

## 101 年世界南島學術研究計畫 成果報告

- 計畫類別：
- 世界南島研究碩、博士生論文田野補助案
  - 選送世界南島研究碩、博士生短期出國研修補助案
  - 世界南島研究國外學者訪台交流補助案
  - 世界南島研究碩、博士生論文可行性之文獻、資料蒐集補助案  
(含政府檔案、教會檔案、圖書館、博物館、田野調查等等)

執行期間： 101 年 8 月 31 日至 101 年 9 月 14 日

計畫單位/人員 (簽章)： 國立史前文化博物館

成果報告類型：  完整報告

附註：本人具有著作財產權之論文或研究計畫成果全文資料，授予南島學術研究計畫辦公室，得限計畫辦公室於教育部申請年度計畫或呈報成果時使用，以微縮、光碟或其他各種數位化方式重製後散布發行或上載網站，藉由網路傳輸，提供讀者基於個人非營利性質之線上檢索、閱覽、下載或列印。

中 華 民 國 101 年 11 月 27 日

「101 年世界南島（臺灣地區  
以外）國際學術研究、交流暨  
人才培育專案計畫：外國學者  
Valentin Frederique 補助案」  
結案報告書

申請單位：國立臺灣史前文化博物館

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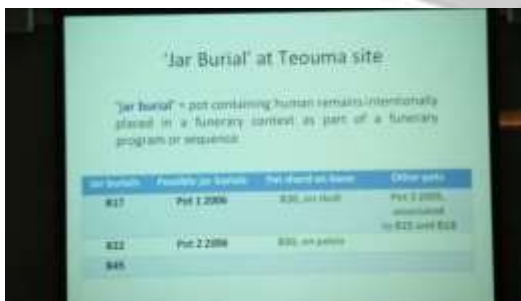
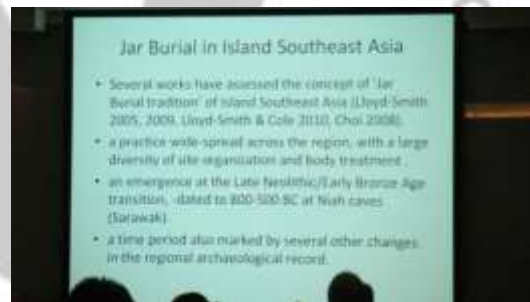
世界南島學術研究  
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## 一、Valentin 博士在臺行程介紹

Valentine 博士於 8/31 早上 6:30 左右抵達臺灣（源由與大致行程請參考附件 1），於接機後即送她前往中研院活動中心 check in，然後就會其他學者（如加拿大的 Kethleen LeBlanc）會合，再前往故宮參觀。

2012 0901-0903 「古代交換與殖民模式的跨地域比對」國際學術研討會

Valentin 博士於 9/1-9/3 之行程為參加「古代交換與殖民模式的跨地域比對」國際學術研討會，並於 9/3 發表「東南亞甕棺葬與 Lapita 文化之關係」(“Southeast Asian Jar Burial Tradition(s) and Lapita connections: a view from the 3000 BP mortuary remains from Teouma cemetery (Vanuatu)”)。



2012 0904-0906 「古代交換與殖民模式的跨地域比對」國際學術研討會會後行程  
(post-conference tour)

9/5: 與館長共進早餐、本館參觀、文化公園參觀、都蘭與舊香蘭遺址參訪



9/6: 八仙洞遺址及其工作站參觀、花蓮花崗山遺址參訪





9/7: 史前館演講:『東南亞甕棺葬與 Lapita 文化之關係(“Southeast Asian Jar Burial Tradition(s) and Lapita connections: a view from the 3000 BP mortuary remains from Teouma cemetery (Vanuatu)”)] 與參觀史前館人骨實驗室



2012 0908-0910 工作坊

9/8 (星期六) 工作坊 第一天: 認識遺址出土人骨與人骨重建



9/9 (星期日) 工作坊 第二天：如何辨別人骨的性別與年齡



9/10 工作坊 第三天：議題討論—『史前埋葬方法之相關研究 以法國田野考古人類學的研究方法來分析太平洋島嶼出土人骨 (““French methodology of Field Anthropology with an application to Pacific islands burial sites””)』



