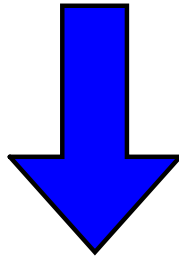


Hydrodynamics Of Flat Water Kayiak and Canoe Racing Boats by Chris Dagiou

CHAPTER 1



Historical development
of the boat

1.1 INTRODUCTION

Such as every sport, and the sport of canoeing has its own history origin. The knowledge of the origin of this sport is a very important tool for the education of the athletes and for further progress and the contribution of the coach in the development of the sport. As it is known without the past there is no present and future. So, the man who wants to be called knowledgeable of the sport of canoeing, must know the roots of this sport, the basic steps of its development in time and the facts which were major stages at its historical path. Also, the knowledge of the past will help us in understanding the growth rate of this sport in regard with the other sports and also, in collection important knowledge, which will help us to avoid mistakes of the past and to achieve a faster development at the present. The Knowledge we have already is a very important advance for the progress of the sport and its equipment. Also, only with the knowledge of the past there can be innovations and evolutionary ideas for the development of the boats and the paddles. Finally, we can say that if someone wants to contribute in the progress of the sport of canoeing and its history, he must understand first the whole history of the sport until then. Only like this can become PROGRESS.

The historical development of the boats can be separated in three stages considering the *purpose* and the *reason* of their use. So, in consideration with the use of canoe from the past until nowadays we have the following periods:

1. The use of canoe for living reasons (6000b.c. – 18th century).
2. The use of canoe for transporting and recreational reasons (18th – 19th century)
3. The use of canoe for sport performances (19th century – Today)

These three periods are not separated between each other, but each one has some element from the other. So, at the first period of time there are elements of transporting and recreation with the boats of canoeing, especially

at the end of the first period. At the second period of time there are events of competition and sport events mainly at the end of this period and the use for living reasons at the beginning of this period. Finally, at the third period of time which continues until nowadays, we meet the boat of canoeing mostly at its competition form, without missing the recreational and the transporting character.

Each period of time of its development of canoe and its equipment has elements and from the other three periods. In all these periods there are together all the uses of canoe. But each one is different from the other, because the one use of canoe leads instead of the other two uses. So, since 6000 b.c., in which there are proofs of its existence, until 17th century, the canoe kayak was uses basically for living reasons. Since 17th century until the end of 18th century was uses basically for transporting and recreational reasons. Since the end of 18th century until nowadays has its competition form that we know today.

THE HYDRODYNAMIC DEVELOPMENT OF THE HULL OF CANOEING BOATS BY CHRISTOS DAGIOS

1.2 KAYAK BOATS FOR SURVIVAL (6000B.C – 18TH CENTURY)

The discovery and development of boats, particularly small ones, have their roots in the struggle between man and his environment from ancient societies. The canoeing boat was mostly used as a tool to meet his primary needs (food, clothing, etc.), specifically for hunting and for war campaigns. In territories where it was difficult to walk because they have a lot of water, like lakes or rivers, the canoeing boat was a relatively fast way of transportation and of gathering information about the territory. (Picture 1.1).

