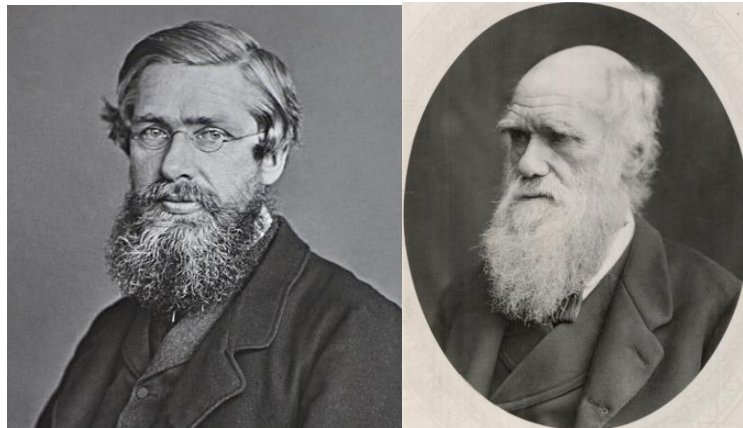


## **The Darwin-Wallace mystery solved**

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Alfred Russel Wallace (1823-1913), the English naturalist who spent eight years in Singapore and South East Asia between 1854 and 1862, conceived of evolution by natural selection independently of Charles Darwin. Wallace had a dramatic eureka moment while living on the island of Ternate in the Moluccas (now Indonesia). He wrote up an essay which he sent, incredibly, to Charles Darwin who had not yet published his own very similar theory conceived many years earlier. Wallace's essay was published together with an essay by Darwin in 1858. This was the first publication of the theory of evolution by natural selection which over the ensuing twenty years resulted in one of the greatest scientific revolutions in history and remains the unifying theory of the life sciences.

As is so common with history, Wallace's letter and essay no longer exist. His essay was dated "February 1858" from the island of Ternate. Darwin wrote a letter to a colleague on 18 June 1858 mentioning he had just been surprised to receive Wallace's essay "today" – with the amazing coincidence of the same theory. In later years Wallace often told the story of suddenly realizing the theory and sending his essay to Darwin "by the next post". There was then only a monthly mail ship service at Ternate. So it was assumed that the essay must have been sent to Darwin in March 1858.



A.R. Wallace

Charles Darwin

### **How the mystery began**

In 1972 a researcher named Lewis McKinney found another letter from Wallace to a friend named Frederick Bates that was sent on that March 1858 steamer. The letter still bore postmarks from Singapore and London which showed that it arrived in London on 3 June 1858- two weeks before Darwin said he received the essay from Wallace. Thus began the mystery- how could two letters from Wallace leave Ternate on the same steamer and travel along the same mail route back to London but Darwin received his two weeks later than Bates did? This mystery has led to numerous conspiracy theories. For example several writers have claimed that Darwin stole ideas from Wallace's essay during the time he kept the letter secret. But most other evidence suggests that Darwin received the letter when he said he did. So did Darwin receive the letter when he said he did, or not?

## **Here is what some writers have said about this mystery over the years:**

“This is the hardest story in science, and one day it is going to blow up” John Langdon Brooks, 1984

“a problem that is...essentially unresolvable” Barbara Beddall, 1988

“Exactly what happened next is a small nutlike riddle that science historians have never cracked. At its core is the issue of who deserves credit for one of the greatest scientific achievements in history” David Quammen, 1997

“one of the most persistent urban myths in evolutionary biology” Sandy Knapp, 2012

I was asked to write a biographical chapter on Wallace for a new Cambridge University Press encyclopaedia. In addition I am writing a book on Wallace in South East Asia. I decided to look into this mystery and see if anything could be found out. I initially assumed that it was impossible to solve since so many historians had examined it before. But it occurred to me that we really have no contemporary evidence of when Wallace sent the essay to Darwin, only his much later recollection that he sent it by the next post after writing it in February. That suggested that the essay was sent in March 1858. But this recollection from years later seemed to me not very reliable as evidence of what really happened at the time. The other evidence that Darwin received it on 18 June 1858 seemed more substantive. For example, all of Darwin's correspondence changed dramatically after that date. Since that side of the correspondence was all one really had to go on, it occurred to me to trace the letter from Darwin's end, rather than Wallace's.

If Darwin really received it on 18 June- how could it get there? It had come to his house in the countryside from London the day before, the 17<sup>th</sup>. I then found that a steamer arrived in England the day before, the 16<sup>th</sup> with mail from India and South East Asia. Surely this was not a coincidence! Wallace's letter was probably on that ship. I then had to trace back the remainder of the 9,240 miles of the journey from England, through the Mediterranean, across Egypt, to Sri Lanka, Penang, Singapore, Jakarta and so on. My colleague, the Senior research fellow on the Darwin Online-Wallace Online project, Dr Kees Rookmaaker, who speaks Dutch, was an invaluable help as he was able to check the ship arrival and departure times in the Dutch newspapers and sources for the Dutch East Indies as I had through the English newspapers. It was an exciting detective story, tracing the connections that mail batch took from London to South East Asia. Eventually our mail itinerary was completed all the way back to Ternate and we were astonished to find that there was an unbroken series of mail connections to Ternate- not in March as all other writers before had assumed, but in April 1858!

My further research has clarified why Wallace mailed it later than we assumed and many other parts of this famous, but misunderstood chapter in the history of science. First of all, we now know that Wallace was replying to an early letter from Darwin- and that letter from Darwin arrived in Ternate on the March steamer. We have assembled the first complete collection of all the surviving Wallace correspondence from Ternate and nearby islands. These reveal that he never replied to a letter on the same steamer which delivered it. Apparently the turn over time was too short. Therefore this is an additional reason to doubt that Wallace could have sent the famous letter to Darwin in March as so long assumed.

My book, tentatively entitled “Apocalypse now: Wallace, Darwin and the origins of evolution” is almost finished and I believe it completely revises the story of Wallace in South East Asia and how he really came to discover evolution here.

In addition to the continuing research and publication on *Darwin Online*- the most widely consulted history of science website in the world, we are preparing a new website on Wallace- *Wallace Online*, a website which aims to be the definitive and reliable source of Wallace's work. It will contain all of Wallace's books and article, as well as a complete collection of his specimens collected from South-east Asia, and much more such as a revised itinerary of his whereabouts during these years and his notebooks edited for the first time to modern scholarly standards. The website will be launched in 2013, the centenary of the death of Wallace.

Our article on the Darwin-Wallace mystery was published as: 2012 [A new theory to explain the receipt of Wallace's Ternate Essay by Darwin in 1858](#). *Biological Journal of the Linnean Society*.

It has been selected by the Faculty of 1000 as part of the top 2% of articles in biology and has so far been covered by [Nature News](#), [PhysOrg.comm](#), [Science daily](#), [The Daily Mail](#), and [TG Daily](#).