



The SUPPORT Arts and Crafts  
International Centre of Thailand  
(Public Organization)



## Arts and Handicrafts

# Pradup Mook – Shell Type



**Pradup Mook**, or shell dressing, is a form of fine arts made from sea shell. It is a part of Thai Krueang Rak Handicraft (Lacquer Coated Ware) that represents Thai craftsman's meticulous and delicacy with such fine art. This art was originated from the ancient craftsman, who invented and created various wisdoms for this art, from Pook Lai (pattern designing), Thom Lai (patter coating), and Chalu Lai (patter cutting). The craftsman uses the shell of Hoi Mook Fai (Turban shell) and cut the shell into the desired pattern. The production of Pradup Mook ware requires meticulous care in every process. According to the tradition, Pradup Mook ware is usually used in the events that are related to the monarch or the religion. Pradup Mook ware can be found as

utensils and equipment for the monarch, containers used for the royal ceremony and for presenting alms to the monk. It can be found prominently in the royal monastery, such as, Tu Phra Tham (Dharma Cabinet), Thamart (Sermon Altar), Taloom (a kind of container), Pan Wan Fah (a kind of container), the rim of the monk's alms bowl, the leg of Talapad (monk's tailpot fan), etc. In the past, Pradup Mook ware was considered to be high class equipment; but nowadays, it is endangered art and handicraft that about to disappear. There are less and less experts in this fine art, and rarer successor, who has the passionate to inherit this craftsmanship.





## Pradup Mook: unique identity that reflects the craftsman's wisdom and ability

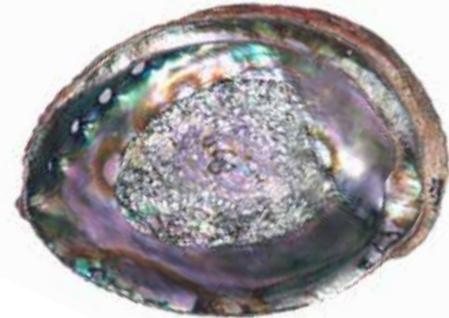
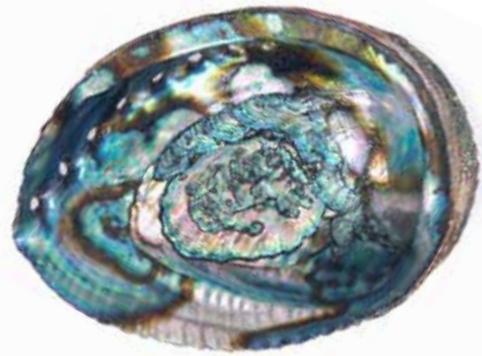
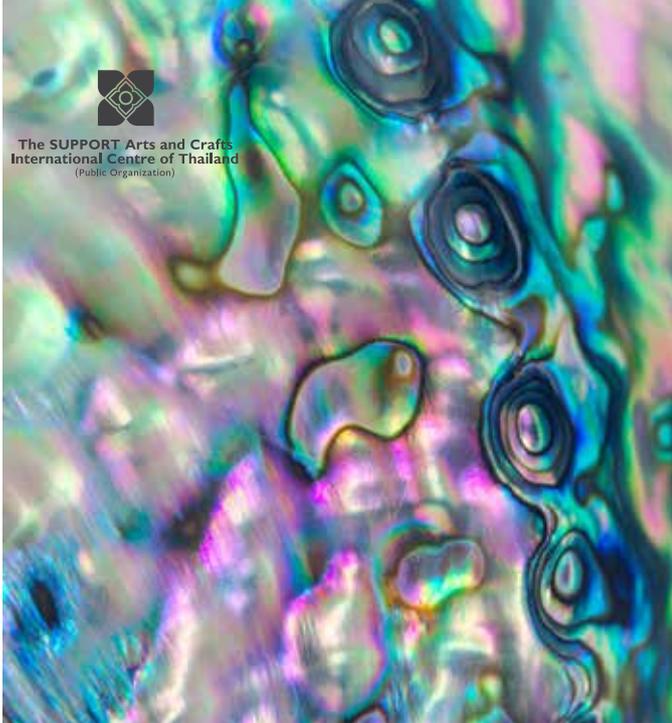
Pradup Mook ware is created by decorating the base workpiece with shiny seashell. Once the light reflects of the shell, the result is the rainbow-like reflection. Pradup Mook ware is usually used as a decoration for the door and window of the temple, monastery, even the royal palace. Pradup Mook ware is also used as a decoration for various tools and equipment, such as, table, cabinet, bed, tray with pedestal, etc. Pradup Mook is considered as a high class craftsmanship that requires extreme meticulousness and delicacy, and highly skillful craftsman, to produce a graceful product.

