

THE DATING OF SUKHOTHAI AND SAWANKHALOK CERAMICS: SOME CONSIDERATIONS

by

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Conclusions about the dates of Sukhothai and Sawankhalok ceramics can only be reached through the analysis of evidence that often seems peripheral. No piece yet discovered has written on it "made in the year . . ." There are no historical records describing production or export. There is instead archeological evidence — examples of Sukhothai and Sawankhalok ware, by and large, discovered in association with other artifacts, these too frequently being other ceramics which are equally insecurely dated. Historical records do exist which do not mention ceramics, but which do provide information which enables us to draw conclusions about when potters might have moved from one place to another, or when an event of immense and still insufficiently appreciated economic dimensions — the export of great quantities of bowls, dishes, and covered boxes to the islands of southeast Asia — might best be situated. Finally, there is stylistic evidence, evidence which allows us to reach conclusions on the basis of stylistic similarities with more securely dated works in other media or ceramics from other places, most notably Viet Nam.

In the winter of 1974 the problem of the chronology of Thai and Vietnamese ceramics was the subject of a graduate seminar at the University of Michigan¹. Most of us agreed at the end of the term that Thai ceramics have generally been given dates that are too early, and that it is the fifteenth (and perhaps early sixteenth) century A.D. which was the crucial period of manufacture. But the evidence is overwhelmingly circumstantial and consists of many small bits of data that provide only shadows of a total picture. Since 1974, others, who have either learned of our conclusions or had independently begun to have doubts of their own, have embraced less and less heartily the viewpoint proposed by Charles Nelson Spinks. In *The Ceramic Wares of Siam* (1965), Dr. Spinks wrote, "The inescapable fact remains, however, that Chinese potters, or at the very least Chinese ceramic techniques and traditions, made their appearance at Sukhodaya [Sukhothai] around the close of the 13th century, and inaugurated the production of fine glazed wares utterly unlike any that had heretofore been made in that area."² Then, "Production at the Sukhodaya and Svargaloka [Sawankhalok] kilns no doubt came to an abrupt and violent end in the middle of the 15th century as a result of the conflict between Ayudhyā and Chienmai."³ In an important 1971 catalogue, William Willetts made numerous valuable observations about the relationships among the different Thai wares, but

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1 I wish to thank the students, Betty Gosling, Forrest McGill, Steven D. Owyong, and Barbara Wagner, for their contributions, and Kamer Aga-Oglu and James B. Griffin, now Curator Emeritus and Director Emeritus, respectively, for making the collections of the University of Michigan Museum of Anthropology accessible to us. This article is based on a paper presented at the Asia Society in New York on 30 October 1976.

2 Charles Nelson Spinks, *The Ceramic Wares of Siam* (Bangkok: The Siam Society, 1965), p. 15. *

3 *Ibid.*, p. 115.

his chronological perimeters were the same. He accepted a mid-sixteenth-century cut-off, and about the time of initiation he wrote, "Yet it is certain that within that decade [of the 1290s] or the next, Chinese ceramic artists, artisans, and technicians began to arrive in Thailand and to set up factories there. The result was an unprecedented burst of creativity and output, first at Sukhothai, then, after a more or less brief interval, at Sawankhalok."⁴ Dean F. Frasc , however, in his catalogue for the exhibition that opened at the Asia House Gallery in the fall of 1976, wisely noted that "it should be mentioned that the absence of adequate supporting archaeological and historical data on the ceramic sites preclude their being assigned accurate dates for the periods of their activities."⁵ And Roxanna Brown wrote in the catalogue of a 1977 Cologne exhibition, "The exact dates of the Sukhothai kiln centers [i.e. those both at Sukhothai itself and at the 'Sawankhalok' centers outside the city of Si Satchanalai] are not known, though archeological data suggests from the fourteenth to the beginning of the sixteenth centuries."⁶

Barbara Wagner is publishing an article in *Oriental Art* on the stylistic evidence for the dating of Sawankhalok covered boxes. There follows here a presentation of some of the other evidence that leads to the conclusion that the bulk of production occurred in the fifteenth century — evidence that at the same time leaves unsettled problems regarding the development of production within that century.

