

Capítulo 8

DE LA FÁBRICA DE EMBARCACIONES; COMO LA USAN ESTOS NATURALES; SU HECHURA, PORTE Y VARIEDAD

Si en alguna arte han sido diestros nuestros bisayas, y lo son casi naturalmente todos, es en la carpintería; y aunque, cuando tratemos del modo de sus poblaciones y casas en su antigüedad, diremos de sus casas y la curiosidad de algunas de ellas.

En general sólo digo que, aunque comúnmente tienen poca curiosidad, y menos las que tienen en sus sementeras, desde donde viven de asiento, con todo yo alcancé algunas casas de los principales, hechas antes de venir acá los españoles, y muchas de las iglesias y casas de los Padres en sus pueblos, que fueron las primeras que después de ser cristianos habían edificado – ya cuando escribo ésto no hay en pie ni una de las antiguas –, cierto que estaban con mucha curiosidad de labores, y con muchas como aldabas de hierro, pero eran de madera, sacadas del mismo palo, como si fueran puestas aparte; muchos caimanes y otros animales entallados en las llaves o vigas – señal que entre ellos había antiguamente, más que ahora, muchos que se preciaban de escultores, y, aunque no de cosas de bulto, sí de muchos rasgos y florones, rayados con no poca curiosidad.

Y así las más de las cruces primitivas que estaban en los patios de las iglesias o cementerios, o en los pueblos, estaban muy bien labradas y con muchas flores y follages primorosos; porque, verdaderamente, se preciaban más de estos labores en su anti-

Chapter 8

CONCERNING THE CONSTRUCTION OF SHIPS SUCH AS THESE NATIVES USE; THEIR SHAPE, THEIR CAPACITY AND VARIETY

If there is any art in which our Bisayans have been skillful, and almost all are naturally so, it is in carpentry. When we treat the style of their dwellings and homes in ancient times, we shall speak of their houses presently and the curious features of some of them.

In general, I shall only say that although ordinarily they have little that is exceptional, even less those which they have in their fields where they live at time, all in all, I have known some houses of the *principales* built before the arrival of the Spaniards here, and many of the churches and houses of the *padres* in their towns which were the first they had built after becoming Christians. Now, as I write this, there is not one of the ancient ones standing. It is certain that they were of very curious workmanship and with many pieces like iron door knockers. But these were of wood carved from the log itself as if put on separately. Many alligators and other animals are carved on the keys or beams. This is a sign that in ancient times there were many more among them who were wood carvers than now. However, they did not do figures but many lines and large variegated flowers of great curiosity.

Similarly, most of the primitive crosses which were in the patios of the churches, or cemeteries, or in the towns were very well carved and with many flowers and foliage elegantly done. Truly, they esteemed this work much more in ancient times than

guedad que ahora, y había muchos mejores carpinteros, aunque tenían menos herramientas que hay ahora, no sé si, o por que se les paga mal y poca, o porque no les saquen de sus pueblos, o por otras partes; que, con ocasión de las fábricas de naos y galeones nuestros, de que ha habido no pocas, o de las casas de los encomenderos, sacaban muchos de las suyas, cosa que ellos sienten mucho. Y, como veremos en su lugar, ha sido parte o causa de mucho menoscabo que ha habido en los naturales, y también de algunos alborotos y alzamientos de pueblos, como veremos en la *Segunda Parte* de esta *Historia* en el *Libro 3*, etc.

Vengamos ya a la fábrica propia suya y variedad de embarcaciones que usaban en su antigüedad, o para buscar lo necesario para su vida – por vivir, como vivían, en isletas o ríos donde era fuerza ir por agua, o para sus *mangayao*¹, que llamaban; y para ésto eran las más y mayores, que fueron muchas las piraterías, robos o guerrillas que tenían siempre entre sí, como veremos más abajo en este *Libro*.

Para su ordinario ministerio, que eran pescas, cazas, idas de unas islas a otras, y para buscar lo necesario para su sustento, usaban de embarcaciones de un palo, que llaman estos naturales *baloto*, y los Tagalos *banca*.

Estos eran, y son hoy, de varios tamaños y hechuras, algunos muy grandes y capaces de mucha gente, otras pequeñas, y tanto que servían para un solo hombre. Y he visto yo muchas veces salir de su casa el indio y llevar al hombro su embarcación, llegar a la playa del mar u orilla del río y ponerla en el agua, y embarcarse en él, o solo o acompañado, y llevar sus perros también; y, a la vuelta, volver, en desembarcándose, a cargar su embarcación al hombro y llevarla bajo de su casa, donde la guardan; de lo cual se colegirá qué tan grande puede ser.

Añado acá una advertencia que acá hacemos muchas veces los PP. Ministros, y los españoles no pocas, con admiración, tocante a estos sus *balotos* y su modo de embarcarse en ellos, y es que suelen en uno bien pequeño ir embarcadas diez y doce y más personas, de modo que apenas saca un dedo de bordo sobre el agua, y con

they do now. There were much better carpenters although they had poorer tools than they have today. I do not know whether it is because they are paid badly and little, or because they do not want to be taken out of their towns either to other places for the purpose of building our ships and galleons, of which there have been quite a few, or because of the building of the houses of the *encomenderos*, which they resent very much. This, as we shall mention in its place, has been the occasion or cause of much loss incurred by the natives and also of tumults and uprisings of the people, as we shall see in the *Second Part* of this *Historia*, in *Book 3*, etc.