### Hoi Mook: the heart of Pradup Mook ware

The most important aspect of making a Pradup Mook ware is choosing the right type of sea shell (known as Hoi Mook). The craftsman will only choose the sea

shell that, after the external limestone is removed, has reflective and shiny surface. (The craftsman calls that such sea shell Mee Fai, or shiny.) Each type of the shellfishes has different quality and characteristic, and the most popular type of sea shell used for Pradup Mook ware comes from Hoi Aut (Turban Shell), Hoi Koang, Hai Pao Hue (Abalone) or Hoi Roi Roo, Hoi Jahn, Hoi Karb Nam Jued (Fresh Water Bivalve), Hoi Nom Sao (Nile Top Shell), etc.

Different type of sea shells has different shine and reflection. The finished workpiece' shine and reflection thus depend on the type of sea shell picked and used by the craftsman. Highly shiny sea shell will be expensive, and therefore, less reflective sea shell will be cheaper. The result workpiece will therefore be more expensive or cheaper, as grade of the sea shell used for producing that workpiece. Therefore, the sea shell's price is a factor that regulates the product's price. The sea shell's strength is another important factor that make the shell cutting easier or harder as well.



### The type of sea shell used for Pradup Mook Ware

1. Shell of Hoi Mook Fai, Hoi Aut, Hoi Khong Kiaw, or deep sea Hoi Kohng; these sea shells may be called with different names, from one area to another. The shell will be covered with limestone (calcium carbonate) of different thickness. The inner shell will be coated with secretion made by shell (known as shell's saliva". The craftsman must first scrub the limestone off from the outer shell, which will reveal the shell's shine and reflective surface. The rainbow-like reflection makes these shells known as 'Hoi Mook Fai' Nowadays, these shells are mostly imported from other countries, such as, Myanmar and India. I Thailand, such shell can be found in Andaman Sea.

#### Characteristics of Hoi Mook Fai

- 1.1 Reflect natural light
- 1.2 Natural glossy surface
- 1.3 Large usable surface
- 1.4 The shell's core can be used as a component of *Hua Khoang* (such as, the giant's fang)
- 1.5 Shell's *Kue* (an organ of the sea shell) can be used as an ingredient for the Chinese medicine.
- 1.6 The curve part of the shell is normally used as part of the sacred image's eyes.

2. Shell of Hoi Som Sao; this shell can be found in the Gulf of Thailand, at the depth of less than 30 meters. It comes in the shape of a cone or triangle. It is less colorful than Hoi Mook Fai and mostly available in white or green. This type of shell is not a popular choice of raw material for Pradup Mook Ware, because it presents less usable area.

3. Shell of White Hoi Mook Jahn; this is a kind of Bivalve, found in Andaman sea, especially in the sea of Phang Nga, Phuket and Ranong. It also produces pearl and its shell is yellowish white. This kind of shell is widely used in the creation of Pradup Mook ware, as its surface presents large usable area. It is raised in a pearl farm for ornament production. Once the sea shell is no longer capable of making the pearl, its shell will be sold to factory that makes Pradup Mook ware, and its meat will be used for cooking. Another variant of this shell is Black Hoi Mook Jan (Mook Talay Jin Tai), which is prominently found in Vietnam (Da Nang City) and used for creation of belt's buckle or ornaments.

4. Shell of Hoi Pao Hue (Abalone) or Hoi Roi Roo; there are 2 types of this shell, namely, *The Green Hoi Pao Hue*, found in Andaman Sea, in Phang Nga, Phuket, and the Gulf of Thailand. The craftsmen in China and Vietnam usually use this shell to create embed shell ornament. Another type of The Pink Hoi Pao Hue, which is imported from other countries, namely, Australia and Philippine.

5. Shell of the Sea Fan. This shell comes in pinkish white. It is widely used because it is cheap, and can be prominently found in the sea of Phang Nha, Phu Ket, and the Gulf of Thailand.