Foreign archeological and historical evidence

The results of two important Philippine excavations have been published. Only a preliminary report, however, has appeared of the "Calatagan" excavations of burial sites in southern Luzon⁷. The Santa Ana excavations in Manila are well known through Leandro and Cecilia Locsin's book *Oriental Ceramics Discovered in the Philippines*⁸. These Santa Ana burials, as the Locsins have demonstrated, span two periods. In the first-period graves there are Chinese ceramics that have been assigned to the time of the Yüan dynasty (1271–1368) and even before. The second-period graves have yielded Ming dynasty wares like those at Calatagan. The Locsins appear to be correct in maintaining that the Santa Ana cemetery grew toward the perimeters of the excavated area. Blue-and-white jarlets characterize many first-period graves but are not found in the earliest burials, at the center of the site.

At the northern edge of the cemetery are the wares, from only 15 graves (in a total of 202), that belong to a second period⁹. These wares include one Sawankhalok covered box and one Chinese blue-and-white recessed-base saucer. This second period is the period of the Calatagan graves, where many similar objects have been found. The Chinese wares at Calatagan were once assigned a fourteenth to fifteenth century date, but they have recently, and

⁴ William Willetts, *Ceramic Art of Southeast Asia* (Singapore: The Southeast Asian Ceramic Society, 1971), p. 16.

⁵ Dean F. Frasc , *Southeast Asian Ceramics: Ninth Through Seventeenth Centuries* (New York: The Asia Society, 1976), p. 43.

⁶ Roxanna Brown *et al.*, *Legend and Reality: Early Ceramics from South-East Asia* (Cologne: Museum für Ostasiatische Kunst, 1977), p. 44.

⁷ Robert B. Fox, "The Calatagan excavations", *Philippine Studies* 7, no. 3 (August 1959).

⁸ Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle, 1967.

⁹ L. and C. Locsin, *Oriental Ceramics*, pp. 105-11.

convincingly, been argued by John Addis to belong more properly to the late fifteenth and first half of the sixteenth century¹⁰. Sawankhalok wares are common in the Calatagan burials.

The placement of the second-period graves, on the northern edge of the Santa Ana cemetery, appears to demonstrate that the cemetery remained in continuous use, by the same body of people. All that changed was the character of the available grave goods. What brought an end to the first period was the end of the availability of blue-and-white jarlets of fourteenth-century type, among other wares¹¹. Can this date be specified?

In 1404, the Yung-lo emperor, realizing that earlier Ming bans on private trade had been ineffective, ordered that all ocean-going ships should be adapted so that they could no longer sail the seas; henceforth all trade with the countries to the south would be by state monopoly¹². For this purpose Yung-lo constructed a great navy of 3,800 ships, of which 1,350 were patrol vessels that would assure that no private trading could take place¹³. The first of the admiral Cheng Ho's great series of official "treasure ship" expeditions to the South Seas occurred in 1405; they continued, combining diplomacy with trade, until the 1420s¹⁴. But none of these expeditions ever reached the Philippines¹⁵. After the 1420s the navy declined. There was a shift in Chinese policy. "Abandon the barren lands abroad," pleaded a minister in 1426, "and give the people of China a respite so that they could devote themselves to husbandry and to the schools."¹⁶ Viet Nam, occupied since 1407, was evacuated in 1428. In southeast Asia, Muslim traders filled much of the vacuum left in the wake of the last of the treasure ship expeditions¹⁷. Eventually—surely by the third quarter of the century—the powerful families of the southern Chinese coastal provinces, Fukien and Chekiang, were once again free to engage in private trade¹⁸. And Chinese ceramics again flowed into the Philippines.

The absence in the Philippines of Chinese wares dating from the first half of the fifteenth century¹⁹ and the division, as well, of Santa Ana into first and second periods, are thus explained by imperial Chinese economic policy; Chinese ceramics, it must be assumed, reached

10 J. M. Addis, "Chinese porcelain found in the Philippines", *Transactions of the Oriental Ceramic Society* 1967-68, 1968-69; J. M. Addis, "The dating of Chinese porcelain found in the Philippines: A historical retrospect", *Philippine Studies* 16, no. 2 (April 1968). Kamer Aga-Oglu has questioned the later dating of lien-tzu bowls in "Ming blue-and-white bowls of Lien-Tzu type", *Ars Orientalis* 9 (1973): 15-20.

11 On the lifespan of the jarlets see Margaret Medley, *Yüan Porcelain and Stoneware* (London: Faber and Faber, 1974), p.61: "If these small pieces fulfilled an essential function, as they must surely have done, the potters would have been economically short-sighted not to have kept the market going for as long as it would stand it."

