 'pure cold water' and the fort was 'just below' the house. It met Wallace's clues most convincingly.

A search of Dutch archives might reveal more information about where Wallace lived in Ternate:

- Did the Resident, Casparus Bosscher, and/or the Police Magistrate record Wallace's address when he reported to them after securing a house from his Chinese landlord with the aid of van Duivenbode?
- A search of land ownership records might reveal who owned the land at the Santiong House and Oranje Site around the time of Wallace in the 1860s.
- Wallace's writings indicate that he was in Ternate at the end of 1860 when the 1860 census was taken (assuming that it was taken as per the schedule that de Clercq indicates). Was Wallace recorded in the census by name and address?

An archaeological dig of the currently vacant block at the Oranje Site might reveal something about the original foundations of the house. As Wallace states, "*the walls were of stone up to three feet high ... the floor is of stucco.*" Some remnants of these foundations might still exist corresponding with the dimensions of the house that he describes.

Are there any descendants of Ali 'Wallace' in Ternate or Halmahera? Paul Spencer Sochaczewski has attempted to find Ali's grave and locate descendants in Ternate and the region of North Maluku but so far without success. ⁽¹⁵⁾ Further enquiries could be made.

Commemorating Wallace and Ali

Professor Sangkot Marzuki writes that the site of Wallace's Ternate house is an important science history heritage, and advocates that it be secured as a protected heritage site.

Given its national and international significance, a replica of the house, ideally on the Oranje Site, would be a valuable educational facility and tourist attraction. It could house a museum with exhibits explaining the tremendous intellectual achievements that Wallace made in Indonesia – the theory of natural selection, the Wallace Line, the beginnings of evolutionary biogeography, and his work in documenting Indonesian biodiversity.

Ali's little-known story could be publicised and acknowledged as a significant contribution to Wallace's discoveries. The museum could pay tribute to Ali, Wallace's 'faithful companion', who assisted him in making his vast collection of specimens. It could be argued that, without Ali, Wallace would have not achieved these collections and identification of so many species new to science.

The Faculty of Architecture, Khairun University, Ternate, could design and build a replica of the house. This would be an important addition to the Indonesian Heritage Towns Program and a tourist attraction both local and international in Ternate.

Ternate is recognised as the 'point-of-origin' of the historical spice trade and warrants UNESCO Heritage Listing. Recognition of Wallace and his achievements, in the form of a museum, would be an important contribution to this listing.

Endnotes

All references to Wallace (1869), *The Malay Archipelago*, in this book are to the 1986 edition, Oxford University Press, Singapore.

The names and dates of the reigns of rulers (*Kolano/raja*) and sultans of Ternate are from Amal (2009), *Lampiran 1. Daftar Para Kolano dan Sultan Ternate*, (App. 1. Rulers and Sultans of Ternate), pg 391.

1. Wallace (1869), pg 316.
2. Ammar & Siokona (2003) provide detailed accounts of the origins of the town of Ternate and of its early rulers.
3. Amal (2009), as noted above.
4. Wallace (1869), pg 315.
5. Giles (1999), pgs 363-64.
6. For further information concerning nutmeg and the Banda islands, see Hanna, Willard A., 1991.
7. Mann (2004), pg 80.
8. Egerton (1815), pg 344.
9. George Beccaloni, 2018, *Chronology of Wallace's Travels in the Malay Archipelago*, <https://wallacefund.myspecies.info/content/chronology-wallaces-travels-malay-archipelago> (accessed 7 July 2022).
10. George Beccaloni, 2013, *Wallace's Collections*, <https://wallacefund.myspecies.info/wallaces-specimens/> (accessed 12 April 2022)
11. For a Full Set of Wallace's Published Writings, see *The Alfred Russel Wallace Page*, <https://people.wku.edu/charles.smith/wallace/writings.htm> (accessed 7 July 2022)
12. For the full text of Wallace's *Ternate Essay*, see *The Alfred Russel Wallace Page*, <https://people.wku.edu/charles.smith/wallace/S043.htm> (accessed 7 July 2022).

See also Appendix 3: *Principal Elements of Wallace's Theory of Evolution by Natural Selection* (author provided).