6. Shell of fresh water Hoi Karp (Clams). This shell can be found in Mae Klong River, and Ta Jin River, and in the Northeastern rivers, including Chi River and Mun River.

7. Shell of fresh water Hoi Mook; it is found in Kanchanaburi Province, and comes in purplish green. The pearl from this shell comes in various colors, depending on the environment of the fresh water where it is growing up.



## General configurations of utensils made as Pradup Mook Ware

Various utensils are made as Pradup Mook Ware, and these utensils represent the unique identity that represents the gracefulness and meticulousness of Pradup Mook Ware, as well as the wisdom and ability of the ancient craftsman. General configurations of utensils made as Pradup Mook Ware are, as follow.

1. Phan-type (tray with pedestal), which is used for presenting the offerings to the monk or for other purposes, such as, octagon tray, round tray, lotus-shape tray, etc. The type of Phan can be further categorized per their size, shape, and application, for example, Taloom and Phan Wan Fah.

- Phan Wan Fah, a special type of tray with pedestal used for religious activities, such as, Buddhist ordination, Katin Offering ceremony, etc. Phan Wan Fah comes in a form of double decks tray, and in a shape of large square.

- Taloom; this is the same type of utensil as a Phan, and comes different sizes. Large Taloom is used for presenting the offerings to the monk, such as, Pa Trai (monk robe), flower, candle, joss stick, etc. Small Taloom is used for presenting betel nut to the monk.

2. Box-shape utensils; there are several types of box shaped utensils, with different names and purposes, such as, Loong, Jiad, medicine box, tobacco box, betel nut box, etc.

3. Tray-shape utensils; Thai tray is usually made with high edge, and known as Kraba (the high tray), and comes in the both round and square shape. The tray is used as general container; and if it is used for containing the offering, it will be called the worshiping tray; if it is used for containing betel nut, it will be called the betel nut tray. A type of tray has legs, and it is known as Kraba Ki, and used as the container of tea set.

4. Utensils used by the monk. Monk's utensils are mostly made as Pradup Mook Ware, including, cover and rim of the monk's alms bowl, monk's rank fan and tailpot fan.

5. Utensils, equipment and decoration of the architectures used by the monarch and Buddhism, such as, royal utensils, door, window, monastery, temple, cabinet, table, desk, bed, furniture, etc. These are mostly made with strong wood, and decorated with Pradup Mook ware.