12 O. W. Wolters, *The Fall of Śrīvijaya in Malay History* (Ithaca: Cornell University Press, 1970), p. 156.

13 Joseph Needham, *Science and Civilization in China*, vol. 4, pt. 3 (Cambridge: University Press, 1971), p. 484.

14 Wang Gungwu, "China and south-east Asia 1402-1424", in *Studies in the Social History of China and South-East Asia: Essays in Memory of Victor Purcell* (Cambridge: University Press, 1970), pp. 375-401.

15 Ma Huan, *Ying-yai sheng-lan 'The Overall Survey of the Ocean's Shores'*, trans. J. V. G. Mills, Hakluyt Society Extra Series No. 42 (Cambridge: University Press, 1970), p. 21.

16 Jung-pang Lo, "The decline of the early Ming navy", *Oriens Extremus* 5 (1958): 167.

17 An important theme in Wolters, *The Fall of Śrīvijaya*.

18 Lo, "The decline", p. 156n. On the resurgence of private trade see also Shunzō Sakamaki, "Ryukyu and southeast Asia", *Journal of Asian Studies* 23 (1963-64):383-89. Charles W. MacSherry, "Impairment of the Ming tributary system as exhibited in trade involving Fukien" (Ph.D. dissertation, University of California, Berkeley, 1956), deals with a later period. I have not seen Bodo Wiethoff, *Die chinesische Seeverbotspolitik und der private Ueberseehandel von 1368 bis 1567* (Hamburg, 1963).

19 Addis, "Chinese porcelain", p. 20.

Luzon only through private trading. The first period at Santa Ana consists of wares imported until about 1405²⁰. Sukhothai and Sawankhalok ceramics are absent in first-period graves. Perhaps Thai wares belonged to another trade network altogether; perhaps they were made but not exported. Or, perhaps no Thai wares of export type had yet been produced.

So let us assume that, as far as Sukhothai and Sawankhalok wares are concerned, it is the period after 1405 which must be focused on. Let us furthermore assume, again on the basis of negative evidence, that the early sixteenth century is the cut-off at the other end; for surely, if ceramics were being exported in any quantity from Siam at that time, they would have been mentioned in the early European accounts. Tomé Pires writes: "From Siam comes lac, benzoin, brazil, lead, tin, silver, gold, ivory, cassia fistula; they bring vessels of cast copper and gold, ruby and diamond rings; they bring a large quantity of cheap, coarse Siamese cloth for the poor people."²¹

The evidence suggests that the production of wares for export was a response to an opportunity in international trade. At what point was this opportunity first appreciated in Siam, and what kind of economic alliance made it possible to take advantage of it? Presumably a ceramic dearth was felt in the Philippines soon after 1405 or so; one may not have been felt in the islands of Indonesia until after the last of the treasure ship expeditions in the 1420s. Muslim entrepreneurs could have encouraged the development of ceramic production in the second quarter of the century. If, on the other hand, private Chinese traders were a moving force in the promotion of the ceramic industries of Viet Nam and Siam, their development may not have occurred until these traders became active along the coast of China itself.

Domestic historical evidence

The notion that there was an influx of Chinese potters or of Chinese influences into Sukhothai in the late thirteenth or early fourteenth century is due primarily to the literal interpretation of a Thai legend included in the 1807 anthology *Phongsāwadān Nūa*²² (and also in the *Culayuddhakāraṃsa*²³). It says that Phrayā Ruang returned from a trip to China with 500 Chinese who henceforth produced pottery. If this Phra Ruang is identified with King Rām Khamhaeng, then the historical event behind the legend would have occurred in the late thirteenth or early fourteenth century. Otto Karow has recently sought to preserve the historical value of the legend by suggesting that the Phra Ruang in question is not Rām Khamhaeng but one of his fourteenth-century successors²⁴. But it is questionable whether even that degree of accuracy must be accorded a tradition that was evidently long preserved only orally.

20 Professor Wolters, on the other hand, sees the earlier Ming bans as being partially effective and depends on other interpretations of the archeological evidence (*The Fall of Śrīvijaya*, p. 189).

21 Armando Cortesão, trans., *The Suma Oriental of Tomé Pires*, vol. 1, The Hakluyt Society, 2nd ser., no. 89 (London, 1944), p. 108.