We now come to the construction process itself and the classes of ships which they used in ancient times, either in seeking what they needed for life (since they lived in little islands or rivers where it was necessary to travel by water) for their *mangiyaw*,¹ as they called it. For this they used the greatest number and the largest ones. They were constantly engaged in piracies, plunder and guerrilla wars, among themselves, as we shall see later on in this *Book*.

In ordinary undertakings, which were fishing, hunting, traveling from one island to another, and to look for what was needed for sustenance, they used vessels of a single log which these natives called *balutu* and the Tagalogs, *banka*.

These were and are today of various sizes and shapes. Some were very large and with a capacity for many persons. Others were small, so much so that they were used for one person alone. Many times I have seen a native go out of his house, lift his boat on to his shoulders to carry it to the seashore or the bank of the river. He places it in the water and embarks either alone or with a companion and taking his dogs also. On his return, he gets out and lifts his boat to his shoulders and carries it under his house where it is kept. From this, one can judge how large they can be.

I add here a remark which the father ministers and the Spaniards often make, mostly in admiration, concerning these *balutus* and their mode of traveling in them. It is that ten or twelve or more persons are accustomed to travel in a very small boat so that a finger can scarcely be placed on the outer side of the ship above the water line. They proceed in this manner without

ser así, van sin menearse ni ladearse un punto; que, a ladearse, se volviera luego; y, si en el mismo *baloto* o embarcacioncilla, como sucede no pocas veces, se quieren embarcar dos españoles, se va luego a pique o se hunde; de modo que parece que el aliento y espíritu español no cabe, pues en los cuerpos no es tanta la diferencia, donde caben muchos de los indios. Y lo mismo suelo yo decir de sus casillas y habitaciones, que las veces que sucede, y no son pocas, o por caminos o por acudir lejos a sacramentarlos, estar algún rato o hacer noches en alguna de sus casas, parece estamos ahogados y con el aliento supreso, y no vemos la hora. Hélo yo experimentado hartas veces de salir a fuera y decir lo del Salmo: *Os meum aperui et attraxi spiritum*² etc. Pero volvamos a sus embarcaciones.

Del tamaño de algunos *balotos*, aunque de solo un palo (ya dijimos algo tratando de su grandeza) digamos el modo de labrarlos, y éste es: después de haber derribado el palo, que siempre disponen que caiga del lado que echan de ver será más a propósito, por la dificultad que tiene el volverlos a revolver tan grandes, los descortezan de la corteza externa, que tal vez es de más de dos dedos de grueso.

Sacada ésta – que estando verde se hace con facilidad – le echan por el medio un hilo, que ellos llaman *cutor*³ y éste es el que va por el centro del palo, sirve sólo par enderezar, si tiene alguna comba, y para medir a un lado y otro con igualdad lo que ha de quedar para bordo, y también lo que se ha de ir socavando; lo cual hecho, le quitan de la parte de arriba todo lo rollizo, o redondo, hasta que llega a lo más ancho del tronco, dejando más alta una y otra punta, que han de servir de popa – que en esto tienen sus medidas de cuanto ha de alzar más en una parte que en otra – y según las hechuras, que son varias y tienen varios nombres entre ellos, lo van disponiendo de manera que labran primero todo lo de afuera, adelgazando de popa y proa y dándole mayor o menor plan en medio según la hechura que llevan, quedando el gálibo de la embarcación, sus divisiones y forma exterior acabada antes que se toque al interior, que a fuerza de

rocking or tipping even a degree. If it should tip, the boat would turn over immediately. If two Spaniards wish to travel, in the same *balutu* or little vessel, as often happens, they soon capsize or founder, so that it seems that the Spanish mind and spirit is inadequate, because in the body there is not such a great difference, and many are the equal of the natives. I often say the same thing about their little houses and dwellings. There are times and quite frequently that either traveling, administering the sacraments to those at a distance we spend some time or pass the night in one of their houses. It seems as though we are being suffocated and the air is being cut off and we cannot wait for the new day to come. Too often I have been obliged to go outside and repeat the word of the Psalm: "*Os meum aperui et attraxi spiritum, etc.*"² But let us get back to the vessels.

We shall speak about the size of some of these *balutus*, even though they are made from a single log (we have already said something about their quality) and the method of constructing them. It is this: after felling the tree, which they always plan to have it fall on the side that they see will be most suitable, because of the difficulty they have in rolling them around, they strip off the outer bark, which perhaps is more than two fingers in thickness.

After stripping the bark, which is easily done when it is green, they put a rope through the middle which they call *kutor*.³ This is one which passes through the center of the log and serves only to hold the log straight if it tends to twist, and to measure from one side to the other equally what must be left for the side and also what must be hollowed-out. When this is completed, they take off the upper portion all the round or curved section until they come to the widest part of the trunk. They leave several points higher than the rest to serve as the stern. On this they make their calculations of how much they have to raise one part or another, according to the styles of vessels which are various and have different names among them. They proceed first by carving all the outside, making the stern and prow slender, providing for greater or less width in the middle according to the style they are producing. They give the model of the ship its outer divisions and form completely before the inside is touched. After-

brazos después, con hachas, van vaciando y dejando de tantos a tantos palmos, según es de largo y ancho, unos pedazos mucho más gruesos, que después lo quedan siempre, y ellos llaman *tamboco*⁴, y sirven para amarrar en ellos ciertos palos, que atraviesan en dichos *balotos*, cuando están acabados. De bordo a bordo, que llaman *agar*⁵, que es lo que da fortaleza no poca a dichos *balotos*, y vienen a quedar por adentro con una como escalera de popa a proa de dichos *agares*, necesarios, demás de la fortaleza, para tener donde amarrar después los dichos palos que entran en la composición de uno de estos *balotos*, y más si se les añaden otras tablas que llaman *timbao*⁶, y, a los *balotos* que las llevan añadidas *tinimbaw*, que suelen hacer algunas veces muy grandes y capaces embarcaciones para cargar mucho, como después diremos, tratando de la diferencia de embarcaciones.