2012 0911-0912 與林助理研究員秀嫻之討論

9/11 如何辨別史前之骨髓炎



9/12 如何辨別史前的肺結核、火塘與埋葬關係（以臺南烏山頭遺址為例）



2012 0913 回臺北（中研院），並與人社中心考古學門邱副研究員斯嘉洽談未來合作相關事項

2012 0914 回法國

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## 二、演講摘要

1. 「甕棺葬於 Teouma 遺址 (“Southeast Asian Jar Burial(s) and Lapita connection”): Teouma 遺址屬於 3000 年前的 Lapita, 在這個遺址中, 所有墓葬皆以二次葬為主, 而且部份墓葬為置於陶罐中的頭骨 (且每個陶罐僅有一顆頭骨) (餘見 ppt 檔)。
2. 『Lapita 文化與生物考古學 (“A glimpse into Lapita Culture: some osteo-archaeological perspectives”)』: 本文基於「甕棺葬於 Teouma 遺址 (“Southeast Asian Jar Burial(s) and Lapita connection”)」一文, 進一步發展說明生物考古學在 Lapita 文化中之研究情形, 特別是陶器紋飾的比較、古病理學的研究與運用法醫科學所進行的砵部重建 (餘見 ppt 檔)。
3. 「墓葬研究 (“Anthropologie de terrain”): 在 Teouma 遺址發現的墓葬顯示, 其實 Teouma 遺址的墓葬多為二次葬 (許多人骨都不見頭骨與身體其他部位相連), 再者, 就墓葬之葬姿而言, 可以看出當地部份人骨經細綁再被置於墓穴中, 同時, 透過部份墓葬中的人骨出現下肢完全屈肢的情形, 亦可看出其原始葬姿 (未受擾亂) 之特殊性 (餘見 ppt 檔)。
4. 總而言之, Frederique Valentin 博士於此行中進行之演講, 乃以 Teouma 遺址出土人骨之體質人類學研究為主軸所進行的一連串系列性之演講兼工作坊。

## 三、成果自評

Frederique Valentin 博士自 8 月 31 日即來臺訪問, 其間陸續參加中研院主辦之研討會、史前館之行的一系列演講與工作坊。其間, Valentin 博士與國內學者、學生之間的互動非常密切, Valentin 博士離臺前, 甚至希望可以與中研院史語所或史前館的學者於未來進立長期合作計畫 (包括與臺灣學者進行考古遺址下土人骨研究的交流與合作研究) 或學生交流計畫 (使法國學生可以進一步認識臺灣考古與體質人類學的發展與研究)。因此, 基於 Valentin 博士於史前館期間與學者的互動情形, 以及其對於未來合作的期待性, 可以說此次文流補助案是非常成功的。



A glimpse into Lapita culture  
Some osteo-archeological perspectives



Frederique Valentin, CNRS,  
Universités Paris 1 et Paris 10, France



A glimpse into Lapita culture  
Some osteo-archeological perspectives

- 1- General comments on:
  - Geographical distribution
  - Timing
  - Way of life
- 2- Focus on aspects reconstructible with human remains:
  - Funerary practices
  - Diet
  - Physical activities and diet
  - Origins and descendance

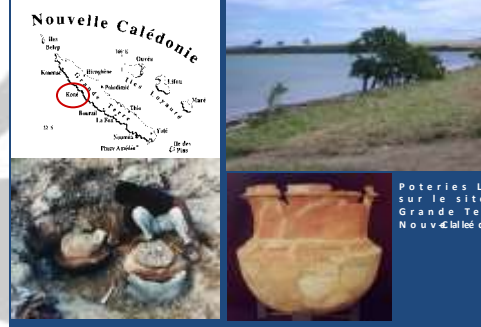
Human bones are unique direct witness

Lapita sites : geographical distribution and time period



Culture Lapita : endogène ou exogène ?  
Modèle du « Triple I » : Intrusion – Intégration – Innovation ?

Lapita is a locality name



Poteries Lapita sur le site Grande Terre Nouvelle-Calédonie

The Lapita pottery is the distinctive marker of the Lapita culture



Poteries Lapita de Nouvelle-Calédonie  
Collection Musée Néo-Calédonien

The Lapita pottery is the distinctive marker of the Lapita culture



Others Lapita items



Lapita settlement



Talepakemalai Lapita site, M...  
P.V. Kirch, 2000 Plan of the Nenumo Lapita site  
R. Green

Examples of Lapita settlement locations : in coastal environments



Site of Lapita, New Caledonia



Site of Nakasaga, Vanuatu

What were the resources they live on ?

Archaeological studies of marine and terrestrial animals and botanical remains give some answers while linguistic reconstructions suggest additional options

Subsistence strategies : exploitation of marine resources

Exploitation of shells to make ornaments and tools along with turtle and fish of various species



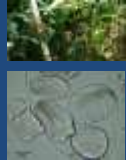
Subsistence strategies : exploitation of terrestrial ecosystems



Subsistence strategies : Domesticated animal husbandry

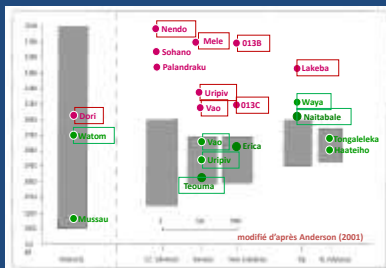


Subsistence strategies : horticultural practices ?



