

Taiwan Jade in the Philippines
3,000 Years of Trade and
Long-distance Interaction

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Current archaeological research is revealing some remarkable new information about ancient jade working in the Philippines. Artifacts of a green variety of jade—including bracelets, adzes and beads—were brought by sea from eastern Taiwan into the Philippines (Batanes, Luzon, Palawan and, possibly, other regions) over a period that lasted about 3,000 years, from about 2000/1500 B.C. to A.D. 1/500. During the later part of this time span, artisans in the Batanes Islands and Batangas Province (Luzon) were actually reworking this imported Taiwan jade into new styles of ear ornaments, often by cutting up and recycling old artifacts such as adzes. Many Philippine-made products of Taiwan jade, especially ear ornaments, traveled onward to regions such as Sarawak and southern Viet Nam around 2,500 years ago. This jade tradition even reappeared centuries later among the Maori of New Zealand, reflecting either a common ancestry between Maoris and Filipinos via ancient migration, or later contacts, perhaps involving jade heirlooms, that could have occurred about one thousand years ago.

Jade and the Philippines

The oldest jade artifacts on Asian soil occur in China, first appearing about 6000 B.C. in the northern and eastern provinces. By 3000 B.C., when prehistoric jade working in the Hongshan and Liangzhu cultures of China was at its peak, a knowledge of jade working was spreading throughout Taiwan, following the colonization of this island by ancestral Austronesian-speaking peoples from southern China around 3500 B.C. From Taiwan, Austronesians moved before 2000 B.C. into the Philippines via Batanes and Luzon and, thereafter, some of their descendants undertook the greatest series of ancient migrations on record in human history, moving right through Island Southeast Asia into the Indian and Pacific Oceans, reaching Madagascar in the west by A.D. 500 and New Zealand (Polynesia) in the east by A.D. 1200 (Map 3, p. 35). The Philippine Islands thus represent a key formative area for the genesis of the later Austronesian cultures that eventually spread more than halfway around the world.

◀ **Detail.** Ancient jades map 3,000 years of prehistoric exchange in Southeast Asia. Photo by H.C. Hung. National Museum of the Philippines

To put the Philippine jade evidence into perspective, let us go back to the writings of H. Otley Beyer (1948), who gave the first estimate of the chronology for ancient jade in the Philippines based on the results of his 1932 to 1941 archaeological survey in Batangas Province. The oldest jade artifacts here, which Beyer termed "Late Neolithic," were tools such as adzes and chisels made of a whitish variety of jade. Utilizing the chronology for Southeast Asian prehistory of the Austrian ethnologist Robert Heine Geldern, Beyer dated these white jade tools to be between 1500 and 500 B.C. After this came a phase characterized mainly by green jade ornaments such as beads, ear ornaments and amulets, worked by sawing using tough and sharp stone knives and abrasive sand, and by disc drilling and hole boring, probably using stone drills. Beyer dated this younger phase with green jade ornaments to between 500 B.C. and A.D. 1, and noted that it was associated with glass beads and the use of bronze. It is quite remarkable how close Beyer's estimates were to the more detailed chronology that we have today using radiocarbon dating, which at that time had not been invented. In Beyer's day, chronology had to be tied ultimately to the historical records of China and Europe.

Beyer did not know where the white and green varieties of jade came from, and the source of the white jade still eludes us today, although it is surely somewhere within Batangas. However, the green jade has a most intriguing story behind it, as we will see below.

Beyer also referred to "a curious type of ear-pendant or amulet" of this green jade (Fig. 16, 17), similar to the *lingling-o* ear ornaments of the 19th century Ifugao and other mountain peoples of northern Luzon (Cat. 25, 26a). He noted that French archaeologists had found similar artifacts in their excavations of Early Metal Age jar burials at Sa Huynh in central coastal Viet Nam, some of green jade and some of glass. Beyer also drew attention to a range of "geometric

objects of uncertain use" from Batangas. Nowadays, we know that these are the debris left by the technology of cutting and grinding jade "preforms" into artifacts. The inhabitants of Batangas were not only using ornaments, but they were making them as well.