22 *Phra rāṭchaphongsāwadān nūa*, in *Prachum phongsāwadān*, vol. 1 (Bangkok: Khurusaphā, 1963), p. 13; Camille Notton, trans., *Légendes sur le Siam et le Cambodge* (Bangkok: Imprimerie de l'Assomption, 1937), p. 23.

23 *Čhunlayutthakārawong*, in *Prachum phongsāwadān*, vol. 66 (Bangkok, 1937), pp. 63, 65-66.

24 Otto Karow, "Thai ceramics: The historical and cultural background", in Brown *et al.*, *Legend and Reality*, p. 22.

About the wars between the kingdoms of Ayutthaya and Chiang Mai in the mid-fifteenth century, when Sukhothai was no longer an independent state, we now have a clearer understanding, thanks to a recent article by A.B. Griswold and Prasert ๓ Nagara²⁵. In 1451 there was an invasion of the cities of north-central Siam — Kamphaeng Phet, Sukhothai, and Phitsanulok — by the kingdom of Chiang Mai²⁶. This invasion was repulsed, and the cities remained under the control of the kingdom of Ayutthaya. Then, in 1460, there arose a situation which led to Chiang Mai control of Sukhothai for two years and of Si Satchanalai for fourteen years, until 1474²⁷. In 1474, Ayutthaya's King Paramatrailoka carried out an invasion which recovered Si Satchanalai. Was this city which the king recovered one whose artisans had all been swept up by Chiang Mai between 1460 and 1474 and resettled in the northern provinces? There is no certain answer to this question, but the *Yuan phai*, an historical poem written from an Ayutthayan point of view not long after these events, suggests that Si Satchanalai was in 1474 a wealthy, flourishing town. The decisive battle took place outside the walls. Then, the poem exclaims, in the translation by Mr. Griswold and Dr. Prasert:

See how our men follow the enemy everywhere to surround them:
 [See how] they pounce forward to attack the city and destroy it:
 [See how] they carry off a profusion of silver and gold on their shoulders,
 and take the glorious ladies of the city, the horses and elephants, to present to His Majesty!²⁸

The city, in other words, was a prize. Surely there were the customary ravages of an invasion, but the proper conclusions seem to be these: that Si Satchanalai was in 1474 a wealth-producing city, and that its wealth-producing capacity was not destroyed by Paramatrailoka's invasion. There were Chiang Mai raids on the north-central cities several decades later — in 1507, 1513, 1514, and 1515²⁹. Later in 1515 Ayutthaya invaded the north³⁰. So the north-central cities remained important for both kingdoms, and if it indeed was the upheavals of war which brought an end to ceramic production, the raids and invasions of the first two decades of the sixteenth century might well have been the significant ones.

25 A. B. Griswold and Prasert ๓ Nagara, "A fifteenth-century Siamese historical poem", in *Southeast Asian History and Historiography: Essays Presented to D.G.E. Hall*, ed. C. D. Cowan and O.W. Wolters (Ithaca and London: Cornell University Press, 1976), pp. 123-63.

26 The three primary sources for this period are the *Phra r๓tchaphongs๓wad๓n Krung Si' Ayutthay๓ chabap Luang Pras๓t* (LP), the oldest and most accurate Ayutthaya chronicle, many times reprinted; the Chiang Mai chronicle (*Tamn๓n ph๓n m๓ng Chiang Mai*, ed. Khanakammak๓n ๓hatphim 'ekkas๓n th๓ng prawats๓t Samnak N๓yok Ratmontri [Bangkok: Samnak thamniap N๓yok Ratmontri, 1971]; Camille Notton, trans., *Chronique de Xieng M๓i*, Annales du Siam, vol. 3 [Paris: Paul Geuthner, 1932]); and the *Yuan phai*, a long narrative poem (*Yuan phai khl๓ng dan*, ed. Chanthit Krasaesin [Bangkok, 1970]). For an analysis of these sources and a prose translation of the historically significant portions of the *Yuan phai*, see Griswold and Prasert, "A fifteenth-century historical poem". I follow Mr. Griswold and Dr. Prasert in believing the poem to represent historical events accurately. They say (p. 123) the poem "was probably composed around 1475 at Ayudhya, or perhaps Bisnulo๓a [Phitsanulok]." For the 1451 invasions: Notton, *Chronique*, p. 113; *Yuan phai*, verses 66-68, 83-92; LP, C. S. 813 (the source which provides the date); Griswold and Prasert, "A fifteenth-century historical poem", pp. 134-35.