What about other facets of the Lapita culture ?  
What can we learn from human skeletal remains ?

Lapita burials and scattered human bones geographical distribution and dating



Where burials and scattered Lapita human remains occur

- Scattered human remains and burials have been found in open air locations or sites : in beach areas
- Scattered human remains and burials occur :
  - in or close to habitations and /or midden
  - and in location where domestic remains are rare

**Burials and scattered human bones found in midden deposits**

Example of Naitabale, Fidji, 2600 BP (Kumar et al 2004, Nunn et al 2007)

**Burials located at the border of midden**

Olo, Fidji, 2700 BP (Cochrane, 2003)

Uripiv, Vanuatu, Lapita (Bedford et al 2011)

**Burials located at the border of midden areas**

Cluster of babies interments, Uripiv, Vanuatu, Lapita infant burials (Bedford et al 2011)

**On an old settlement and at the border of the contemporaneous settlement**

Watom, New Britain, 2600 BP (Saville et al 2003)

**Human bones cluster close to settlement area**

Nouvelle Calédonie

Human bones uncovered by cyclone Erica in 2003  
2720 +/- 40 BP - 2870 +/- 40 BP  
(Sand et al, 2003; Valentin et al 2004, 2005)

**Human bones cluster close to settlement area**

Restes humains au jour à Alekyi à Nema, 2003  
2720 +/- 40 BP - 2870 +/- 40 BP  
(Sand et al 2003; Valentin et al 2004, 2005)

**Human bones scattered in habitation**

Mussau, Eloaua, Nouvelle Irlande, PNG, 3300 - 3200 BP  
Kirch et al (1989)

Ossements disloqués en contexte d'habitat, dans deux secteurs distincts :

- une mandibule, un occipital, un humérus, 7 dents isolées représentant des sujets adulte et immature,
- un pétreux et deux fragments de côtes dans un autre.

**Human bones scattered in or close to settlement**

Restes humains épars dans des zones de «

- Portent des traces de feu et des traces de décoration
- Généralement interprétés comme des restes d'habitation
- Parfois interprétés comme des dépôts secondaires
- Parfois interprétés comme des inhumations ou des sépultures

-Modifiés en outil, Tonga



Site first uses as graveyard : the Teouma (Efate, Vanuatu) example

The Teouma Lapita graveyard  
3 200-000 BP  
Bedford (2006, 2009, 2010)

- site discovered in 2003
- international collaboration (Vanuatu, Australia, New Zealand, etc.)
- 6 field campaigns
- 300m<sup>2</sup> excavated
- 68 mortuary structures identified

-oldest cemetery found in the Pacific  
 -largest number of individuals ever found in one Lapita group  
 -associated with settlers of the archipelago  
 -origins of the first settlers  
 -colonization strategies  
 -social dynamics  
 -health  
 -ritual behaviours  
 -diet  
 of an early Lapita group... and more colonizing group in a previously un...

What was found at Teouma (Efate, Vanuatu) site ?

- 9 inhumations of fetus
- 1 inhumation of adolescent
- 49 inhumations of adults
- 9 bone deposits, with 1 containing burnt bones

What was found at Teouma (Efate, Vanuatu) site ?

Babies were interred in a simple m...

The treatment of the adults and adolescent was more complicated, including a large diversity of original body position

And also in unnatural position, suggesting...

Were also found bone arrangements, showing disarticulations and bone falls by gravity, suggesting inhumation in a container

- Knee
- Elbow
- Wrist
- Knee and foot

and also objects associated to the



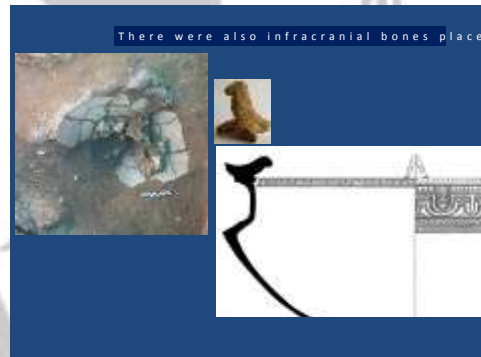
And finally none of the skeletons were complete

- Constant presence of:
  - hip bones
  - lumbar vertebrae
  - thigh bones
- Irregular absence of:
  - lower legs (few cases)
  - hand and foot elements
- general lack of bones of the upper part of the skeleton
- skull always absent (in articulation)

but presence of :

- isolated teeth (80%)
- hyoid bone (30%)
- hand bones (90%)

more complete individuals were => deliberate removals, some



What was the significance of these actions? What do they represent in terms of funerary practices?