Desbastado todo el palo por adentro, y dejándolo con lo grueso que es necesario, según el tamaño de los dichos *balotos* – que para no errar en ésto, que es de mucha consideración, le van barrenando con unos que llaman *locob*⁷, que es un género de barrena, no redonda como las nuestras y con la punta torcida, sino chata por el un lado y con una aberturilla como de gubia, aunque la otra es casi redonda. Son tan grandes comúnmente como el dedo menor, y también mayores, según quieren. Estas tendrán un palmo, poco más o menos, de largo las ordinarias; y su cabo, de palo duro, mayor que el que se suele poner a los escoplos. Atraviesan por dicho cabo, que está barrenado, un tarugo de palo rollizo, o cuadrado tal vez, de modo que viene a hacer cruz; y estopado sirve para ir dando vueltas a dicho *locob*, que, a fuerza de dicho mazo, que llaman *pacang*⁸ – ya dijimos como es o de alguna maceta a nuestro modo, van metiendo en el palo, y volteando, hasta que lo atraviesan, sirviendo la abertura como de gubia, aunque más pequeña – que dijimos tiene el hierro de sacar bocado y dejar agujero muy redondo bien sacado.

De estos agujeros hacen no pocos en todo el palo, que labran así en lo bajo, que es como la quilla, como en los costados; porque por ellos miden el gordor que tienen y los dan con unas azuelas, o derechas a nuestro modo, que llaman *daldag*⁹, o torcidas algo, que llaman *bintung*,¹⁰ instrumento necesario para las partes más

wards, by the strength of their arms they hollow it out with axes. They leave certain pieces of as many *palmos* as the boat is long and wide, much thicker than they will be, finally. They call them *tambuko*.⁴ They are used to fasten on certain logs which lie athwart these boats when they are finished and which they call *agar*.⁵ This gives considerable strength to these *balutu*. These are completed with a kind of stepladder from stern to prow of these *agar*. Besides strengthening, they are necessary for providing a place where they can fasten later the numerous boards which go into the make-up of these *balutu*. This is especially true if other boards are added which they call *timbaw*.⁶ The *balutu* which carry them tied on are *tinimbaw*. Sometimes, they may construct very large and spacious ships to carry large cargoes, as we shall describe afterwards when speaking about the kinds of ships.

They smooth the surface of all the wood on the inside and leave it with the thickness which is necessary, according to the size of these *balutu*. To keep from erring, in this matter of grave consideration, they proceed to make holes with an instrument they call *lukub*.⁷ It is a kind of auger, not round as ours and with the point twisted, but flat on one side and with a little opening like a gouge. The other side, however is almost round. It is as big around ordinarily as the small finger, and also larger, if they wish. They are usually a *palmo*, more or less, in length; the end is of wood of greater toughness than that which is commonly put on chisels. They put across this end, which is pierced, a round or perhaps square wooden pin so that it forms a cross. This wood serves for giving turns to this *lukub*. By the force of this mallet, which they call *pakang*⁸ (we have already said what it is), or of some kind of hammer in our fashion, they proceed to thrust the *lukub* into the wood and turn it until they pierce through, and the crevice acts as a hollow chisel, although smaller. As we have said, the iron takes out a bite and leaves a very round clean hole.

They make many of these holes all over the wood which they are fashioning, both in the bottom which is like a keel, and in the sides, because by these they determine what thickness they have. They proceed with some adzes either straight in our fashion, which they call *daldag*⁹ or twisted somewhat, which they call *bintung*.¹⁰

estrechas y combadas, limpiando y alisando, dejándolos en el grueso necesario, y de esta manera labran y perfeccionan toda una embarcación como ésta, y las mayores, aun con sola una hacha o una azuela y una barrena de las dichas. Y hay indios tan tenaces en el trabajar que uno solo suele hacer uno de estos *balotos* de cinco y seis brazas de largo – que los pequeños no es mucho – y seis y más palmos de ancho, en ocho o diez días, si trabaja bien; aunque lo más común es durarle, si es solo, muchos meses por su flema – que comúnmente es grandísima – y su espacio insufrible, aunque no en todos igualmente.