13. For the text of the *On the Zoological Geography of the Malay Archipelago*, see *The Alfred Russel Wallace Page*, <https://people.wku.edu/charles.smith/wallace/S053.htm> (accessed 7 July 2022).

14. Wallace (1905) Vol 1, p. 382, cited in Van Wyte, 2015, pg 155, fn 14.

15. For a full account regarding Ali see: Sochaczewski, Paul Spencer (2021). "The Search for Ali". <https://www.sochaczewski.com/2018/01/30/the-search-for-ali/> (accessed 28 April 2022).

16. Wallace refers twice to Ali marrying and having a family in Ternate: in a letter to Samuel Stevens from Ceram on November 26, 1859 (Wallace 1859b); and, in his autobiography (Wallace 1905).

17. Barbour mentions meeting Ali in three of his publications including his 1943 autobiography, *Naturalist at Large*, where he wrote the most detailed account: *Here came a real thrill, for I was stopped in the street [in Ternate] one day as my wife and I were preparing to climb up to the Crater Lake. ... We were stopped by a wizened old Malay man. I can see him now, with a faded blue fez on his head. He said, "I am Ali Wallace". I knew at once that there stood before me Wallace's faithful companion of many years, the boy who not only helped him collect but nursed him when he was sick. We took his photograph and sent it to Wallace when we got home. He wrote me a delightful letter acknowledging it and reminiscing over the time when Ali had saved his life, nursing him through a terrific attack of malaria. This letter I have managed to lose to my eternal chagrin.*

18. Professor Dr Sangkot Marzuki, MSc, PhD, DSc, Executive Director of The Wallacea Foundation (Indonesia), President Indonesian Academy of Sciences, and founder of the Eijkman Institute for Molecular Biology, Jakarta.

Syamsir Andili, Mayor of Ternate, 1996-2010, and a 'Wallace enthusiast'.

19. Maarten Dirk van Renesse van Duivenbode (1804-1878) was a wealthy merchant who, Wallace informs, was *generally known as the king of Ternate. He was a very rich man, owned half the town, possessed many ships*

(in fact, three schooners), *and above a hundred slaves*. Duivenbode held civil positions within the European community variously described as Captain of the Citizens, Commander, and Major. Amongst his enterprises, he exported bird-of-paradise plumes.

20. Casparus Bosscher was Resident of Ternate, 1857-59, and an amateur botanist. He noted Ternate's economic decline and watched it get worse in subsequent years despite his attempts to promote trade and agricultural production (Heather Sutherland, 2021).

21. Wallace (1869), pg 313.

22. *Op sit*, pg 313.

23. Frederik Sigismund Alexander de Clercq (1842-1906) was the Dutch Resident of Ternate, 1885-89. De Clercq is recognized as a progressive administrator. For example, he is credited with having warned that overhunting of birds of paradise could lead to their extinction.

24. In this context, Wallace appears to be using the word 'Sirani' to refer to Christians of mixed descent.

25. Wallace (1869), pg 316.

26. Hanna & Alwi (1990) provide an extensive bibliography including many early Dutch sources but they do not provide footnotes referencing specific details. So, unfortunately, it is not possible to identify the source of their statement that Fort Oranje was built over an earlier Portuguese fort.

27. De Clercq (1890), pg 9.

28. Sochaczewski (2017), pg 226, fn 241, observes, *Wallace is wrong. The fort he saw in 1857 was constructed by the Dutch in 1611; it was an important defensive structure overlooking the bay of Banda Neira. Then, and now, it's called Fort Belgica; at that time "Belgium" was used as the Latin name for the whole of what are now the Netherlands and Belgium. The Dutch built Fort Belgica in 1611 to replace the earlier nearby Dutch-built Fort Nassau (1609). It was Fort Nassau that was built over the foundations of an earlier Portuguese fort (1529) but had been abandoned by the Portuguese during its construction due to hostility of the Banda people.*