27 Events of 1460 (which mention "Chaliang", which seems to include Si Satchanalai; about Sukhothai we must necessarily surmise [Griswold and Prasert, "A fifteenth-century historical poem", p. 137]); LP, C.S. 822, 823; Notton, *Chronique*, pp. 122-23; *Yuan phai*, verses 69-72, 93-98. Events of 1462: LP, C. S. 836; *Yuan phai*, verses, 73 and 99-100. Events of 1474: LP, C.S. 836; *Tamn๓n ph๓n m๓ng Chiang Mai*, p. 65; *Yuan phai*, verses 108-end.

28 Griswold and Prasert, "A fifteenth-century historical poem", p. 152 (*Yuan phai*, verse 284).

29 Notton, *Chronique*, pp. 146-47.

30 LP, C. S. 877; Notton, *Chronique*, p. 148. There was an earlier invasion of Phrae in 1510 (Notton, *Chronique*, p. 146).

The Si Satchanalai recovered by King Paramatrailoka was not an empty city. Nevertheless, if Si Satchanalai was under Chiang Mai control between 1460 and 1474, as the chronicles and the *Yuan phai* indicate, what would be the relationship between this fourteen-year period and the export of great quantities of ceramics? No matter what sort of hypothesis is proposed, the dominant figure in the whole enterprise has to have been King Paramatrailoka. From the Luang Prasöt version of the annals of Ayutthaya, it appears that his father named him viceroy in 1438 and that as Prince Rāmésvara he ruled from the city of Phitsanulok. Therefore he was involved in the affairs of the north-central cities before his accession to the throne, which occurred in 1448. In 1463 he decided to move back from Ayutthaya to Phitsanulok, and a man evidently his son became king at Ayutthaya. Paramatrailoka lived on in Phitsanulok until 1488³¹.

The discovery in recent years of good quantities of Sawankhalok ceramics in the river at Ayutthaya suggests that massive export depended on secure and easy trade between Ayutthaya and the kilns near Si Satchanalai. There are various possibilities regarding Paramatrailoka's role. It may be that production for export was inaugurated when he was still viceroy at Phitsanulok, before 1448. Or, perhaps export didn't really get into gear until later, perhaps not until the year 1463, when Paramatrailoka moved from Ayutthaya back to Phitsanulok. In that case, it may be necessary to suppose that Chiang Mai control of Si Satchanalai between 1460 and 1474 brought intensive production at the Sawankhalok kilns and shipment south; it was, from Paramatrailoka's point of view, just a matter of a large part of the revenues going into the wrong pockets. The last alternative would have significant production at the Sawankhalok kilns occurring only after Paramatrailoka regained Si Satchanalai in 1474.

Domestic stylistic evidence

The Sawankhalok kilns produced glazed architectural ornaments. At Wat Ton Makhâm and Wat Kamphaeng Laeng in Sukhothai have been found dragons — creatures which combine characteristics of *makaras*, *nāgas*, and lions (some Thai archeologists just call them lions)³². But it may not be possible at these sites to recover the archeological evidence necessary to fix the dragons' chronological position within the history of the monasteries. Stylistic evidence, on the other hand, can be used now, for stucco decor and ceramic ornament frequently share motifs; the only problem is that too little research has been done on the buildings of the period. One fixed point appears to be the stucco decor on the *prāng* at Wat Cuḷāmanī near Phitsanulok, which can be dated to 1464 (fig. 1)³³. The glazed tiles in figure 2, which evidently originally served as fascias or eavesboards rising from rafter ends, were found at Wat Suan Kao Uthayân Nōi in Si Satchanalai, where fragments of Sawankhalok dragons and about 400 other whole

31 *LP*, C. S. 800, 810, 825, 850. On the problems of reconciling Paramatrailoka's supposed age with the date of his viceroyship, see Prince Damrong's comments in *Phra râtchaphongsâwadân chabap phra râtchahatlekhâ* (Bangkok, 1968), pp. 262-63.

32 Khanakammakân praprunḡbûrana bôrânsathân Changwat Sukhōthai lae Čhangwat Kamphaeng Phet, *Râi-ngân kânsamruat khuttaengbûrana bôrânsathân miang kao Sukhōthai* (Bangkok, 1969), illus. pp. 46, 88.