First, these various actions can be ordered in a sequence which includes :

- A preparation phase
- An interment phase
- A commemoration phase

Second, this sequence coincides with the practices described by Lévi-Strauss (1907).

- this practice is found worldwide,
- but is particularly characteristic of Southeast Asia in ethnographies (Thomas, 1985, 1980, Metcalf)


More details can be found in Valentin et al 2010

**And one cremation case**

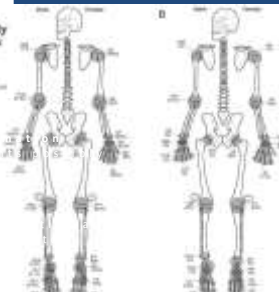
At Teouma, the body of an adult female dating to 2900 cal. BP was cremated, the remains were in secondary deposition in a shallow scoop. **This practice is not in contradiction with the practice described earlier, as it may be part of it.**

Bone assemblage features (Scott et al. 2010),

- > 620 grs, 430 fragments ranging from 9.5 to 0.5 cm long
- > high level of burning: calcined bones with evidence of warping, shrinkage, transversal curved parabolic fractures
- > no skull, infracranial skeleton only
- > no associated grave goods



**A Preliminary Report on Health and Disease in Early Lapita Skeletons, Vanuatu: Possible Biological Costs of Island Colonization**



**A = Osteophyte formation**  
(Remodeling of joint in response to repetitive overuse)

**B = Osteoarthritis**  
(pathological loss of cartilage of joints, osteoarthritis)

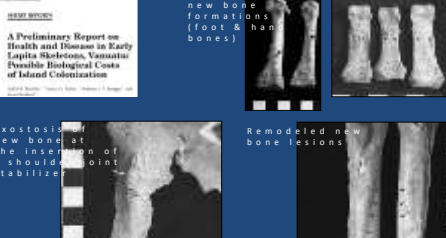
**A Preliminary Report on Health and Disease in Early Lapita Skeletons, Vanuatu: Possible Biological Costs of Island Colonization**



Néo-articulation pour le radius (dislocations répétées pendant l'enfance ?)

Fracture

**A Preliminary Report on Health and Disease in Early Lapita Skeletons, Vanuatu: Possible Biological Costs of Island Colonization**




new bone formations (foot & hand bones)

exostosis: new bone at the insertion of a shoulder joint stabilize

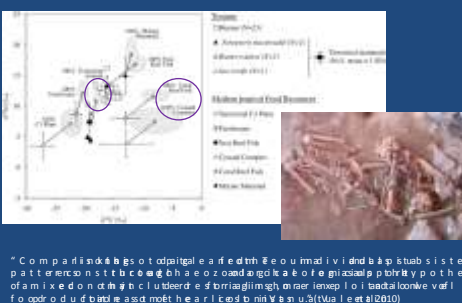
Remodeled new bone lesions

"Dental health, trauma and degeneration of joints suggest island life and lived a physically active life while on the island. The Teouma sample provides insights into the possible biological costs of island colonization and is applicable to other contexts where human migration demanded biological adaptation to ensure success."

**A Preliminary Report on Health and Disease in Early Lapita Skeletons, Vanuatu: Possible Biological Costs of Island Colonization**



**Lapita people, diet and environment**

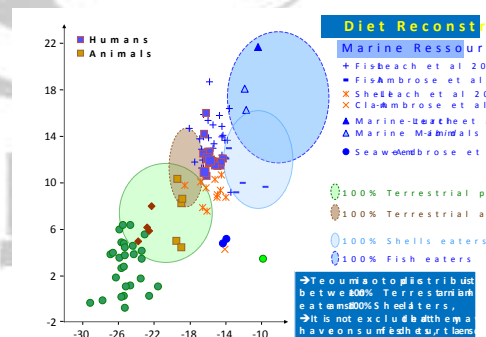
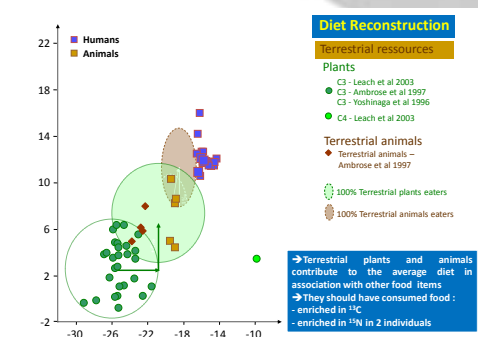


Map showing Lapita expansion routes from the Bismarck Sea to the Pacific Islands.