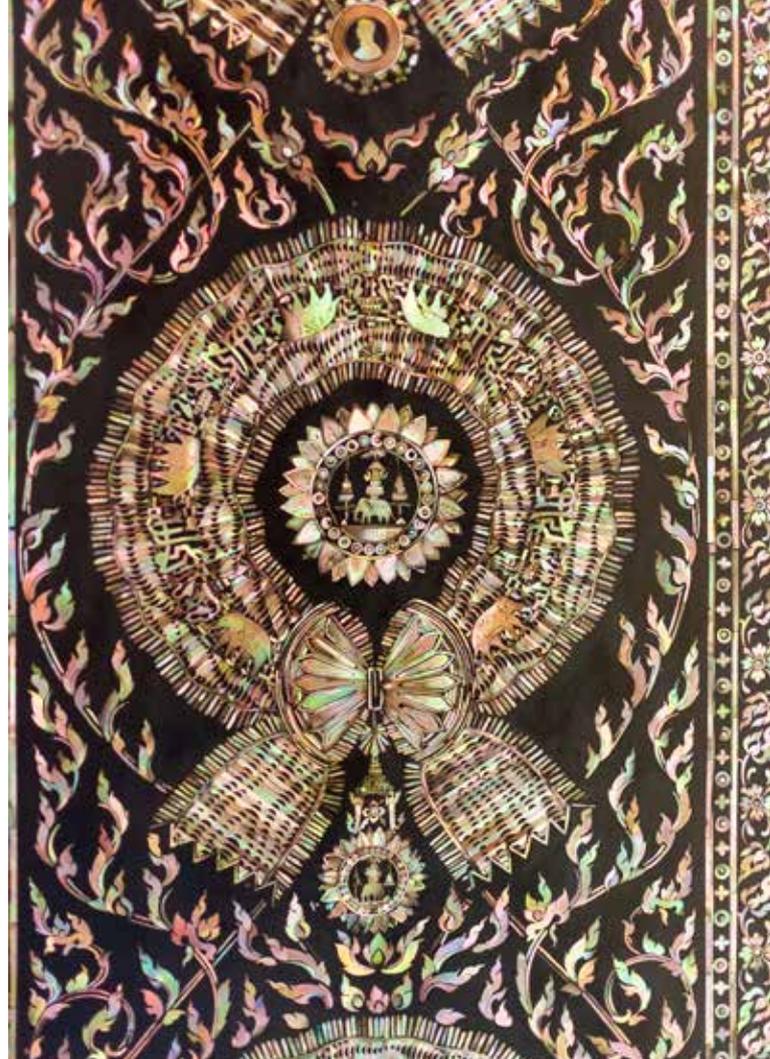


## The history of Pradup Mook Ware

From the excavation site of the ancient remains in Khu Bua Subdistrict of Ratchaburi Province, the evidences of Pradup Mook Ware used as a decoration for the pagoda were found. Pradup Mook was also found as a method for decorating the eyes of the sacred images of Buddha made in the art of Larn Na, Sukhothai, and Ayutthaya. The oldest evidence of using sea shell in the decoration came from Ayutthaya Era, in the form of Pradup Mook Tripitaka Cabinet. Somdet Phra Chao Boromma Wong Thoe Chao Fa Krom Phraya Naritsaranuwattiwong, conjectured that such Pradup Mook Cabinet was made with the design and pattern popular during the reign of Somdet Phra Chao Sue, around 1703 – 1708. It has the pattern of Kranok Ham Nak (Naga's Tale Fire Pattern), the cabinet's left door contains the pattern of Somdet Phra Narai, riding the Garuda. This cabinet was bestowed to the National Museum by Somdet Phra Chao Boromma Wong Thoe Chao Fa Paribatra Sukhumbandhu Krom Phra Nakhonsawhanworrapinit. Other examples of Pradup Mook Ware are Pradup Mook Doors made during the reign of Somdet Phra Chao Borommakot

(Somdet Phra Borrom Rachathirat Ti Sarm), namely, the door of the monastery in Wat Phra Si Mahatart, which is the house of the sacred image of Buddha - Somdet Phra Puttachinnart in Phitsanulok Province; the door of the monastery in Wat Borrom Puttaram of Phranakhon Si Ayutthaya Province. One side of the door was modified into a Tripitaka Cabinet and now stored in the Bangkok National Museum, another side of the door is now used as the door to the Hor Montiantham (The Tripitaka Tower) of Wat Phra Si Rattana Satsadaram.

During Rattanakosin Era, in the reign of Phra Bat Somdet Phra Phutthayotfa Chulalok (King Rama I), after the construction of Wat Phra Si Rattana Satsadaram was complete, His Majesty ordered the construction of Pradup Mook doors and windows for the royal monastery, the house of the Jade Buddha, and the doors of Phra Mondop (a kind of structure in the temple). When His Majesty restored Buddha's Footprint in Saraburi Province, His Majesty ordered the construction of Pradup Mook Ware, as a component of Phra Mondop, instead of the original one that was lost in the fire.



During the reign of King Rama III, Phra Bat Somdet Phra Nangklaao Chao Yu Hua, His Majesty restored Wat Phra Chettupon Wimonmangkalaram. For this occasion, His Majesty ordered the construction of 4 panels door, made with Pradup Mook Ware, with the pattern tells the story from Ramayana. This is an example of a graceful – modern Pradup Mook Ware, which is drastically different from original Pradup Mook ware. His Majesty also ordered the decoration of Pradup Mook ware as the 108 Auspicious Subjects, on the feet of the sacred image Phra Putta Saiyart (The Sleeping Buddha) in the monastery as well.

During the reign of King Rama IV, Phra Bat Somdet Phra Chom Klao Chao Yu Hua, His Majesty ordered the construction of Phra Putta Rattanatri Tower in the Royal Palace, where both frontal and rear doors were made with Pradup Mook ware. After the Second World War, these doors were severely damaged and have to be removed and stored in the royal inventory. During the reign of King Rama IX, the building's murals were restored, along with the original Pradup Mook doors, which had been repaired and re-attached to the building.