Vengamos a las embarcaciones mayores y de porte que llaman, que se labran de muchas tablas y varios tamaños. Pondremos primero el modo de labrarlas, que en todos es uno; después diremos sus tamaños, que no son pocos; y podré hablar en este particular con algunas noticias y experiencias, pues pasan de veinte las embarcaciones grandes que yo he hecho, sirviéndoles de maestro y echando los hilos; que, aunque a los principios lo aprendí yo, viéndolas hacer a los que sabían, después por falta de ellos me ha sido necesario el atender yo a dichas fábricas, no sólo a las que ellos hacen a su modo, sino a las que se hacen al nuestro, con cuenta que por acá de todo servimos los ministros evangélicos. Y es necesario, en muchas ocasiones, hacer muchos oficios por la falta que hay de quien los haga; y puedo en ésto hablar de experiencia, que, si uno de nosotros supiese todos los oficios juntos, todos los habría menester; y es casi necesario aprenderlos, porque, cuanto sabe enseñar el Padre, hallará quien lo sepa aprender y ejecutar, y tendrá el avío necesario para sus iglesias y el que nada sabe, nada tendrá.

Para hacer, pues, embarcaciones grandes y de porte que llaman, la primera diligencia es mandar cortar la quilla y las dos rodas de proa y popa, que siempre se buscan de maderas más duras, que acá llaman *tugas*, como dijimos, y luego las tablas, dándoles la medida, a los que van al monte, de las brazas que ha de tener la embarcación de largo, porque, según ellas, se derriban los

This is an important tool for the very straight and most curved smoothing and polishing and leaving them to the necessary thickness. In this manner they construct and complete the entire vessel such as this, even the largest ones, with only a hatched or an adze and an auger of the kind mentioned. There are natives who are so tenacious in their work that one alone can make one of these *balutu*, five and six *brazas* long (the small ones are not much work) and six and more *palmos* in width, in eight or ten days, if one works diligently. However, it is more usual, if one is alone, to require him several months, because of his carefreeness, which is ordinarily enormous and his slowness insufferable, not in all cases equally, however.

We come to the larger vessels, their capacity and how they are constructed out of numerous planks and of various sizes. We shall set down first the method of construction which is the same for all. Then we shall tell about their various sizes, which are many. I shall be able to speak on this point with some knowledge and experience because the number of large ships that I have built surpasses twenty. I served as first master shipbuilder and planning them. Although at first I learned by observing those who knew how; afterwards, because they were not available, it has been necessary for me to attend to these constructions, not merely the ones that they build in their own fashion, but those which are constructed in ours. Here, we ministers of the Gospel, serve in all capacities. It is necessary on many occasions to perform many tasks due to the lack of someone to do them; in this, I can speak with experience. If one of us may know any of the skills, all would have need of them. It is virtually essential to learn them because whatever the *Padre* knows how to teach, he will find someone who is capable of learning and carrying it out, and he will have the necessary preparation for building his churches; he who knows nothing, will accomplish nothing.

In order to construct, then, large ships and of the capacity signified, the first consideration is to order the keel to be cut and the two stems for the stern and prow. These are always taken from the hardest of woods. Here this is called *tugas*, as we have said. Then the boards are cut giving the size of the limbs to match the length of the ship to those going to the forests. Accordingly

palos y abren de largo a largo, sacando de cada tronco dos tablas no más, que por acá es necesario o forzoso no sacar, más lo uno porque los indios no tienen instrumentos más que las hachas dichas; lo otro porque por acá todos los árboles, chicos y grandes, cuanto mayores más, tienen el corazón o abierto y fofo o rajado; de modo que si no se saca todo el corazón, que ellos llaman *bocag*¹¹, que quiere decir “lo fofo,” no son de provecho las tablas; y así mismo la parte exterior, o superficie, de casi todos los árboles, es más blanda, más aguanosa y de menos fuerte hebra, que ellos llaman *aramai*¹², lo cual se pudre con facilidad y llena de gorgojo o carcoma, y más si no se cortan con luna, que es siempre en los menguantes, después del veintidos, que al tercer día están hechas un harnero; pero, cortándolas con luna, aunque suele en ésto, que llaman *aramay*, salpicar la carcoma, pocas veces llega a lo más duro y sólido de la tabla.

Para cortar dichas tablas es menester persona que sepa a ambas extremidades darles un género de vuelta que ellos llaman *lubag*, que quiere decir “torcer,” porque, faltándoles dicha vuelta, no abren las embarcaciones ni sacan el plan necesario; y esta vuelta ha de ser mayor en las que están cerca la quilla, que llaman *docot*¹³, a las primeras e inmediatas a ella, y a las segundas *lonor*¹⁴, que de ellas depende todo el gálibo de la embarcación, el abrir o salir angostas, con que salen de mayor sostén y carga y menos celosas, porque, siendo muy estrechas de plan, lo son tanto que casi incapaces de navegar con ellas, aunque tengan los que acá llaman *cates*, de que ya dijimos arriba, qué son y cómo se ponen y de qué sirven en las embarcaciones y su importancia por acá.

Cortados todos los troncos necesarios y hecha la tablazón de la longitud necesaria – por acá corren todas las tablas de una pieza de popa a proa en las embarcaciones que hacen los naturales, y no admiten trozos y añadiduras como las embarcaciones que se hacen al modo que en Europa –, se asienta lo primero la quilla, que comúnmente es cuadrada como *baloto* pequeño; aunque este modo de *baloto* no puede servir para embarcaciones grandes y que pasan de diez brazas de largo, si no es que sea muy grueso y muy chato; y se le encajan las dos rodas de popa y proa a la misma

they cut down the trees and split them from end to end taking from each no more than two boards. It is necessary or required here not to take more, on the one hand because the natives do not have any tools other than these hatchets, the other because all the trees both large and small, and the larger more than others, have the center either open and pitted or split. As a result, unless the very center is taken out, which they call *bukag*,¹¹ which is to say the 'pit,' the boards are of no use. Similarly, the outside part or surface of almost all the trees is softer, spongier and with weaker fibers, which they call *aramay*.¹² This portion rots easily and fills with grubs and wood worms, especially if not cut under the moon. This is always in the waning periods after the twenty-second, for in three days they become filled with worms. But by cutting them in the moonlight, even though wood worms are sprinkled all over this part they call *aramay*, they have seldom gotten into the firmer and harder portion of the wood.