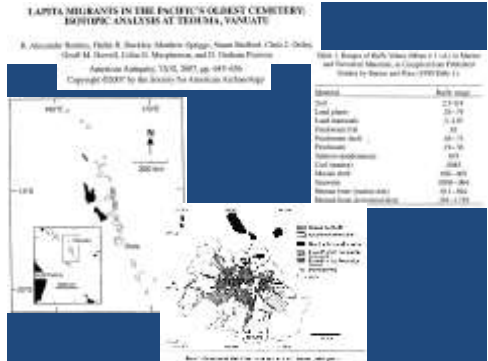
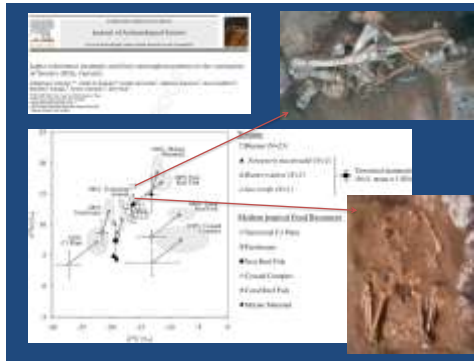
Human Invented Food Resources:

- Black Beef Hides
- Crustaceans
- Crushed Fish
- Human Meat

"Comparative isotopic analysis of Lapita and local subsistence patterns suggests that Lapita people were primarily hunters of a mixed diet of both terrestrial and marine resources." (Waller et al. 2010)





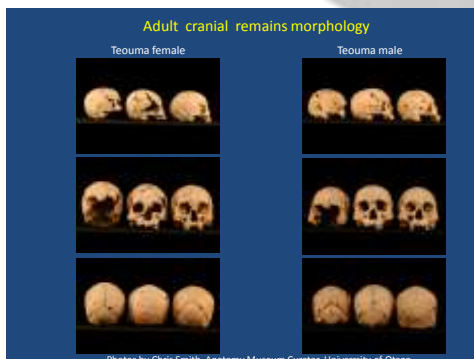
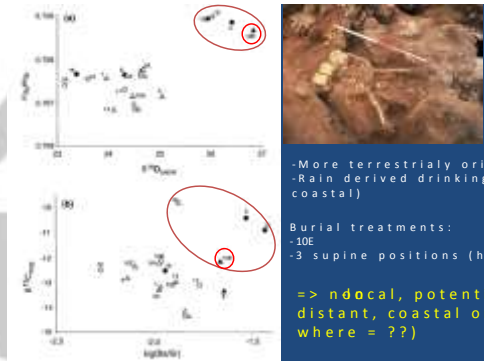


**LAPITA MILENARIUM IN THE PACIFIC'S OLDEST CEMETERY: ISOTOPIC ANALYSIS AT TEOHIMA, VANUATU**

R. Alexander Bentley, Patrick R. Buckley, Matthew Spriggs, Susan Stafford, Colin D. O'Brien, Geoff M. Shovel, Linda D. Mays-Gunton, and D. Tadhuis Prasanna  
 American Anthropologist 115(2), 2013, pp. 447-476  
 Copyright © 2013 by the American Anthropological Association

Burial	Age	Sex	Position	Site	Year(s)	δ15N‰	δ13C‰	δ15N‰	δ13C‰
1	Old	M	Prone	W. L. 1000	1011	19.17	19.8	19.17	19.8
2A	Old	M	Prone	W. L. 1000	1011	19.17	19.8	19.17	19.8
3	Mid	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
4	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
5A	Mid	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
6	Mid	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
7	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
8A	Old	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
9	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
10A	Old	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
11	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
12	Old	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
13	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
14	Old	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
15	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
16	Old	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8
17	Old	M	Supine	W. L. 1000	1011	19.17	19.8	19.17	19.8
18	Young	M	Supine	F. L. 1000	1011	19.17	19.8	19.17	19.8

Generally marine-based diet      Derived from local drinking water  
 Derived from basaltic (.704) and reef limestone (.709) soils

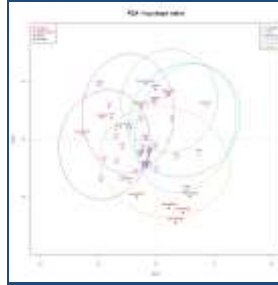


Adult cranial remains metric comparisons

754 modern skulls (Howells database) from Australia, Melanesia, China, Taiwan, Micronesia and Polynesia

Australia	Melanesia	China	Taiwan	Micronesia	Polynesia
101	110	125	47	57	314
	Total	Hainan Anyang	Atayal	Guam	Mokapu Maori Moriori Easter Island

Adult cranial remains analysis, FDA on neurocranium



Dispersion of the Teouma individuals indicates:  
 - A single very diverse population  
 - Or at least 2 less diverse populations