33 *LP*, C. S. 826; J. Y. Claeys, "L'Archéologie du Siam", *Bulletin de l'Ecole Française d' Extrême-Orient* 31 (1931): pls. LXV-LXVII, figs. 50-52. See also Michael Vickery, "The Khmer inscriptions of Tenasserim: A reinterpretation", *JSS* 61, no. 1 (January 1973), pp. 51-70.



Figure 1. Detail of stucco decoration at Wat Cuḷāmaṇī, Phitsanulok, probably 1464 A.D.

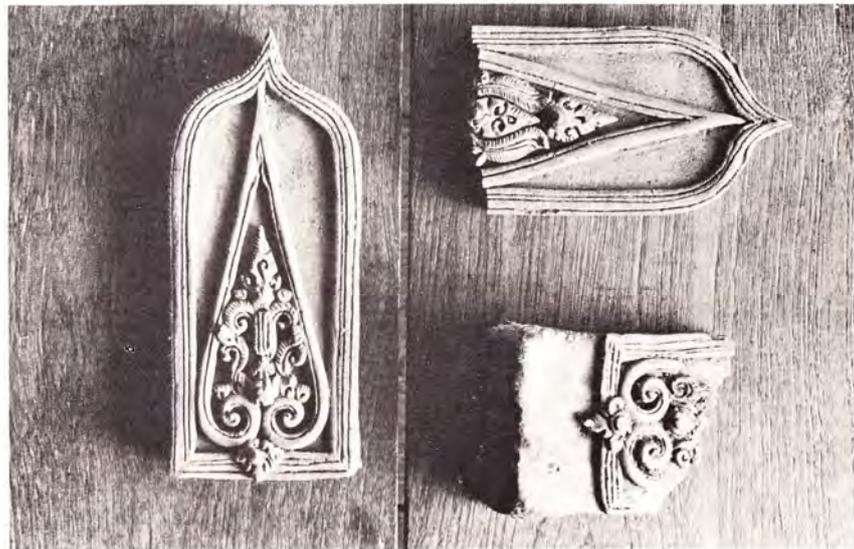


Figure 2. Glazed tiles, Sawankhalok ware, from Wat Suan Kaeo Uthayan Nōi, Si Satchanalai. Length of complete example, 19.7 cm. Rest house, Si Satchanalai (1970).



Figure 3. Dish, Sankamphaeng ware, diameter 27 cm. (After Kraisri Nimmanahaeminda, *Sankampaeng Glazed Pottery*, fig. 7).