During the reign of Phra Bat Somdet Phra Chula Chom Klao Chao Yu Hua, while the construction of Wat Ratchabophit Sathit Maha Simaram Ratcha Wora Maha Wihan, His Majesty ordered to used Pradup Mook doors and windows, which were the royal insignias, from Prasart Phra Thep Bidorn Palace, for the temple. This was because the royal palace was burnt but the doors and windows were still in contact condition. These doors and windows were therefore used for the new monastery, and they are distinctively different, with their own unique identity, from other Pradup Mook ware of other eras.

Nowadays, Pradup Mook Ware isn't most popular anymore. This is because Pradup Mook Ware is quite expensive. As a result, skilled craftsman in this handicraft losses some significant income, and thus, there are only few craftsmen with the knowledge in make Pradup Mook Ware left. Moreover, in order to produce each workpiece, the building process requires extremely long time, and the buyer has to wait for a long time as well. Therefore, Pradup Mook Ware is no longer popular anymore.



## The method for making Pradup Mook Ware

### The raw materials / equipment for making Pradup Mook Ware

1. Thong Larmg's wood (Tiger Claw), Whai Nam (Calamus godefroyi Becc.), Thai Bamboo
2. Knife for making the Tork (Stripe) with round tip for dressing the corner
3. Lek Mart (Awl), Lek Ok Gai (a kind of metal tool), wooden hammer
4. Trowel, epoxy, latex glue, shellac
5. Whetstone, polished stone, Look Chan Stone, rasp, electric grinder
6. Saw blades of different sizes for cutting out the pattern, scissor, cutter
7. Stationery and designing tools, for designing the pattern for Pradup Mook Ware, such as, pencil, eraser, measurement tool, Japanese Mulberry paper
8. Pliers
9. The model used for Pradup Mook Ware. These models come in various forms and raw materials, such as, rattan, bamboo, metal. The model provides base configuration of Pradup Mook Ware, such as, the door, Phan Wan Fah, box, etc.
10. Sea shell used for Pradup Mook Ware
11. Samook (a kind of solution) made from coconut's shell; as it is quite strong. Some craftsmen also use Samook made from Banana's leaf during the last process, in order to finish the fine detail of the workpiece.
12. Lacquer; this material is used for coating the workpiece and holding the components together, as well as improving the durability of the workpiece's surface.
13. Substituted material for lacquer; nowadays, natural lacquer is hard to come by and quite expensive. Using natural lacquer makes the total work process more complicate and longer, some craftsmen also develop allergic reaction to natural lacquer. Therefore, other materials are used as the substitute for natural lacquer, such as, putty, epoxy made from A and B substance.





## The method for making Pradup Mook Ware

There are 2 method for turning the designed patterns into Pradup Mook Ware, namely.

1. Pattern attaching method; once the sea shell is cut into the desired pattern, the craftsman will attach the sea shell onto the workpiece, then put Samook onto any space left by the pattern on the surface.

2. Pattern burying method; once the sea shell is cut into the desired pattern, the craftsman will gouge out the workpiece's surface, with the shape of the pattern and the depth of the sea shell. The sea shell will be buried in the carved out area, and any space left will be filled. This method provides stronger and more durable workpiece that pattern attaching method.





## The method for preparing the model for Pradup Mook

1. Model preparation is a process where the craftsman prepares the model of the utensil that he will make as a Pradup Mook Ware, whether it is a Taloom, Phan Wan Fah, etc. Raw materials used for preparing a model are, as follow.

Rattan; there are 2 types of rattan used, namely, Wai Nam (Water Rattan) and Wai Num Pueang (Honey Rattan). The rattan must be dried and baked, in order to eliminate any mold. The rattan stripe will be 8 – 10 Sorks in length. Rattan is lightweight, with highly porous surface that allows lacquer to attach to the workpiece's surface easily. High quality rattan comes from Ranong Province. Both types of rattan are sold at stores around Phu Khao Thong and Ban Mon, Bang Kradi of Samut Sakhon.

Thong Larmg's wood (Tiger Claw). Ancient people believed that Tiger Claw is an auspicious plant that attracts fortune and money to a person. To use its wood, Tiger Claw's wood must be cut and left to dry for at least 1 year, until its bark falls off by itself; only then that the wood will be usable. The craftsman usually does not use green Tiger Claw's wood, this is because after molding, the wood can contract and thus creates twist and fracture on the workpiece.