29. de Clercq (1890), various references to Wallace, pgs. 32, 37, 38.
30. Wallace (1869), pg 317.
31. De Clercq (1890), pg 37.
32. Ibid, pg 22.
33. Per Com: Rinto Taib, Ternate, September 2019. We do not know of any evidence that these notes actually exist.
34. Per Obs: Whincup and Hughes, September 2019.
35. Beccaloni (2018), *Chronology of Wallace's Travels in the Malay Archipelago* (op. cit).
36. Per Com: Beccaloni, November 2019.
37. Niizuma (1997), Chapter 9, pgs 221-240.
38. Kakichi Uchida had originally translated *The Malay Archipelago* into Japanese in 1931 under the title (南洋 / *Nanyou* (South Seas/Micronesia). In 1942, he revised this translation correcting some terminology as well as renaming the book 馬來諸島 / *Marai Shoto* (*Malay Islands or Archipelago*) (ref: National Diet Library, Japan.)
Uchida was the 9th Governor-General of Taiwan, September 1923 to September 1924, and a politician who wrote extensively on communications, security, and healthcare (per. com. Naoko Misono).
Niizuma also translated Wallace's *The Malay Archipelago* into Japanese, Takuma Syobo, 1997.
39. During his visit in 1980, Niizuma was accompanied by Kazuo Umno, insect photographer, Setsuko Haneda, researcher on animals and translator, and Tatsuhide Matsuoka, picture book writer. In 1988, he was accompanied by Yoshiyuki Tsurumi and Yoshitaka Murat.
40. Niizuma (1997), pgs 228-231.
41. Op sit, chapter 9.4.
42. The *International Symposium on Alfred Russel Wallace and the Wallacea, 2008*, was held to commemorate the 150th anniversary of Wallace's historic Ternate paper on evolution and to celebrate Indonesia's

biodiversity. A pre-conference seminar was held in Ternate prior to the Symposium in Makassar, 10-13 December 2008.

43. De Clercq, 1890, pg 13.

44. Per. com., Rinto Taib, February 2019.

45. Munasri: *Where is the House of Wallace?* (in Indonesian), GEOMAGZ, vol. 6 no. 3, p 76, September 2016.

46. Ibrahim Maulana, Faculty of Architecture, Khairun University, Ternate, quoted in Dody Hidayat & Budhy Nurgianto, "*Mencari Tapak Wallace di Ternate*", (Searching for the Site of the Wallace House in Ternate), *Majalah Tempo*, 15 October 2017.

47. See Dan Quinn, *Gamalama, Gunung Bagging*, <https://www.gunungbagging.com/Gamalama/> (accessed 11 January 2021).

48. Electrical Conductivity (EC - micro mhos/cm). Drinking water quality should be below 500 mg/l total salts (equivalent to about 750 EC). It should also be clear with low turbidity.

49. See Wallace Online, <http://wallace-online.org/> (accessed 1 December 2020).

50. Information on the origin of Fort Tolukko was provided by Antonio Campo López based on his research of Portuguese and Spanish records (Campo López A.C. 2021). Toluco (Spanish) was a place where people from Tolo, on the east coast of Halmahera, had settled long before the arrival of Europeans. An opening in the reef existed at this village. Portuguese records of the 16th century mention Toluco as an important village but never as a fort.

Toluco acquired strategic importance when the Dutch began construction of Fort Malayo in 1607. In 1611, Spanish Governor Juan de Silva commanded an expedition to expel the Dutch and founded fort *San Juan de Toluco*. But the offensive failed and the fort was abandoned to the Dutch in 1612, who renamed it *Hollandia*, and rebuilt the structure that exists to this day. Sometime later, the name of the fort reverted to Tolukko. Sultan Kaicil Tolukko (r. 1692-1714) used the fort as a fortified residence, and probably acquired his name, Tolukko, from that of the fort.



Map 5: Forts of Ternate (Google Earth, annotations Nicholas Hughes)

Appendix 1—Forts of Ternate (see map on page 57)

Principal Forts

Fort Tolukko ⁽⁵⁰⁾: at Dufa Dufa; Dutch fort of Spanish origin built in 1611; known as *San Juan de Toluco*; takes its name from the village of Toluco;



Fort Tolukko (Nicholas Hughes)

built by the Spanish to oppose the Dutch at Fort Malayo; abandoned in 1612 when their offensive against the Dutch failed; taken over and rebuilt by the Dutch; renamed *Hollandia* and later, Tolukko; Sultan Kaicil Tolukko (r. 1692-1714) used the fort as a fortified residence, and possibly acquired his name, Tolukko, from that of the fort.