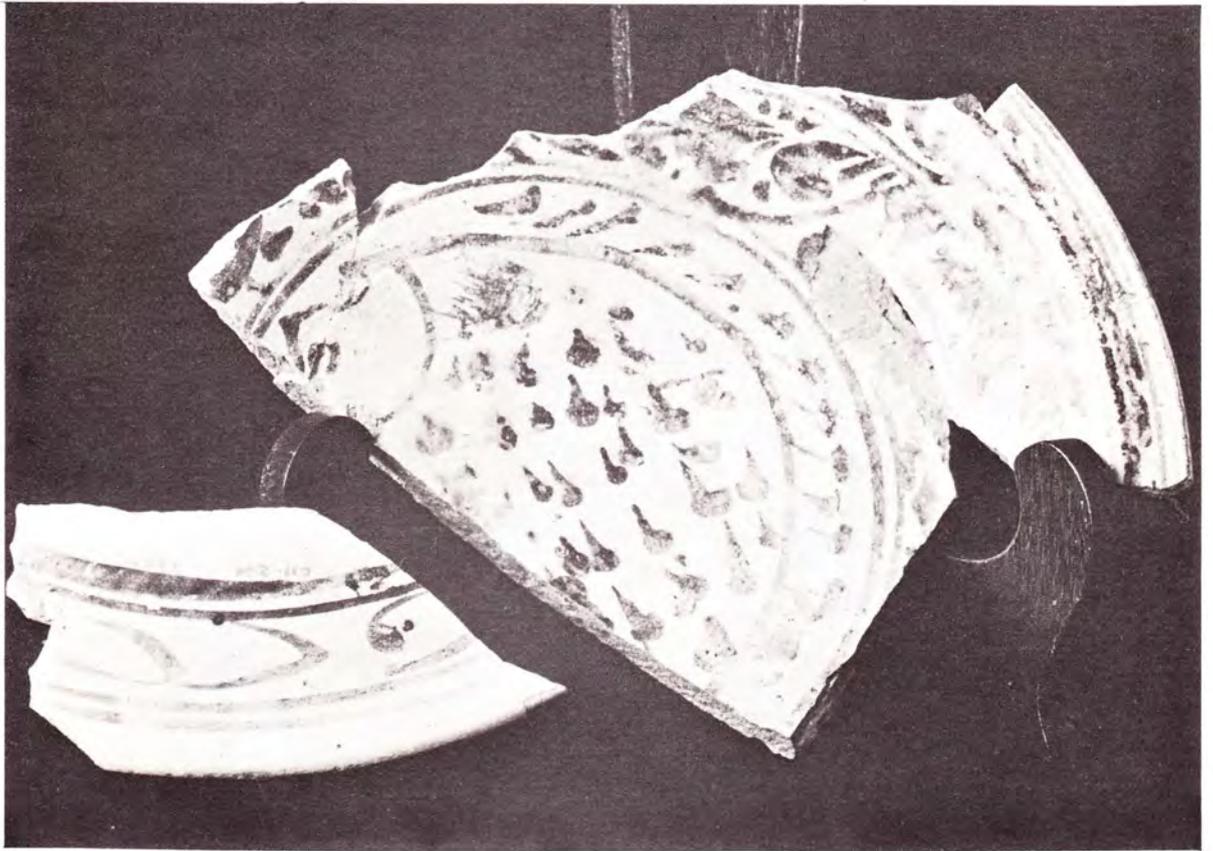


Figure 4. Fragments of dish, Sukhothai ware, from Suggan Cave, near Loay, island of Bohol, Philippines. Original diameter about 28.5 cm. University of Michigan Philippine Expedition, The University of Michigan Museum of Anthropology (33978).

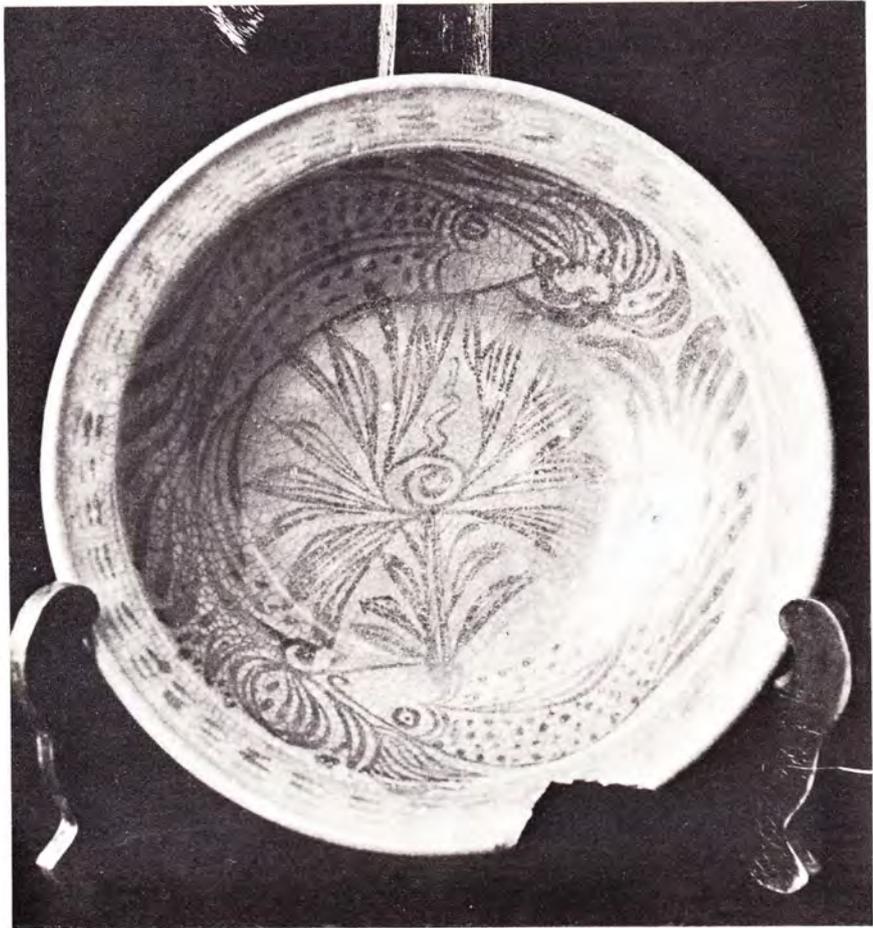


Figure 5. Dish, Sawankhalok ware, from burial site near the hamlet of Bo-od, Tubigon, island of Bohol, Philippines. Diameter 26.5 cm. University of Michigan Philippine Expedition, The University of Michigan Museum of Anthropology (19364).

glazed tiles have also been discovered³⁴. The vocabulary in figures 1 and 2 is comparable; both the stucco and the ceramic plaque are characterized by the presence of grooved frames and central elements from which spout symmetrical volutes with striated outer edges. But it is not possible to say at this point whether the roof ornaments date from before or after 1464.