In the 1960s, the National Museum of the Philippines undertook the excavation of the Tabon Caves on Palawan, under the direction of Robert B. Fox (1970). His team found no fewer than eighteen *lingling-o* ear ornaments of green jade in Duyong Cave (Fig. 16, 17) and fourteen more in Uyaw Cave (Cat. 8.1, 8.4, 8.5). These finds reinforced Beyer's observations that the *lingling-o* earrings dated to the Early Metal Age, as also did a remarkable double animal-headed ear ornament found in Duyong Cave. Fox also noted that the *lingling-o* ear ornaments were of two kinds—one with three lotus-bud-like projections similar to specimens found in southern Viet Nam (the "Sa Huynh type" Fig. 16, 17) and the other with four projections similar to specimens found in Hong Kong (the "Hong Kong type"). He also noted that the manufacturing debris from the cutting and drilling of nephrite in Batangas reflected the same type of technology that the Maoris of New Zealand used to work their own jade—extracted from riverbed boulders in the mountainous western ranges of the South Island—prior to European contact.

How did the skill of jade working spread into the Philippines? To answer this question one needs to make a rapid review of Philippine prehistory, focusing especially on recent archaeological projects in the Batanes Islands and the Cagayan Valley. The first hunter-gatherer peoples to reach the Philippines probably came from Borneo, reaching Palawan some 50,000 years ago and migrating north as far as Luzon. They did not use jade.

Six thousand years ago, farming peoples with jade-using traditions who grew rice and foxtail millet and kept domesticated pigs and dogs began to move south from the Yangtze (Chang Jiang) Valley into southern China, reaching Taiwan by 3500 B.C. These were non-Sinitic populations ancestral to many modern Southeast Asians (the Han Chinese did not conquer the southern Chinese mainland until some 2,500 years ago). About 2500 B.C., some of these people—who, according to linguistic research, were speakers of early Austronesian languages—crossed on boats or rafts from Taiwan to Batanes and Luzon to found the main component of the modern Filipino population. Austronesian languages are today spoken by over 350 million people found across an enormous region that includes Madagascar, Malaysia, Aboriginal (Non-Chinese) Taiwan, the Philippines, Indonesia, and most of the Pacific Islands (excluding interior New Guinea) to as far east as Hawaii and New Zealand (Polynesia). The roots of these Austronesian languages can be traced to Taiwan and the Philippines, and they spread with a series of Neolithic



Fig. 16. *Lingling-o* of Fengtian nephrite (Taiwan jade) from Duyong Cave, approximately 11 kilometers north of Tabon Cave, Palawan. Photo by H.C. Hung. National Museum of the Philippines



Fig. 18. A Neolithic jade earring from Zhangguang, eastern Taiwan, clearly showing the black inclusions typical of Fengtian jade. Photo by H.C. Hung. Collection of T.J. Li

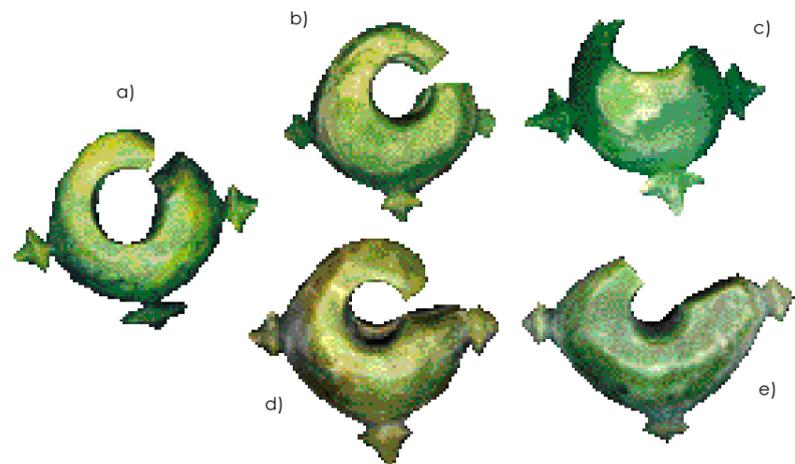


Fig. 17. *Lingling-o* of Fengtian nephrite from Niah, Sarawak (a) and the Tabon Caves, Palawan (b-e). Photo by Y. Iizuka. National Museum of the Philippines and Sarawak Museum

population migrations that took place between 2500 B.C. and A.D. 1200, at which point they finally reached New Zealand.