Cluster at the margin of the area suggests:  
 - Lost of part of the initial time  
 - Existence of an important connection with the Polynesian individuals

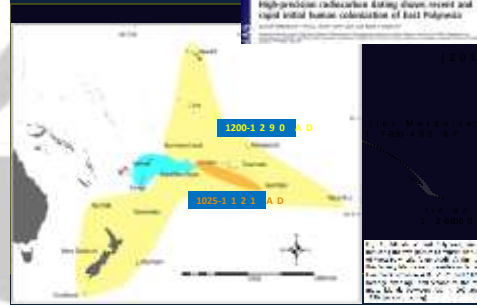
Teouma individuals position the Lapita individuals connection with the Polynesian individuals

Lapita people are Polynesian, Lapita people and Polynesian have same ancestors

However East Polynesia appears to have been first occupied later in time



And even much later ...



East Polynesia settlement

« This shorter chronology provides a robust explanation for the striking uniformity of the Polynesian culture, human biology and language » (Wilmshurst et al., 2011)



Merci de votre attention

世界南島學術研究  
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## Southeast Asian Jar Burial(s) and Lapita connection

### A view from the 3000 BP mortuary remains from Teouma cemetery (Vanuatu)

Frederique Valentin, CNRS, Universités Paris 1 et Paris 10, France



## Jar Burial in Island Southeast Asia

- Based on his spatio-temporal analysis of the Niah caves burials, L. Lloyd-Smith (2009) interprets this supraregional pattern as resulting from local evolutions of mortuary practices, involving **several jar burial traditions rather than just one**, expressing a single shared belief system as implied by Solheim's and Bellwood's networks or migration models.

## Teouma site in Vanuatu (c.3000 cal BP)

- is the only one to have provided **several dentate-stamped decorated Lapita pots enclosing human remains**.
- For Bedford and Spriggs (2007), one of these pots 'along with another containing a skull from Teouma, provides the **earliest evidence for jar burial in the Pacific**'.
- For Spriggs (2011), the Teouma Lapita 'jar burials' as well as others from Borneo and Taiwan are **part of the Austronesian and Neolithic 'package'**.

## Lapita pot associated to burial



## Jar Burial in Island Southeast Asia

- Several works have developed the concept of 'Jar Burial tradition' of Island Southeast Asia (Smeaton 2005, 2009, Suroyo & Cole 2008).
- a practice widespread across the region despite the diversity of site organization and burial practices.
- an emergence of the Late Neolithic/Early Bronze Age transition dated to 5000 BC in Sarawak.
- a time period also marked by several important changes in the regional archaeological record.

## Lapita culture

- result from the Southeast Asian expansion into the south Pacific region.
- now known through its distribution across the south western Pacific.
- only few have produced funerary remains. Site 13 Kōmōn in New Caledonia is mentioned.

## 'Jar Burial' at Teouma site

'Jar burial' pots containing human remains are most often placed in a funerary context as part of a funerary process sequence.

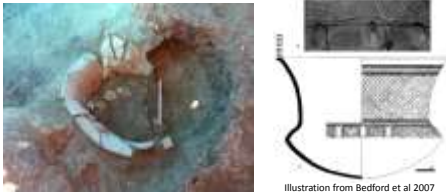
Jar bur	Possible jar	Posthearth bur	Other pot
B 17	Pot 1 200	B 30, on sk	Pot 3 200 associate to B 25 and B 45
B 22	Pot 2 200	B 60, on pe	
B 45			

## Pots herds over is large elements





Possible Lapita jar burial (?)



**Human skeletal content:** 2 phalanges at the base, some long bone fragments in the fill, 1 skull fragment from above  
 In association with small cowrie shells

Possible pitjar burial (?)



**Human skeletal content:** at the base, 1 phalanx and 1 metatarsal

Jar burial B45



**Human skeletal content:** infracranial elements including scapula, cervical vertebra -comprising C1- and thoracic, ribs, long bones fragments of tibia, humerus, calcaneus, metatarsals

Jar burial B22



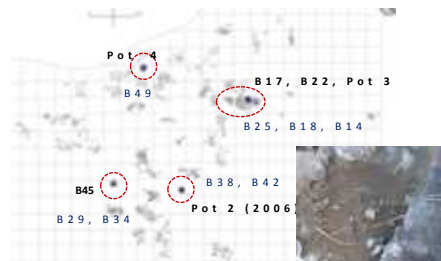
**Human skeletal content:** cervical and thoracic vertebrae, scapula, femora, tibiae, vertebrae and fragments of ribs, humeri, radius, carpal and phalanges