There are no fixed points in the wares of Lan Na, nor is there a satisfying relative chronology for either the northern wares or those of Sukhothai and Si Satchanalai. Therefore isolating a group of closely related pieces from Sankamphaeng (one of the Lan Na sites), Sukhothai, and Sawankhalok leads only to highly tentative conclusions. The examples seen in figures 3, 4, and 5 demonstrate how similarly wares from the three sites could be organized. One possibility — of many — is that the period of significant artistic exchange between the two regions should be placed in the years between 1460 and 1474, when Chiang Mai was occupying Si Satchanalai. But would the exported Sukhothai and Sawankhalok dishes of figures 4 and 5 be later or earlier than the Sankamphaeng dish of figure 3? If these dishes represent different modes or traditions of decor, then it is impossible to say. If, however, one dish is the parent of the others, then most art historians would tend to think the Sankamphaeng dish (figure 3) the older, as it is easier to see figures 4 and 5 as stylized variants of it than it is to see it as being a later, elaborate version of either figure 4 or 5. One way to read the evidence, therefore, is as suggesting a period of artistic intercourse in the years between 1460 and 1474 and a subsequent movement in individual directions in Lan Na and at the Sukhothai and Si Satchanalai centers. The association proposed between the Sankamphaeng potters and an inscription of 1488 would be valid³⁵, but figure 3 itself would perhaps have been made before 1488.

Conclusions

Others will have to judge the merits of the case. Or, rather, the merits of the cases. The one for the fifteenth century is strong. The one for export primarily after 1474 is an hypothesis that must be tested. The Calatagan excavations, the slow resurgence of private Chinese trade, the 1474 regaining of Si Satchanalai, King Paramatrailoka's Phitsanulok seat, the stylistic connections between ceramic plaques and stuccowork, and between Sankamphaeng and Sukhothai and Sawankhalok dishes, all help make such an hypothesis seem plausible. But much other evidence — that provided by the ceramics of Viet Nam, for one, and eventually that provided by scientific excavation — will have to be analyzed before dates can be proposed with assurance³⁶.

34 Khanakammakān praprunḡbūrana bōrānsathān Čhangwat Sukhōthai lae Čhangwat Kamphaeng-phet, *Rāi-ngān kānsamruat lae khuttaengbūrana bōrānsathān müang Kamphaeng Phet müang Sísatchanālai* (Bangkok, 1971), p. 37. I thank Mr. Mali Khoksantiya for showing the tiles to me in 1970.

35 Kraisri Nimmanahaeminda, *Sankampaeng Glazed Pottery* (Chiang Mai: The Konmuang Publishing Company, 1960), pp. 3-6.

36 (March 1978.) In 1974 and 1975, a Thai-Danish expedition recovered quantities of Sukhothai and Sawankhalok ceramics from a ship sunk off Sattahip. I did not mention it, the evidence bearing on the date of the wreck seeming inconclusive. I now discover that I had overlooked (no doubt among other materials) Dr. Samrān Wangphā, "Pūn yai čhāk sombat tai thale" ("Cannon from the undersea treasure"), *Art and Archaeology in Thailand*, vol. 2 ศิลปะและโบราณคดีในประเทศไทย เล่ม 2 (Bangkok: Fine Arts Department, 1975). Dr. Samrān states (p. 57) that the finds "are sufficient to prove a date of about the end of the 20th century (B.E.) or the beginning of the 21st." The year 2000 B.E. fell in 1457. See also Roxanna M. Brown, "Preliminary report on the Koh Khrām sunken ship", *Oriental Art*, winter 1975; Watcharin Phumphongphaet, "Rāi-ngān kānsamruat bōrānkhadī tai samut nai 'ao Sattahip khōḡ nakbōrānkhadī", *Sinlapākōn* 19, no. 3 (September 1975): 74-107.