Jade in Taiwan and Philippine Archaeological Records

Current archaeological research in Taiwan and Batanes is revealing a number of important observations about the use of jade by these ancient Austronesian ancestors. The earliest of these migrants into Taiwan, who arrived between 3500 and 2500 B.C., used jade only to make adzes, axes, and spear points. After 2500 B.C., jade ornaments such as bracelets, pendants, ear ornaments, and beads started to become more extensively distributed in Taiwan and adjacent islands. Between 1500 B.C. and A.D. 1, this jade industry reached its apogee, particularly in southeastern Taiwan where a remarkable personal ornament manufacturing industry involved the creation of jade pendants, earrings (Fig. 18), bracelets, and small bell-shaped and long tubular beads that often were buried with the dead. This late Neolithic jade industry is especially well-known from excavations in the ancient stone-paved village at Beinan (Map 2, p. 35, near the modern city of Taidong) where, between 1500 and 500 B.C., people were buried in slate slab graves with large numbers of jade grave offerings. In

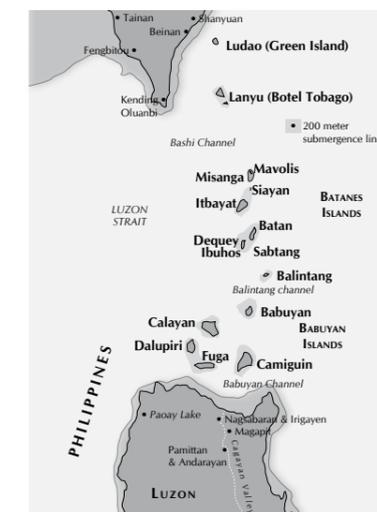
Fig. 19. Torongan Cave (seen in the middle distance, under the limestone cliff) and the eastern coastline of Itbayat Island, Batanes. Photo by P. Bellwood



some very rich graves, more than three hundred jade items were found buried with a single person.

It is now known that all the jade found at Beinan—as well as all that has been found and examined to date from all the archaeological sites in Taiwan—came from a nephrite deposit at Fengtian, located at the eastern foot of the Central Mountain Range near the modern city of Hualian. Non-invasive surface examination using a low vacuum scanning electron microscope equipped with an energy dispersive x-ray spectrometer has revealed that all tested jade artifacts are composed of calcium amphibole with zinc-chromite inclusions, exactly as in Fengtian nephrite (Taiwan jade). Characteristically green in color, Fengtian nephrite is clearly differentiated chemically from other known nephrite deposits in East and Southeast Asia. The Fengtian deposits, as far as we know, are the only source of green jade in the islands of Southeast Asia.

Within the Philippines, the oldest jade item found so far is part of a nephrite bracelet, dated to about 1800-1500 B.C., found in the Neolithic site of Nagsabaran in the Cagayan Valley, northern Luzon. This is paralleled very closely in a collection of about 25 nephrite bracelets excavated from the site



Map 2. The Batanes Islands, and their location between southern Taiwan and northern Luzon