Thai Bamboo; after it is dried, Thai Bamboo will be quite strong. It is a suitable raw material for use as a pin to hold down various part of the model, instead of using a nail.

In order to create a model for a Taloom, the craftsman will start from whetting the Rattan Tork. That is, cutting a stripe of rattan into 2 pieces, this process is known as Juk Song, and then into 4 pieces, which is known as Juk See, in order to acquire the desired size of Rattan for the targeted product. The craftsman will whet the rattan into a stripe of regular thickness and width. The rattan stripes will be placed into a coil, one stripe directly lays over another. A Taloom is a container with either 10 or 12 corners, while a Phan Wan Fah is a container with 8 corners and sides of un-equal length. The craftsman will cut the Tiger Claw's wood into thin sheet, for the amount of the desired amount of the workpiece's corners, and then lace the wooden sheets inside of the model. The rattan and the wooden sheet will be held in place with the pin made from



Thai Bamboo, instead of using the nail. The craftsman will use a knife to whet and leveling the outer side of the model, and to dress the inner's corners of the model. The workpiece will be coated with glue or shellac, in order to hold the rattan, wooden sheet, and bamboo pin together.

2. Pattern designing or drawing; the craftsman must first consider the model and find appropriate pattern for it. The craftsman will select appropriate model for the contextual preference of that community, such as, Lai Ted, Lai Gruay Cherng, Lai Kranok, Lai Prachamyarm, Lai Krajung, Lai Phanna Prueksa, Lai Dork Puttarn, as well as patterns of magical animals from the Himmaparn Forest, such as, Kinnari, Kodchasi, etc.

The pattern drawing depends on the craftsman's expertise, and all these masters patterns were designed and used in the royal palace, royal temple, Dharma Cabinet, Tripitaka Cabinet, etc, thus, the craftsman will rely on the same source for the pattern designing. Therefore, in order to apply appropriate patterns to any individual utensils, in a manner that reflects the unique characteristics of a Taloom, Phan Wan Fah, or Tiab, this process will require the craftsman's unique ability.

To design the patterns used for Pradup Mook Ware, as one of the raw materials is the sea shell, and as any sea shell will contain natural curve; by their wisdom, the ancient craftsmen solved this issue by scaling down the patterns, make them smaller and shorter, and separating the patterns into a combination of a pair line, so that the carving master can produce the correct pattern onto the sea shell. Different patterns will be chosen for different parts of the utensils, in a way that boosts the workpiece's prominent point.



NONONO



The designed patterns or drawings will be prepared as 3-4 copies, by photocopying. The first copy will be used as a reference for verifying the pattern, the second copy will be attached to the shell, using water glue, for the purpose of carving the pattern later. The third copy will be used for the purpose of dressing the pattern's detail, where, after the carved out shell is polished, each piece will be placed onto this third copy, in order to prevent them from missing, and to facilitate the craftsman when he attaches the carved shell onto the workpiece.

3. Cutting, carving, or sawing off the shell under the pattern; the craftsman will use a saw blade to carve out each piece of the pattern. The piece will be polished, where the saw mark will be removed; and then dressed with rasp and sandpaper of various sizes. The finished piece of the pattern will be attached to the copy of the pattern, await later assembly onto the workpiece.

