

THE TAMAN SHUD MYSTERY – OLD CASE, MODERN FORENSICS

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The identity of a man found dead early morning December 1, 1948 on Somerton Beach near Adelaide, Australia has become one of the most baffling cold cases in the country's history. The autopsy of the estimated 40-45 year-old "Somerton Man" (SM) indicated his death could not have been natural, with poisoning by barbiturate or a soluble hypnotic suspected, although no poison was detected. The case took a puzzling turn when a small scrap of paper was found in the man's watch pocket with the words *Tamam Shud* (Finished) printed on it. These are the last words of the Rubaiyat by Omar Khayyam.

A thorough police investigation produced no identifying information. SM's fingerprints, the wide publication of his autopsy photos, and a review of UK and US missing person reports produced nothing. His suitcase, recovered from the nearby Adelaide train station, also revealed no identifying information except for several items of probable American origins, including a double breasted jacked with featherstitching that at the time was made on machinery only present in the US.

His identity has remained a mystery for over 60 years.

We report the first major advances in the identification of SM since the 1940s and 1950s, using DNA analysis not available during the original investigation. Because permission to exhume SM has not yet been granted by the South Australian government, his DNA was not directly available for analysis. However, SM may have fathered a son named Robin. Robin's mother was tied to SM because her phone number was penciled on the back page of a copy of the Rubaiyat. The book was found to be the source of the scrap of paper in the man's pocket. Robin and SM share two rare genetic conditions that add significant weight to the hypothesis of a father/son relationship. Unfortunately, Robin passed away in 2009 and his DNA is unavailable, however, advanced analysis has been possible using his family's DNA.

The major advances we present in the analysis of SM's DNA are:

1. Use of genetic genealogy phasing tools to analyze Robin's DNA based on autosomal DNA testing results from his wife and their daughter (SM's assumed daughter-in-law and granddaughter).
2. Use of a novel mapping technique based on Robin's autosomal matches and their associated genealogies to visualize their geographical overlap. This has revealed American ancestry probably not associated with his maternal line, and that may provide clues to SM's family origins and ultimately his identity.
3. Application of chromosome matching to discover a possible genealogical connection to Thomas Jefferson.