Map 3. The distribution of the Austronesian languages before A.D. 1500

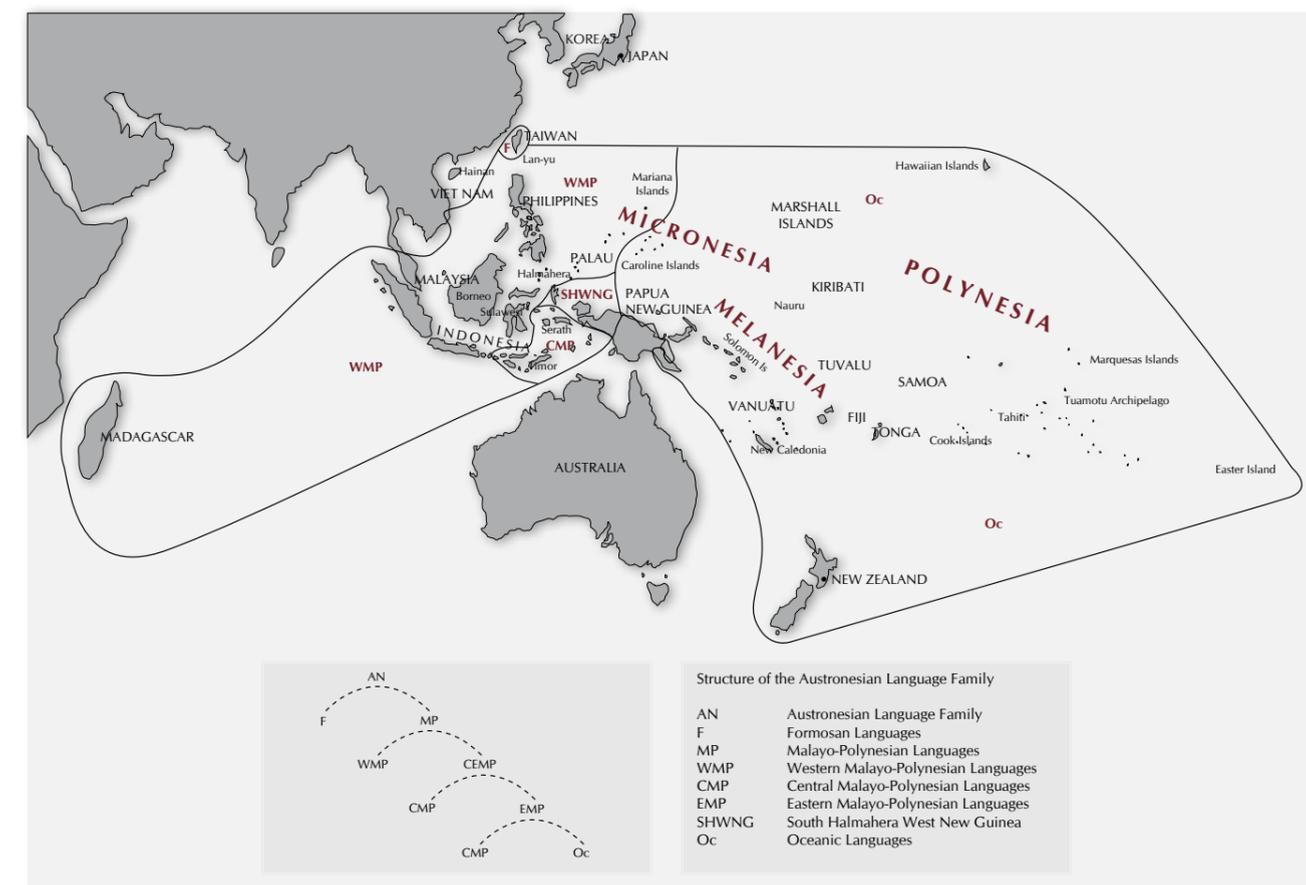




Fig. 20. The Mahatao landscape in Batanes, showing the location of Sunget Ridge behind and above Mahatao township. The two excavations at Sunget are marked by white stars. Photo by P. Bellwood

of Youxianfang, in southwestern Taiwan, similarly dated between 1850 and 1350 B.C. In the Batanes Islands immediately south of Taiwan, the oldest sites discovered so far have not yet yielded any nephrite artifacts, although Torongan Cave on Itbayat Island (Map 2, p. 35 and Fig. 19) has pottery dating to approximately 2200 to 1500 B.C. However, by 1000 B.C. we have a small jade adze from the site of Sunget, near Mahatao on Batan Island (Fig. 20). This adze is green in color with black inclusions, identical to Fengtian nephrite (Cat. 1a).