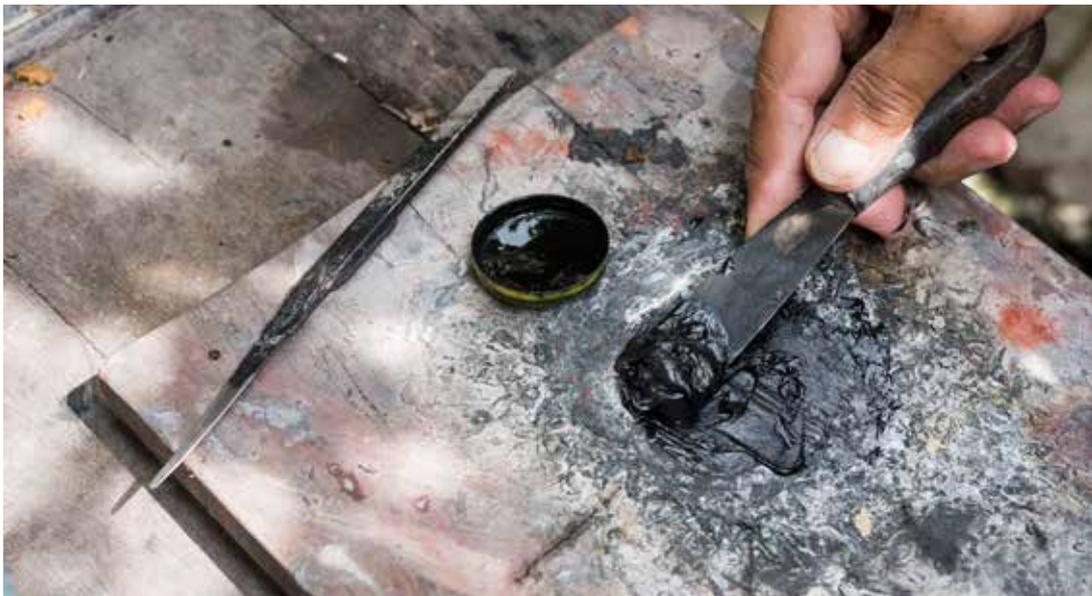
4. Assembling the pattern; the pattern will be copied onto the workpiece, using the dusting method, the same method used by the craftsman of Lai Rod Num technique. The pieces of the pattern made with sea shell will be individually removed from the pattern copy, and then attached onto the workpiece, at the correct position. Lacquer and Samook will be used as the adhesive material. After all pieces are attached to the workpiece, the craftsman will let the lacquer to dry, then coat the workpiece with another layer of lacquer, in order to firmly attach the sea shell to the workpiece, before filling in the space.

5. Filling the gap and space with Samook; after the coating lacquer is completely dried, the craftsman will mix the lacquer and Samook to appropriate viscosity, then use that Samook to fill the gap and space on the surface of the workpiece. The first layer of Samook filling will be approximately at half of the actual depth of the space. The craftsman will leave the first filling layer to dry, then fill another layer over it, and repeat this process two or three more times, until all the spaces and gaps are filled. The craftsman must wait for each layer to completely dry, before he can proceed to the next layer. (Each layer of lacquer requires 5 – 7 days to completely dry.)

In order to fill in the gap in the pattern, the ancient craftsman mixed lacquer with 'Samook' and create a black solution. Samook is a material made by burning coconut shell, dried banana leaf, or grass, into black charcoal. The charcoal will be crushed into fine powder, and mixed with lacquer, before used to fill the gap on the workpiece.

Lacquer is a natural product made by a medium size standing tree that grows abundantly in the mixed forest in the North, the Northeast, and the South. Lacquer is a natural raw material, comes in a form of sticky goo. It can be applied or coated over other products. Nowadays, using natural lacquer is rare for making Pradup Mook Ware. This is because natural lacquer is hard to find, quite expensive, and requires a complex process to prepare. Moreover, some craftsmen developed an allergic reaction to natural lacquer, therefore, the filling process is now done using 2 substituted materials, instead of lacquer, namely.





**Car Putty;** this material is available from many brands, and the craftsman can conveniently choose and use any of them, by mixing with black paint, catalyzer, and putty glue. The craftsman can then use the mixed solution to fill the gap of the workpiece. Nowadays, craftsman mostly uses this type of material, because it allow him to complete his work faster and in time, as well as to reduce the cost of production while maintain the workpiece's quality and gracefulness.

**Epoxy;** epoxy is another popular alternative to lacquer for filling the gap. The craftsman will mix epoxy and powder paint, at the proportion of 1 : 1, then apply the mixture onto the workpiece, after the pieces of sea shell are attached. The craftsman will test and look for any small hole by rubbing water over the workpiece. The workpiece will be left for 3 hours, after filling, then polished, using electric grinder, to reveal the pattern underneath.



6. Shadow casting; for Pradup Mook Ware, some patterns, such as, leaf and flower pattern, additional shadow will be placed into the pattern, with a process known as *Rare Lai* (Shadow Casting), in order to provide additional details to the pattern, such as, the leaf's vein, and flower. In this process, a tool called *Lek Ok Gai*, which is used for jewelry dressing, can be used for this purpose as well. The craftsman will make the insertion and wipe the mark with lacquer, the lacquer will penetrate the mark, and the result will make the workpiece more beautiful.