In order to cut these planks, a person is required who knows how to give both ends a kind of curve, which they call *lubag*. This means to twist, because lacking this curve the ships do not widen nor follow the necessary design. This curve has to be greater in the portion near the keel. The first ones next to it they call *dukot*,¹³ the next, *lunor*.¹⁴ On these depends the whole character of the ship, whether it widens or comes out narrow and as a result they may develop greater steadiness and capacity but sail less swiftly. If they are very narrow in design they become almost incapable of being navigated even if they have what it here called *katig*. We have already mentioned above as to what they are, how they are built, for what they are used in sailing and their importance here.

Having cut the required boards and made the planking of the necessary length (all the planks extend in one piece from stern to prow in the ships which the natives build here, and they do not permit pieces and additions as in the vessels which are made in the European fashion) they lay the keel first. Ordinarily, this is square like a small *balutu*. However, this kind of *balutu* cannot be used for large vessels which exceed ten *brazas* in length for it is very thick and flat. They fasten into this keel the two stems for the stern and the prow which lengthen it at either and more than

quilla y a su nivel, prolongándola de una y otra punta más de media braza, porque de otra manera flaquea las rodas y las tablas estuvieran poco firmes, como se deja bien entender; y luego se van poniendo las tablas, labrándolas primero con la hacha y después con la azuela, y dejando en cada tabla por la parte de adentro, a cada cinco o seis palmos lo más lejos, lo que dijimos se deja en los *balotos*, que llaman *tamboco*, que ajustados del todo, tendrán de largo un palmo, de grueso tres dedos, siendo por la parte superior eso más gruesa la tabla, y por la inferior toda igual.

Estos *tambocos*, además de añadir fortaleza a las tablas, sirven de asiento para atravesar de bordo, o de tabla a tabla, unos palos rollizos, que se amarran en dichos *tambocos*; y, para este efecto, tienen cada uno de ellos dos agujeros por donde entran y salen los bejucos con que se amarran dichos palos, que se llaman como en los *balotos*, *agares*. Después diremos la necesidad o importancia de estos *agares*, que en ellos estriba toda la fortaleza de las embarcaciones de estos naturales, que, como veremos, se hacían sin algún hierro, todo con tarugos de palo y con ataduras de bejuco.

Para poner las tablas arrimadas a la quilla, y después unas a otras, y que queden fijas y unidas, no teniendo ligazones estas embarcaciones, como no las tienen, usan de una traza particular e ingeniosa y que por Europa no se sabe; y cierto que buena y necesaria para fabricar al modo que por acá. Esta es: que con los *locob*, que decíamos, o barrenas suyas, van haciendo primero al un lado y otro de la quilla, y después en medio del canto o grueso de cada tabla, muchos agujeros o barrenos redondos, distantes uno de otro poco más de un palmo.

A todos estos agujeros, que corren de popa a proa, los van encajando un tarugo del tamaño de un dedo de *bahe* – ya dijimos que es género de palma, cuya madera es correosa, dura e incorruptible, o, donde no hay de otra madera dura y que equivalga de *mangle*¹⁵, o de palo del Brasil, se hacen en algunas partes.

Estos tarugos los encajan muy apretadamente y clavan en los barrenos que decíamos, de modo que queda todo el costado o bordo como un peine después, o una sierra de dientes como

half a *braza*. Otherwise the stems would be weakened and the planks might be too unstable, as can be well understood. Next, they proceed to put on the planks shaping them first with the ax and afterwards with the adze. They leave on the inside of each plank, every five or six *palmas* at the most, what we said is left in the case of the *balutu*, which they call *tambuku*. Measured over all they will be a *palmo* long and three fingers thicker at the top, but flush with the rest at the bottom.

These *tambuku*, besides giving added strength to the planks, serve as a seating for crossing from the side or from plank to plank some rounded pieces which are tied to these *tambuku*. For this purpose each one of these [*tambukos*] has two holes where the rattan goes in and out by which these pieces are tied. These, as in the *balutu*, are called *agar*. Afterwards we shall tell of the necessity and importance of these *agar*. On them is supported the whole strength of the vessels of these natives which as we shall see, they made without any iron whatever with wooden plugs and windings of rattan.

In order to bind the planks to the keel and afterwards to one another, so that these ships might remain firm and joined since they do not have futtocks, they use a special ingenious device. It is unknown in Europe and certainly good and necessary to build ships as is done here. It is this: with the *lukub*, as we said, or augers, they make first on one side of the keel, then on the other, and afterwards in the middle of the edge or thickness of each board, many round auger holes about one *palmo* apart.

In all these holes, which run from the stern to the prow, they proceed to insert a plug of *bahi* of the size of a finger. We have already stated that this is a kind of a palm whose wood is hard, strong and resists rot. In some places where there is no other hard wood which equals *mangli*¹⁵ they make them out of Brazil wood as is done in other places.