View from the ramparts of Fort Tolukko, with the islands of Tidore and Makian in the volcanic island chain to the south of Ternate (Java Lava)

Fort Kastela (1522, Portuguese): Situated on the southwest of the island at the village of Gam Lamo; built as the main stronghold of the Portuguese near where the palace of the sultans was originally located; known as *Sao Joao Batista* (Saint John the Baptist) by the Portuguese and, later, *Nuestra Senhora de Rosario* (Our Lady of the Rosary) by the Spanish (1606-63), and *Gamalama* by the Dutch/Ternatenese (from 1663) after the village where it is located. In ruins; the local government has plans for its renovation. The fort contains a monument with four faces commemorating Sultan Babullah's eviction of the Portuguese from Ternate in 1575.



Monument at the site of Fort Kastela commemorating the eviction of the Portuguese from Ternate in 1575. Note the clove bud on top of the monument (Fifty Sahib/Nicholas Hughes)

Fort Kalamata (1540, Portuguese): Situated east of Fort Kastela facing Tidore; known locally as *Kayu Merah* (Red Wood Fort); built initially by Portuguese to repel Spanish attacks from Tidore; rebuilt by Spanish and known as *Santa Lucia de Calamata*; fought over by Spanish and Dutch until departure of Spanish in 1663; reconstructed.



View from Fort Kalamata, with Maitara Island in foreground and Tidore behind, as depicted on the Indonesian Rupiah 1,000 note (Java Lava)



Visitors on the wall of Fort Kalamata (Java Lava)

Fort Oranje (1607, Dutch): Construction began in 1606, probably over an earlier local fort; initially named *Fort Malayo* and, in 1609, renamed *Fort Oranje* after the House of Orange-Nassau. Stronghold of the Dutch/Ternatense while contesting the presence of the Spanish in Ternate at Fort Kastella until the Spanish departure in 1663. Under renovation as a historic site.



Entrance to Fort Oranje (top left)
 Children on the ramparts of Fort Oranje (top right)
 Canon on the northwest bastion with Mount Gamalama in the background (left)
 (Nicholas Hughes)



Painting of Sultan Mudaffar, r. 1935-2015, in the Kadaton (palace)



View from the Kadaton towards Halmahera.

Minor Forts

Fort Kota Janji (1522, Portuguese):

At Desa Fitu on the south of island; occupied by the Spanish and known as *Fort Santo Pedro e Paulo de Don Gil* (Saint Peter and Paul); later (known as *Fort Kota Janji* (Place of Promise) where Francisco Serrao and Sultan Bayan Sirullah, alias Bolief, agreed to host the Portuguese in 1512; restored in 1994; protected as a historic site.



Fort Kota Janji (Ternate Tourist Agency)

Fort Talangame (17th century, date uncertain, Spanish):

just north of Fort Kalamata to protect the nearby Port Bastiong, the main landing place for sailing ships (and still the main inter-island port of Ternate); named after the village where the port is located; built over, scant remnants only remain.



The busy Port Bastiong where Fort Talangame was located (Java Lava)

Fort Takome (1607, Dutch): on the northwest of the island to enforce the collection of cloves; earlier known by the Dutch as *Fort Willemstad*; possibly built over an earlier Portuguese fort; remnants only remain.

Fort Santosa (date uncertain, sometime after 1607, Dutch): Located near the sultan's palace to protect the sultan (and possibly to strengthen the position of the Dutch vis-à-vis the sultan); named after the water source near the palace; known locally as *Fort Kota Nangka* (jackfruit city); remnants only remain.