7. Polishing the workpiece's surface; after the lacquer is dried, the next step is to polish the workpiece's surface with emery whitener and sandpaper of different roughness. The craftsman will polish the workpiece's surface and reveal clear pattern underneath, until the complete pattern is revealed clearly.

8. Glaze polishing; the craftsman will tear dried banana leaf into thin strips, dip it into coconut oil, then sprinkle fine Smook powder over the workpiece and then polish it with such dried banana leaf. The polishing process will be done by hand until the surface is heat up, the surface will be naturally glossy, without the need to use glaze oil.





## Maintaining Pradup Mook Ware

1. *Chet Rak and Torn Rak*; after you have acquired a Pradup Mook Ware, you can maintain the product using a process known as Chet Rak and Torn Rak. Dip a piece of cotton or rag into lacquer, and wipe the piece over the workpiece, this process is known as *Chet Rak* (Lacquer Wiping). Leave the workpiece for sometimes, then use a clean piece of cotton to remove the Lacquer (Torn Rak – Lacquer Removing), the surface will be glossy black and the shell will be shiny again.

2. Use strips of banana leaf dipped in coconut oil; the ancient craftsman used strips of banana leaf dipped in coconut oil, or a piece of clean cotton and coconut oil, to clean the surface of Pradup Mook Ware. Then remove the cleaning agent by wiping a piece of clean cotton over the workpiece in circular motion. The result is shiny and glossy workpiece. This process restores the shine of Pradup Mook Ware.

In any cases, if we're going to take a deeper look at the craftsman of Pradup Mook Ware, we will see that their workpieces are closely related to culture, tradition, and religion. Therefore, the craftsman must be knowledgeable, and understand about, the underlying subjects, before applying them to design or draw the patterns, for example, the stories of Buddha's biography, Thai literature, or even imaginary animals from Thai literature, such as, Ratchasi, Kotchasi, Kinnari, Kinnorn, etc. This is because this type of handicraft is mainly used as the royal utensils or tools and equipment for the royal custom, as well as the monarch's offerings to the Buddhism.





#### Information sources and referenced documents for preparation of this article

*Interview. Mr. Saneh Jamjirarak. Bang Yai District, Nonthaburi Province.*

*Information from Mr. Sanan Rattana.*

*Culture, historical development, unique identity and wisdom of Nonthaburi Province*

*Model Structure for Preparing the Knowledge Base on Pradup Mook Craftsmanship. Thai Arts and Handicrafts Master Group. Office of Traditional Arts. Fine Arts Department. 2010 Issue.*

*Fine Arts Department. Thai Fine Arts. National Museum Division. Bangkok: Roonsilp Publishing (1977)*

*Jirapan Somprasong. National Arts Sor. Por. 231. Bangkok: Odeon Store Publishing.*

*Peenalin Sariya. Pattern Designing. Bangkok: Odeon Store Publishing.*

*The Royal Society. The Royal Society's 1999 Dictionary: Nanmee Books Publishing, 2003.*

*Professor Choti Kanlayanamitr. The Dictionary of Architecture and Related Arts. Bangkok: Mueang Boran, 2005.*

*Sompop Piro. Prof. Capt. Informal Essay No. 13 "Thai Pradup Mook Doors and Windows of the World" (As a memorial for the funeral of Mr. Prakit Tungtrongjit, at the Crematory of Wat Piren Temple). Bangkok: Grung Siam Karn Pim Publishing, 1971*

*Fine Arts Department. Mook Ware. (Published by the Fine Arts Department for the special exhibition, for the honorary ceremony of the 100<sup>th</sup> birthday of Somdet Phra Chao Boromma Wong Thoe Chao Fa Paribatra Sukhumbandhu Krom Phra Nakhonsawhanworrapihit, on June 24th 1999). Bangkok: Pikkaset Publishing, 1981*

*Lord Wilat Sillapakrom (Mr. Chue Pattamajinda). A handbook of Pradup Mook Craftsmanship. Bangkok: Mueang Boran Publishing, 1981.*

*[www.changsiptmu.com](http://www.changsiptmu.com) ,[www.finearts.go.th](http://www.finearts.go.th), [www.rcmsc.com](http://www.rcmsc.com)*