They imbed these plugs very tightly and they place auger holes, as we have said, in such fashion that the whole side or board becomes afterward like a comb, or a ridge of teeth like long

colmillos, largos de lo alto de la mano o poco menos, que esta es su medida ordinaria.

En la tabla que se ha de encajar allí hacen los mismos agujeros con toda correspondencia, y, en estando hechos, la van encajando poco a poco hasta que entran todos los tarugos y se juntan las tablas o bordos, con lo cual quedan como cosidos y unidos fuertemente. Después diremos cómo hacen para que estos tarugos no se meneen ni las tablas se aparten, aun con muchos golpes de mar, etc., que tiene su ingenio también.

Al modo dicho ponen, por una banda y otra, las tablas todas que quieren, según hacen de alta o baja la embarcación; porque, como veremos, tienen dos modos de remos según son de altas o bajas; y, armada toda con cinco, seis o más tablas por banda, la dejan en blanco estar uno o dos meses para que se enjuguen las tablas y se sequen; porque, si acaban con la obra, estando aún verdes, se desencajan después y desmienten, y es trabajo en vano.

En estando suficientemente secas, que ya no se pueden encoger, deshacen todo lo armado, sacándolo tabla por tabla, comenzando de las últimas, y, llegando a la quilla, renuevan los tarugos que se quebraron – que no son pocos – y añaden los que faltaban, y, encajando la primera tabla sin apretarla mucho, la hacen *sugi*¹⁶, que llaman ellos, y quiere decir igualar de modo que ajuste.

El modo de hacer *sugi*, que es particular, es como se sigue: tienen una astilla o palillo cuadrado un poco más largo que la palma de la mano, el un lado cortado a cercén, que es el inferior; al superior dejan uno como labio pequeño que encaja entre las dos tablas, asentándole en la inferior en correspondencia de dicho labio. En un lado le ponen una puntilla de hierro pequeña. Aunque fuertemente atada, porque no se menee, y dicha puntilla sale del palillo dicho poco más de un canto de real.

Uno, pues, de los oficiales, de buen puño, encaja dentro de la mano, fuertemente, la dicha astilla cuadrada, arrimando al bordo inferior la lengüecilla, o labio que sobresale del palo, y

tusks as high as a hand or slightly less. This is their ordinary size.

In the board which is to be fitted there, they bore the same holes making them correspond accurately. When this is done they proceed to fit them together little by little until all the plugs have been inserted and all the planks or sides are joined. Later we shall say what they do so that these plugs do not wiggle about or the planks come apart despite many blows of the sea, etc. This requires a special talent.

In the manner mentioned they place on one side and then the other all the planks they wish, according to whether they are making the vessel high or low. This is because, as we shall see, they have two kinds of oars, according to whether the ships are high or low. Having fitted the whole ship with five, six or more, planks on each side, they leave it for a period of one or two months so that the planks will dry, because if they finish the work while the planks are still green, these will warp and become unfastened later and the work is useless.

When sufficiently dry and the boards cannot shrink, they take apart the whole assembly, pulling it apart board by board commencing with the last and ending with the keel. Then they renew the plugs which were broken (of which there were many) and supply those which were lacking. They fit on the first plank without pressing hard, and they make *sugi*,¹⁶ as they call it and which means "to adjust the way in which they were fitted together".

The manner of making *sugi* is peculiar and is as follows. They have a splinter or a little square stick a bit longer than the palm of the hand. One end is cut thinly and is the lower part; on top they leave a kind of small lip which is inserted between the two boards, resting it against the lower one. Corresponding to this lip on the same side they put a very small iron point, but very firmly attached so that it will not move. This little point protrudes from the little stick a bit more than the thickness of a *real*.

The one of the best workers grasps the little square stick tightly within his hand holding the little tongue or lip against the lower edge and extends over the board. At the upper part is the

a la superior la punta de hierro; y, corriendo con fuerza de popa a proa por adentro y por afuera, deja en la parte superior. O tabla que se encaja, una raya o señal, la cual van con un escoplo siguiendo y quitando lo que queda debajo de dicha raya por el un lado y otro de la tabla dejándole algo acanalado el bordo; porque en aquella canal, o vacío, encajan el *baroc*, que ya dijimos es un género como de borra, muy blando, que se saca de ciertas palmas, llenando todo el bordo y el encaje y lengua de las tablas. Que encajan en las rodas de dicho *baroc* que sino como de estopa y que, empañándose en el agua, impide el que se remuevan dichas costuras de las tablas, que van volviendo a poner de una en una con la misma diligencia de hacer *sugi*, que hemos dicho, y poner el *baroc*, hasta que queda armada segunda vez la embarcación y hecho el casco de ella.