Jar burial B22

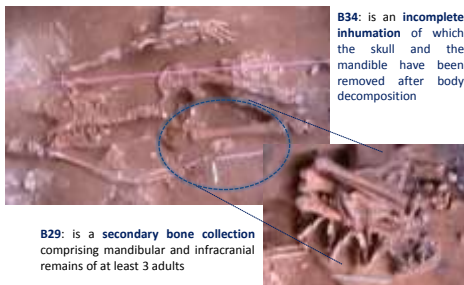


**Human skeletal content:** 1 crania and 1 mandible  
 In association with a wide shell ring

Jar burial distribution by cemetery



Jar burial B45 close to B29 and B34



**B29:** is a secondary bone collection comprising mandibular and infracranial remains of at least 3 adults

**B34:** is an incomplete inhumation of which the skull and the mandible have been removed after body decomposition

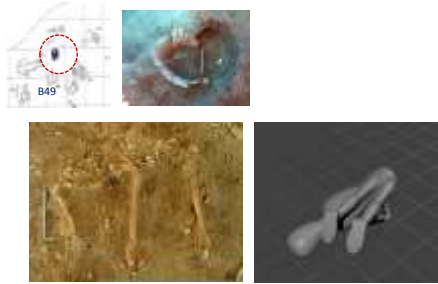
Pot 2 (2006) close to B38 and



**Pot 2:** a possible jar burial

**B38:** an incomplete inhumation

Pot 4 close to a number of burials including B49



Teouma jar burial contained **dry and unburned bone with no evidence of articulation**, indicating **secondary burial**. Other forms of secondary burials were also identified at the site **without recognized container** or in **container** made of coral boulders



Photo: Matthew Spriggs

Social interpretation

- The general 'spirit' underlying the gestures seems the same, and all these secondary burials, either in jar or not, appear to reflect two kinds of behavior pertaining to a single system.
- > 1. a specific treatment of the bones removed from the primary burials as the skulls and the forearms bones ,
- > 2. an additional treatment for the bones generally left in the grave as the ribs, vertebrae and leg bones.
- 'Jar burial' at Teouma Lapita site reflects only one facet of a wider funerary system that includes primary inhumation, cremation, manipulation of body and bones at several stages of body decomposition, and secondary burial.
- Could this complicated system be a **testimony to an ancestral Austronesian tradition** imported to Vanuatu by the Lapita colonists?

Jar burial sites in Island Southeast Asia, except Taiwan

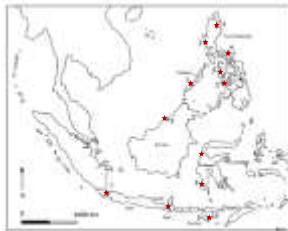


Fig. 11. The distribution of jar burials in Island Southeast Asia. 1. This site, identified as 'Jar Burial' in the archaeological literature, is also in Island Southeast Asia. 2. This site, identified as 'Jar Burial' in the archaeological literature, is also in Island Southeast Asia. 3. This site, identified as 'Jar Burial' in the archaeological literature, is also in Island Southeast Asia. (From Lloyd-Smith 2008)

Jar burials B17, B22 and pot 3 close B25, and B14



Teouma jar burial

- Adult bones
- Unburned
- Cranial in cranial bones
- One individual represented



Teouma secondary burial

- Adult and subadult bones
- Unburned **case**
- Cranial in cranial bones **mixed elements**
- One **representative**



Jar Burial in Island Southeast Asia

- Jar burials are frequent in Southeast Asia
- To date these features has proven to be different reasons :
  - > 1. the habit to use jars as mortuary container
  - > 2. the sites where they occur were used over a long period of time
- Most of the findings appear to be associated with archaeological assemblage and Neolithic jar burials be uncommon, except in Taiwan.
- > 72 jar burials belonging to the Lapita culture were excavated in the Teouma Lapita site (Lloyd-Smith 2008)

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Jar burial mortuary data at Niah site (Sarawak)

12 jar burials (Lloyd-Smith 2008)

- 2800-2500 BP
- Secondary burials
- Adult and infant bones
- Unburned bones in 7 cases, and burned bones in 2 cases, mixed burned and unburned in 3 cases
- Only infracranial elements in several cases and mix of cranial and infracranial in others
- One or several individuals represented, up to 5
- Red pigment covering the bones
- Artefacts in 4 cases
- Associated with other secondary and primary burials

Comparison of Teouma vs Isla de the Assia

Teouma Lapita burial

- c. 3000 BP
- Secondary burials
- Adult bones
- Unburned bones
- Only cranial bone in infracranial
- One individual represented
- Associated with other secondary burials including cremation in a burial