Appendix 2: Comparison of Results - the Sultan, Santiong and Orange Sites

Wallace's Clues	Sultan	Santiong	Oranje	Remarks
A <i>Chinaman</i> owned Wallace's house	No—family of the Sultan	Not known	Not known	The Sultan House can be excluded as a contender for Wallace's house
Mode of construction: not dissimilar to native houses	No—original house still stands; does not conform with Wallace's description	Original building probably long ago built over	Original building probably long ago built over	The Sultan House can be excluded as a contender for Wallace's house
<i>Deep well ...</i>	2.4 m, shallow, square	13 m, deep, round	11.6 m, deep, round	Deep round wells were 1.2 m diameter, i.e., dug by hand.
Age of well	Old – open	Old—capped, not inspected internally	Old – opened, inspected; volcanic stone liners	Round well construction typical of old wells in Fort Oranje
<i>Pure cold water ...</i>	Shallow well, close to coast—brackish	Pure—higher elevation	Slightly saline—lower elevation	Water in deep wells was of drinking quality; temperature 28 ^o C.
<i>Five minutes walk to the market and beach</i>	No. More than 800 m	Yes—550 m	Yes—590 m	6-7 minutes @ walking speed of about 5 km/hour.

Continued ...

Wallace's Clues	Sultan	Santiong	Oranje	Remarks
<i>Just below (my house) is the fort</i>	No. Northern wall of fort is about 300 m south of this house.	Questionable - house faces south (not towards the fort) and is about 135 m from the fort	Yes - site is about 60 m from and faces the southwest bastion of the fort.	The location of the Oranje Site corresponds more precisely with Wallace's clue than the Santiong House site.
<i>No more European houses towards the mountain; close to town, yet with a free outlet to the country and the mountain</i>	No. This house is in Kampong Sio-Sia.	European houses on opposite side of the road.	No European houses, (as far as we know).	
<i>Surrounded by a wilderness of fruit trees</i>	No. Probably surrounded by village houses	Maybe	Quite possibly	There were orchards in the area of the Santiong and Oranje sites.
<i>The native town extends about a mile north-east (from the open area in front of the fort) with sultan's palace about the centre</i>	No, the Sultan's palace is about 400 m from this house	1.1 km to Sultan's palace	1.0 km to Sultan's palace	The native town is north of the open area in front of the fort (not northeast as Wallace informs).

Appendix 3: Principal Elements of Wallace's Theory of Evolution by Natural Selection (author provided)

- An animal population is generally static; numbers are constrained by food supply, predation, disease, etc. (Malthusian thinking).
- The *struggle for existence* operates on individuals – *the very young, the aged and diseased tend to die* whereas the *most perfect in health and vigour* tend to survive.
- Natural selection operates by weeding out the *weakest* individuals within a population.
- Characteristics of the *stronger*, that enable them to survive, are passed onto their progeny.
- Thus, the comparative abundance of a species, in the face of such *fortitude* (natural selection pressure), is due to differences (*variation*) in characteristics within a population in a given area (habitat, ecological niche).
- As a consequence, species are not fixed - varieties that are better adapted to their environment will eventually displace their parent species.
- The source of variation (causes of the appearance of different forms) are random; variation does not occur in response to the environment. (Wallace, unknowingly, foresaw the science of genetics).
- A variety cannot return to its original (species) form, as that form would be less competitive within its current environment.
- Hence, there is a progression and continual divergence, which regulates animal populations in a state of nature.
- This argumentation was then applied to explain the historical evolution of the 'tree of life' model and hence evolution itself.
- On *homeostasis*, (one of Wallace's other important, often overlooked ideas), *that nature always remains in balance within itself*.

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THE QUEST FOR THE LEGENDARY HOUSE OF ALFRED RUSSEL WALLACE IN TERNATE

“Wallace’s house in Ternate is the most important science history site in Indonesia”. It is legendary as the place from where Wallace sent his *Ternate Essay* on the Theory of Evolution by Natural Selection to Charles Darwin in March 1858. Wallace’s discovery is regarded as one of the most important scientific theories ever proposed.

This book relates the discovery of the site of Wallace’s house (on the corner of Jalan Pipit and Jalan Merdeka). It explores the history of Ternate in the time of Wallace. It also provides a brief history of Ternate up to and including the arrival of Europeans in the 16th century, and documents all the forts on the island.

Enjoy your visit, explore the history of Ternate and stand at the site of the legendary house of Alfred Russel Wallace.