El cual acabado, si no es muy grande, y, si lo es, lo hace en dos veces; para que ajusten más bien todas las tablas le hacen osos, que quieren decir “apretar” o “ajustar” más, atravesando toda la embarcación de bordo y sacando en ambos bordos, más de un palmo más afuera, de unos trozos o troncos de palos rollizos como se cogen del monte, que amarran con bejucos, o enteros o partidos, por debajo la quilla, dándole vueltas muy fuertes por las puntas de dichos palos que atraviesan, en cuya extremidad de un lado y otro ponen su cuña, una o dos, que van con muy buenos mazos apretando y encajando a la par en dichos palos rollizos, que se van juntamente abriendo con las cuñas: y con esto cediendo las tablas hacia dentro tanto que ni el canto de la una puede meterse entre tabla y tabla, quedando toda la embarcación, porque de popa a proa se aprieta de dicha manera, con esta diligencia muy ajustadas y las costuras todas de entre tabla y tabla tan juntas que parecen de una pieza, y no los falta traza para que, quitando los trozos y bejucos con que las apretaron, no se vuelvan a abrir, porque, antes de quitarlos, como caen por afuera y encima, le clavetean por la parte de adentro todos los tarugos arriba y abajo, diligencia con que aseguran mucho el casco, fortalecen los bordos y detienen como cosidas unas tablas con otras.

iron point. He forcibly draws a line or mark from stern to prow, both inside and out, along the upper board which is being fitted. They follow this with an adze taking off what remains below this line on both sides of the board leaving the side with a long chink. It is this chink or channel that they stuff with *baruk*. As we have already said, this is a kind of material resembling soft goat's hair which they take from certain palms. With this *baruk* they fill the whole side, the grooves and the tongue of the boards which are fastened into the stems. This serves as a form of oakum, and on being soaked in water keeps these board ribs from coming one against the other, so they proceed putting one over the other while at the same time carefully making *sugi* and putting in the *baruk* as we have said. For the second time the vessel is finally assembled and the hull is completed.

The hull is complete if it is not very large. If it is so, it is finished in two steps. So that all the planks may fit well, they perform *usus*. This means to tighten or adjust them further by placing across the whole vessel from side to side some limbs or trunks of rounded logs as taken from the forest. These extend more than a *palmo* beyond either side and are tied with rattan, either whole or split, passed underneath the keel which are bound very securely around the ends of the logs that are across the ship. At the ends on either side they insert one or two of their wedges which, by strong blows of a mallet, both tighten and thrust themselves between these round logs which, at the same time, are split by the wedges. As a result they leave the boards pressed together so hard that not even the edge of a wedge can be inserted between one board and another. This leaves the whole vessel (because it is forced together in this manner from stem to stern), as a result of this effort, very tight, and the seams between one board and the next so joined that they seem to be of a single piece. Nor do they lack a scheme for taking off the logs and the rattan with which they are tied together so that they do not open up again. Before taking them off, as they separate outside and above, they nail through the inside all the plugs, above and below. By this means they greatly re-enforce the hull, strengthen the sides and fasten, as if they were sewn, one plank with the others.

A esto llaman *pamuta*¹⁷, que quiere decir “cegar las juntas”; y, como al labrarlas y juntarlas, cuando lo están mucho, dicen *mapirang-na* que es palabra entre ellos que quiere decir “cerrar los ojos,” y metafóricamente en esta ocasión significa que “está junta tabla con otra como los párpados cerrados”; así el *pamuta* quiere decir que con aquella diligencia quedan ciegas las juntas como lo están los ojos de un ciego.

Para hacer el dicho *pamuta* tienen unas puntas de hierro como de clavos, cuadradas y fuertes, con sus encajes o cabezas de palo, como decíamos de los *locob*, para darles vuelta fácilmente como a nuestras barrenas. Con aquellas puntas ven que están señalados por la parte de dentro, que al ponerlos les hacen sus rayas con un escoplo o cuchillo – su agujero, y en él meten puntas como clavos de cierta madera fuerte, y haciendo en cada tarugo – que en el agua cría un genero de resina, que parece está siempre verde y pegajosa, llamado *ipil*, – ya dijimos qué palo es, y las suelen hacer de dos dedos de largo, que es bastante para llegar a clavarse en medio del tarugo, con que queda preso arriba y abajo sin que pueda menearse; y de esta manera clavetean todas las costuras y los tarugos de ellas: y, como la dicha punta, además de lo pegajoso, es cuadrada, se encaja tan fuertemente en las tablas y en los tarugos que jamás se ha visto fallar ni salirse ninguna de dichas puntas del *pamuta*, que primero suelen quebrarse los tarugos que salirse ellas.

Con esta diligencia queda el buque, o casco, acabado de labrar, sin clavo chico ni grande de hierro. Lo demás dirá el capítulo siguiente, que no es poco aún.

They call this *pamuta*,¹⁷ this is to say "to stop up the joints". As to fashioning them and joining them, when it is a large task, they say *mapirang-na*. This is a word used among them which means "to close the eyes", and figuratively in this instance signifies that one board is joined with another like closed eyelids. Thus, the word *pamuta* means that through that effort the joints are closed like the eyes of a blind person.

In order to do this *pamuta*, they have some iron points, like the square strong nails, with their tops or heads of wood, as we said concerning the *lukub*, in order to turn them in easily like our augers. With these points they proceed to make in each plug, which is indicated on the inside, (for in fitting the plugs into their holes they make their outlines with a chisel or a knife). Into this they insert some nail-like points of a kind of strong wood. In water this generates a kind of resin, which it seems remains always fresh and sticky, called *ipil*. We have already said what kind of wood it is. They customarily make the points two fingers long which is sufficient to nail them into the middle of the plug so that it remains tight above and below and cannot be loosened. Since the point, aside from being sticky, is square, it fastens itself so strongly in the boards and in the plugs that never have any of these points of *pamuta* been seen to fail or to fall out. Rather, the plugs are accustomed to break first before the points come out.