Niah Neolithic burials

- 2800-2500 BP
- Secondary burials
- Adult and infant bones
- Unburned bones 7 cases, and burned bones 2 cases, mixed unburned cases
- Only infracranial elements in several cases and mix of cranial and infracranial in others
- One or several individuals represented, up to 5
- Red pigment covering the bones
- Artefacts in 4 cases
- Associated with other secondary and primary burials

Comparisons Teouma vs Taiwan

- Forming another link between the Lapita Southeast Asian islands Neolithic funerary systems, in Taiwan, as at Teouma,
- possible jar burials were also found at the Changkuang site, in the Taitung County, in a layer associated with the Chilin culture of the late second millennium BC (Chao 2000). At this site, one upside down pot was found beside a stone slab grave, enclosing 9 human teeth and a few bone fragments.
- potteries covering skeletal elements were equally found at Peinan Neolithic cemetery (Lien 1991). The practice was to place a large half pot over the face or head of the dead person.



## « Anthropologie de terrain »

A concept elaborated and developed by French archaeologists and anthropologists to understand what has happened to the body during funerals and after

### Some references

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## Principles of « Anthropologie de terrain »

The skeletal elements move during decomposition:

- Due to spaces created by soft tissue decomposition
- Movements dictated by gravity

The burial context influence the bone movements

- in limiting movement
- in creating larger spaces of variable extent or duration

Therefore, the arrangement of the bones in the grave reflects  
 the original position of the body and the burial context

## Principles of « Anthropologie de terrain »

Joints decompose at different rates  
 depending on the number and size of ligaments

- Labile joints decompose fast, at early stages of decomposition:  
 They comprised: wrist and hand joints, distal joints of feet, neck joints, tempo-  
 mandibular joint, scapulo-thoracic joint, joints between ribs and sternum
- Persistent joint decompose slower, at later stages of decomposition  
 They are comprised: lumbar segment of vertebral column, hip and sacro-iliac joints,  
 ankle and tarsal joints; atlanto-occipital joint

Positions of bones like hands and feet bones are  
 of great significance for burial story interpretation

## « Anthropologie de terrain » data recording

Record includes:

- Description
- Mapping on planview and drawings of bones
- Vertical photographs with scale and north arrow



## Goals of anthropologie de terrain

- To reconstruct the original situation of the body by the means of analytical skeletal elements arrangement in the grave.
- To provide information on:
  - preburial treatments,
  - body position,
  - on perissambeterwappend containers,
  - spatial relations of the body and goods

This is information on behaviours and activities  
 which are organized in sequences  
 to utilize mortuary chain opératoire

## Principles of Anthropologie de terrain

The interpretation of original body position and text  
 relies on understanding

- Human body decomposition
- Soil and its placement of the possible parts

## « Anthropologie de terrain » recording

- « Anthropologie de terrain » data collection field
- The protocol data collection comprises:
  - A detailed location of the site
  - An anatomical identification of the elements
  - A record of the reposition
  - A record of the joint articulation
  - A record of the elements and skeletal elements  
 and the elements and fragments of the grave

## Identifying a burial

- Primary burial placement of the grave in the ground
- Skeletal orientation of the primary burial
- Skeletal orientation of persistent joints in articulated primary burial
- Skeletal orientation of mobile joints in articulated primary burial



Sépulture primaire  
Mehgarh, Pakistan  
Fouille et relevé P. Sellier



Sépulture secondaire  
Mehgarh, Pakistan  
Fouille et relevé P. Sellier



Primary burial at Teouma



Primary burial at Teouma?



Secondary position at Teouma



Identify original body position

- Identify original position of the body is an essential step in mortuary archaeology

- At Teouma:

There is a large diversity in position



Original body position at Teouma



Original body position at Teouma



Original body position at Teouma



**Original body position at Teouma**



**Identify original position of the head**

- Is the position observed due to a purposeful burial or not
- Need examination of articulation between the cervical vertebrae
- Atlanto-occipital joint is not a very stable joint
- Continuity of alignment of cervical vertebrae suggests intentional placement
- Discontinuity of articulation does not indicate decomposition

**Identify body containers and wrappers**

- A noticeable achievement of « Anthropologie de terrain »
- It is possible to distinguish between:
  - A body that decomposed in a grave immediately filled up with soil
  - A body that decomposed in a grave with space around and a delayed infiltration of soil

Colmatage immédiat de la fosse, Gorge du Loup, France  
Fouille Pautreau, Double Burne



Colmatage de la fosse, La Reine Blanc, France  
Fouille Comm du Vieux Pa

Korotuku burial mound, Cikobia Island, Fiji



**At Teouma: a number of bone disarticulations**



**At Teouma: body wrapping or/and narrow pit**



Assess relationships between individual  
and other deposits



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