Perhaps 1,000 years later than the occupation in Torongan Cave, at the hilltop site of Anaro on Itbayat (Figs. 21, 22), one sees a major investment of energy in working green jade. Excavated and surface finds here (Fig. 23, 25) include adzes (some being reworked into other items) and lots of cut discarded pieces, some being discards from the manufacture of *lingling-o* ear ornaments of the Sa Huynh type described by Fox (Fig. 17). Although Anaro was inhabited between 1000 B.C. and recent centuries, radiocarbon dating suggests that most of the *lingling-o* production was concentrated between 500 B.C. and A.D. 1. Anaro has produced many pieces of smooth-edged Taiwan slate that were probably used with quartz grit as cutters for working the nephrite (Fig. 23 top right). Some of these came from broken perforated slate spear or arrow points that were originally manufactured in Taiwan. Others were made as knives rather than points, similar to those found in large numbers in archaeological

sites near the Fengtian source in Taiwan, especially at Pinglin, an ancient jade workshop located on a terrace of the Shoufeng River, several kilometers south of the Fengtian nephrite deposit (Fig. 24, 26). Pinglin was reported by Japanese archaeologist Tadao Kano in 1946 as the biggest jade workshop in Southeast Asia.

Neither green nephrite nor slate appear to exist geologically in Batanes or anywhere on Luzon (including Batangas), and slate artifacts have not yet been found in northern Luzon, only in Batanes. However, like those from Taiwan, the Batanes and Luzon jade artifacts that have been analyzed in Taipei are all comparable to Fengtian nephrite, as are all those from the Tabon Caves in Palawan.

Nevertheless, if all the green nephrite came from Taiwan, this was not true of the finished artifacts. The *lingling-o* ear ornaments with the lotus-bud projections (Fox's Sa Huynh type), made at Anaro and possibly in other Philippine locations, were evidently designed for southern markets. Finished *lingling-o* ear ornaments, presumably of Philippine manufacture (but made of Taiwan jade), reached not only Palawan but also southern Viet Nam and the West Mouth of the Niah Caves in Sarawak, East Malaysia (Borneo, Fig. 17a). Similar *lingling-o*, not yet tested with respect to jade source, have been found in Thailand and Cambodia. Available radiocarbon dates for sites in Thailand and Viet Nam indicate that the main period of *lingling-o* usage was between 300 B.C. and A.D. 100.

We have also not yet tested the animal-headed pendant from Duyong Cave on Palawan, but this has very close parallels in southern Viet Nam and southern Thailand and it will be interesting to see where the jade comes from. (Viet Nam probably does have native jade sources that, as yet, have not been located or researched.) Again, animal-headed pendants are not reported from Taiwan. The native peoples of southern Viet Nam are Austronesian speakers, like the Filipinos, and both groups were apparently in close interaction at about 2,000 years ago, when Southeast Asia was part of a huge trade network that linked the Mediterranean, India, Southeast Asia, and southern China.

The Batanes slate artifacts, so common at Anaro, most likely came from Taiwan where slate is common in the Central Mountain Ranges and where it was favored for making spearheads, knives, and sickles as well as the walls and floors of houses and slab graves. However, the white jade used for adzes in the Batangas sites on Luzon appears to be from a Philippine source, still unlocated. Our research shows that these white adzes are composed of tremolitic amphibole and are differentiated by their high oxygen isotope ratios from all other known tremolitic amphibole sources in East Asia. Thus, it is



Fig. 21. The site of Anaro from the northwest. The hilltop and terraces below were inhabited from 1000 B.C. to recent times. Artifacts have been found and excavations undertaken in many locations. Photo by P. Bellwood

Fig. 22. Excavation at Anaro in 2005. Alexandra De Leon and Giovanni Bautista are excavating, Gay Lacsina is sieving, and Dr. Eusebio (Bong) Dizon is supervising. Photo by P. Bellwood





Fig. 23. Slate knives (images on top) and pieces of worked Fengtian nephrite found at Anaro in 2004, including cores drilled from probable *lingling-o* ear pendants (below right). Photo by P. Bellwood. National Museum of the Philippines

Fig. 24. Yang Shu-Ling of the National Museum of Prehistory, Taidong, inspecting nephrite-working debris collected at Pinglin, near the Fengtian source in eastern Taiwan. Photo by H.C. Hung



reasonable to assume that they probably came from a geological region of dolomite and/or dolomitic marble.