And so, with all this undertaking the boat or hull is finished without a nail, large or small. The rest will be discussed in the next chapter, and there is till much. □

Chapter 8

ANNOTATIONS

[1] *Mangayao. Mangiyaw.* This term *mangiyaw* is described thus: To plunder, to assault, to attack; it is a matter of piracy. Alcina has much to say and discuss about this type of warfare among the Bisayans and their enemies in *Book 4*, Chapters 10 and 11.

[2] *Os meum aperui et attraxi spiritu.* A Latin scripture passage from the Psalms: “*I have opened my lips and called upon the Spirit... etc.*”

[3] *Cutor. Kutor.* Perhaps, the word should read “*kutud*: a string with which the carpenters show where the cutting must be done.” Sánchez, 1711, *op. cit.*

[4] *Tamboco. Tambuko.* A piece of wood that comes out at one and the other end in the interior of small boats made of one piece. In both pieces they bore a whole to support the poles across beams that reinforce the said lipats and also to support in them what pertains to the *batangas*, or to place on the said parts the behibes, for the oarsmen. De la Rosa-Alcázar, 1914, *op. cit.*, p. 339.

Sánchez offers us this entry for *tambuko*: The work of the wood, or of the *balutu*. 1711, *op. cit.*

[5] *Agar.* These are elements which join and secure the sea-vessels.” *Ibid.*

[6] *Timbaw.* Wooden waistboard placed in the ship. *Tinimbaw*: a kind of *balutu*, to which a wooden board is added. *Ibid.*

“*Timbaw*: to make or to fabricate ‘boards’ for marine craft. s. Wooden boards used in the building of one piece boats, to make them higher and stronger. v. To add or place the said boards. De la Rosa-Alcázar [1914], *op. cit.*, p. 355.

[7] *Locob. Lukob.* The meaning of the word *lukob*: a concave, downward curve, when the accent falls on the first syllable. When the accent falls on the second syllable – *lukúb*: a convex, upward curve; to close, to cover. Also, a manner of fishing in the sea with a ring net. Tramp, 1995, *op. cit.*, p. 236.

“*Lukub*: boring bit. The native one, similar to a small curved chisel. Sánchez, 1711, *op. cit.*

“*Lukub*: to cover, something to contain. To close door, window, etc. s. a shellfish so-called; also as *lukublukub*, a shellfish. De la Rosa-Alcázar, 1914, *op. cit.*, p. 190.

[8] *Pacang. Pakang.* Or *pakangun, pakngun*: A mace or a mallet, depending upon the debate one hears from the so-called master or official; here among the

Bisayans it is what is used for the *mantas* which were soaked in lime and called, *pagabu*. To pound or beat like the paper or the lanote blanket. *Pakangpakang*: A mallet of the carpenter or shoemaker, etc. Sánchez [1711], *op. cit.*

[9] *Daldag*. An adze also called *bingkung*. *Magdalag ka sinin tapi; daldagan mu daw inin tapi*. *Ibid.* De la Rosa-Alcázar offer this entry under "*bingkung*; something concave or convex. Concave adze v. To work with it. 1914, *op. cit.*, p. 47.

[10] *Bintung*. Better *bingkung*: an adze; also called *daldag*. *Ibid.*

[11] *Bukag*. The heart of the *anáhaw*, coconut, squash or similar things. De la Rosa-Alcázar [1914], *op. cit.*, p. 58. – "*Bukag*: The heart, the pit of a tree, rattan, *bahi*, palm, etc." Sánchez, 1711, *op. cit.*

[12] *Aramay*. "The first layer beneath the bark of a tree which very quickly rots and disintegrates easily; layer of soil, that is the upper soil. An *aramay sa tuna*. The first layer of the earth. *Ibid.*

[13] *Dukot*. Or *dukuton*, *dukton*: to stick to one another; to attach. Sánchez [1711], *op. cit.*

"*Dukot*: to ignite; to light; to burn; to light one thing with another; to adhere as paste; to attach; to stick." Tramp, 1995, *op. cit.*, p. 140.

"*Dukot*: to ignite, to set on fire. – To paste one thing with another stucked united; glued. De la Rosa-Alcázar, 1914, *op. cit.*, p. 118.

[14] *Lunod* or *Lunor*. To sink; to put underwater. – To submerge. To sink. Setting of sun or moon. – To place in the pot what is to be cooked/boiled. De la Rosa-Alcázar, 1914, *op. cit.*, p. 191.

Also, as *Lulunuron* or *lulundon*. To go underwater, to sink. Also what they place with the dead in their burial, like *unung*. – Also *nalunud*, to get small-pox or contract/enter the body any other sickness, etc. Sánchez, 1711, *op. cit.*

[15] *Mangle*. *Mangli*. Unable to locate this word *mangli*. Either a type of timber which was never taken note of or just a misspelling.

[16] *Sugi*. Tramp describes "*Sugi*: longfinned garfish or *Euleptorhamphus viridis* (van H). Tramp, 1995, *op. cit.*

"*Sugi*: skillful; capable; well-suited. Sánchez, 1711, *op. cit.*

[17] *Pamuta*. Although we are unable to find this word in its given spelling, there is, however, the following entry: "*Pamuthanan*: A break placed to the *harigue*, on which the *sapayan* rests. De la Rosa-Alcázar, 1914, *op. cit.*, p. 235.