One interesting observation about jade working in Taiwan is that, by 2,000 years ago, it was fading as the Formosan people turned toward using metal (bronze, iron, and gold), glass, and carnelian for beads and other status ornaments. It is not clear why this happened, but by 500 B.C. the epicenter of jade working seems to have moved to the Philippines, probably first to the islands of Ludao and Lanyu (off southeastern Taiwan), and then to the Batanes Islands. However, the Filipino artisans always had to get their jade from Taiwan or rework older jade objects that were no longer required.

Even more interesting is the observation that the New Zealand Maoris, living over 10,000 kilometers from the Philippines, appear to share a cultural memory of both the *lingling-o* and the double animal-headed pendant (Fig. 27d). Since jade is very rare in the Pacific, we cannot be sure if the first Austronesian settlers of 3,500 years ago took a knowledge of jade working with them (New Zealand was not settled until about A.D. 1200) or if it was carried by later travelers originating from the Philippine Iron Age. It also is possible that Maori forms such as the *pekapeka* (double animal-headed pendants) and *poria kaka* (parrot leg rings) were made in earlier prehistory in perishable materials like wood, shell, or bone and, therefore, have not survived. However, as far as is



Fig. 25. Fengtian nephrite-working debris found at Anaro in 2005. The pieces on the top row, second to fourth from left are discarded from *lingling-o* manufacture. Photo by H.C. Hung. National Museum of the Philippines

Fig. 26. Nephrite-working discards from Pinglin, eastern Taiwan. Photo by H.C. Hung





Fig. 27. (a) A New Zealand classic Maori *poria kaka* (parrot leg ring) compared with (b) a *lingling-o* from Uyaw Cave, Palawan. Photo by H.C. Hung, National Museum of the Philippines; (c) a form (*pekapeka*) from Maori New Zealand. From Phelps, 1976 (courtesy of Steven Hooper, Sainsbury Research Unit, University of East Anglia) compared with (d) a similar double animal-headed pendant from the Tabon Caves. Photo by Y. Iizuka, National Museum of the Philippines

known to date, the fact that these forms do not occur in the oldest Neolithic cultures in Taiwan or the Philippines suggests that a later contact (perhaps as recent as A.D. 1000) with some East Polynesian areas (including New Zealand) might have occurred. If it did, it would have been a long voyage!

The next research tasks are clear. The source of the Batangas white jade needs to be located, as do other potential jade sources on the mainland of Southeast Asia, especially in Viet Nam. In addition to the Taiwan and Philippine jade artifacts, several ear ornaments from Central and Southern Viet Nam and Peninsular Thailand have now been tested and some were of Fengtian jade, others from mainland sources. These are exciting discoveries that reveal a trade involving Fengtian jade artifacts along the South China Sea coastline between 2,500 and 200 years ago.

Conclusions

Taiwan jade was imported into the Philippines for at least 2,000 years, from 1500 B.C. to A.D. 1000. At present, the oldest jade artifact in the Philippines (dated to 1500 B.C.) is a bracelet fragment of Fengtian jade from the Nagsabaran site in the Cagayan Valley. The Taiwan jade network fueled a remarkable period of technological innovation during the first millennium A.D. that led to the manufacture of the *lingling-o* ear ornaments by Philippine artisans, among whom one must include the native people of Lanyu (who speak a Batanic language and who also once worked jade). Even though the green jade came to the Philippines from Taiwan—and, perhaps, even the jade tradition itself came to the Philippines from China through Taiwan—native Filipinos eventually contributed a great deal in terms of skill and style to the international jade-working world of 2,000 years ago. These skills were eventually carried as far as Maori New Zealand.

Recommended Reading

On Austronesian and Philippine General Prehistory	BELLWOOD and HISCOCK 2005 BEYER 1948 FOX 1970 HUNG 2005 IIZUKA and HUNG 2005 HUNG, IIZUKA, and BELLWOOD 2006	On the Batanes Archaeological Project	BELLWOOD and DIZON 2005 IIZUKA, BELLWOOD, HUNG, DIZON 2005
On Beinan and Taiwan Jade	LIEN 1993 <i>Peinan Jade Artifacts in the Collection of the National Museum of Prehistory</i> 2005	On Ancient Jades in Viet Nam and China	REINECKE, NGUYEN, and LAM 2002 YANG (ed) 2004
		On New Zealand	BECK 2002 NEICH and PEREIRA 2004 PHELPS 1976



Fig. 28. How four *lingling-o* were made from one large disc of Fengtian nephrite, left after the manufacture of one or more bracelets. Such large discs might have been imported to Batanes from their primary working sites in Taiwan, such as Pinglin. Photo by H.C. Hung, National Museum of the Philippines

Notes

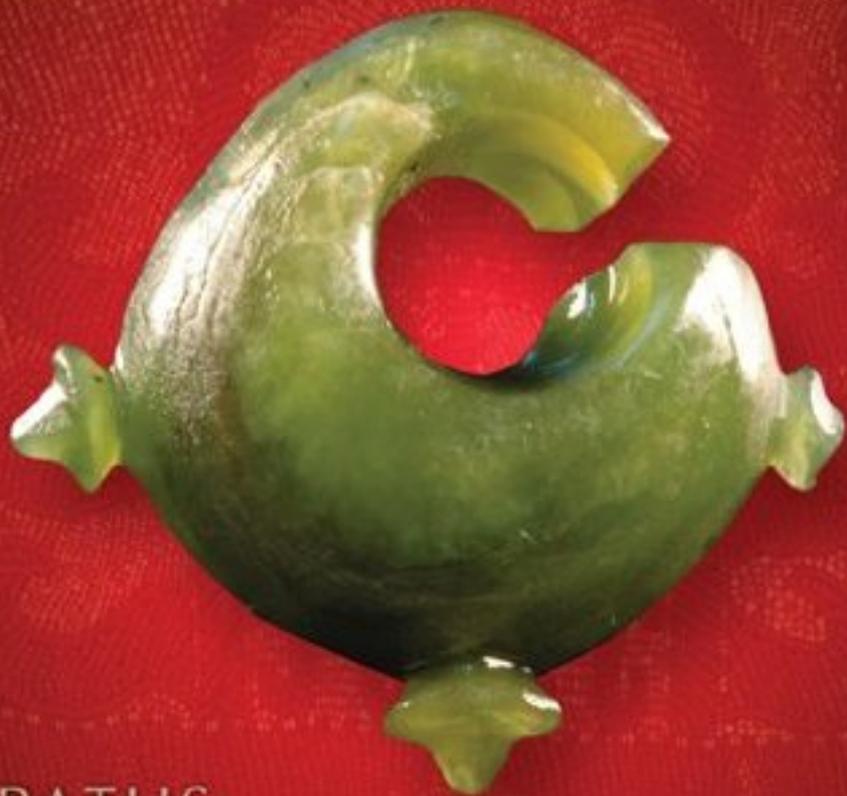
The *Journal of Austronesian Studies* is a new journal published by the National Museum of Prehistory in Taidong, Taiwan.

The sourcing of Taiwan jade can be found in Hung, H.C., Y. Iizuka, P. Bellwood, K.D. Nguyen, B. Bellina, P. Silapanth, E. Dizon, R. Santiago, I. Datan, and J. Manton 2007. *Ancient jades map 3,000 years of prehistoric exchange in Southeast Asia*. *Proceedings of the National Academy of Sciences, USA* 104:19745-50.

1. The term jade is applied to two different rocks, jadeite (hard jade) and nephrite (soft jade). Jadeite is composed of sodium (Na) clinopyroxene (jadeite), and nephrite is composed of tremolite (white in color) and/or actinolite (green in color).

2. The Batanes research has been undertaken by field teams from the National Museum of the Philippines, the Archaeological Studies Program in the University of the Philippines, and the Australian National University. The project has been funded by the Australian Research Council and the National Geographic Society.

Purissima Benitez-Johannot
Editor



PATHS
OF
ORIGINS

The Austronesian Heritage
in the Collections of
The National Museum of the Philippines
The Museum Nasional Indonesia and
The Netherlands Rijksmuseum voor Volkenkunde