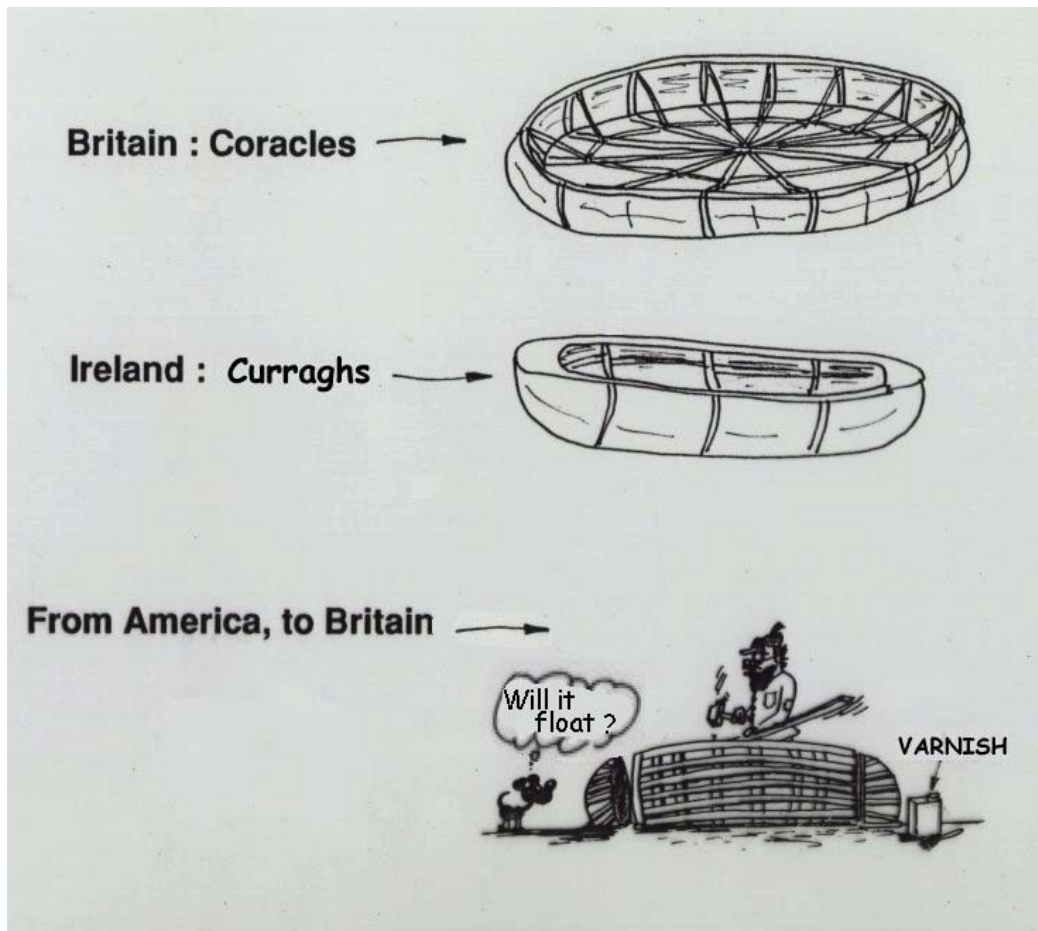


Canoes and kayaks are not boats from modern times.

Picture 1.1: Canoe – Kayak, a sport with a great history.

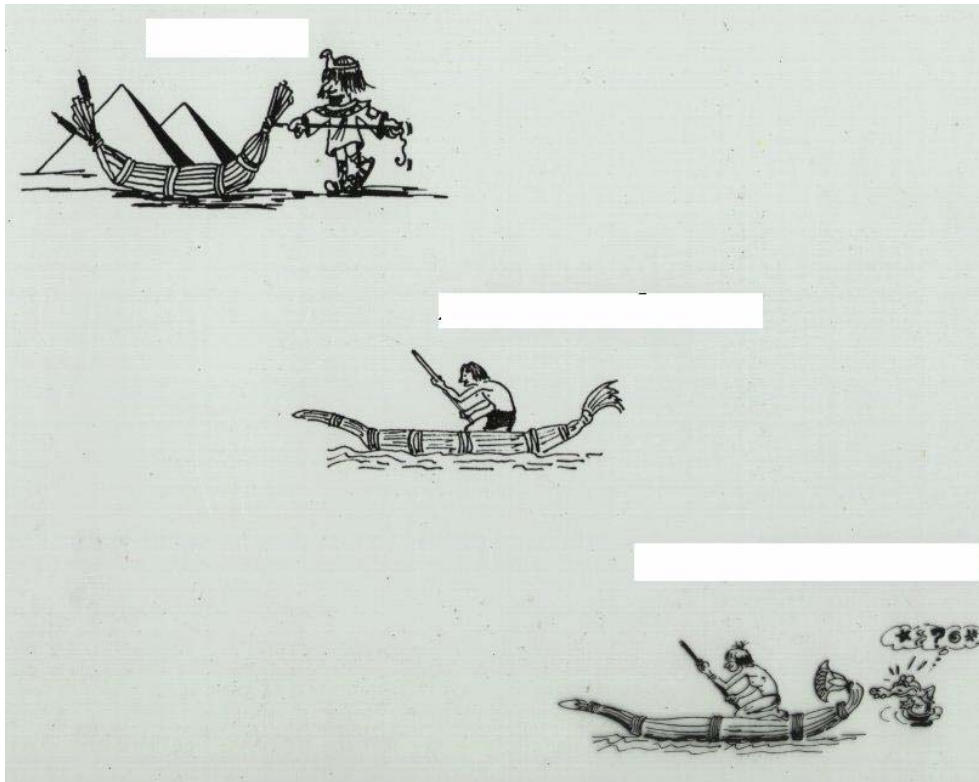
Throughout the history of mankind there have been many types of boat. Man was using and is still using pirogues and floats (from wood, cane or wooden rind), basket boats and round boats (picture 1.2) All these types of

boat exist in separate categories, but in each category there are many smaller categories with different variations of boat. Some of these types have many common characteristics with modern canoes and racing boats, but they aren't the only antecedents of our canoes. The great similarity with modern racing boats can be seen in the shapes of the boats from bole trees, like those of the Inuit and of Indian people.



Picture 1.2: Different types of boat.

These sea boats were used for fishing, hunting, traveling and transportation. The canoes, which are also known as open boats, can move through water with a paddle that has only one blade, they appeared in ancient Egyptian pictures in conjunction with rowing boats. The most recent archaeological proof is in the temple of the Sumerian king of Ur, in Asia, at the edge of the Efratis River. At this site a silver canoeing boat and a silver paddle were found which date back 6000 years. This equipment was given to the king for his journey to the land of the dead.



Εικόνα 1.3: Boats in Egypt, in Caribbean and in the lake of Titicaca

Also, in the drawings of the Ancient Egyptians, there are boats, which are moved by paddlers. The Egyptians, at the age of the pyramids, were traveling in the waters of the Nile River by narrow boats, which were made by bunches, that were tied together with ropes and leather strips. (Picture 1.3).

In the peninsula of Yucatan (Central America), in Chichen Itza, there is further proof of the existence of the canoe boat in 1150b.c., on a wall drawing in the ruins of Tikal, in the centre of Guatemala. Furthermore, there are petrifications from 700b.c., which represent canoes.

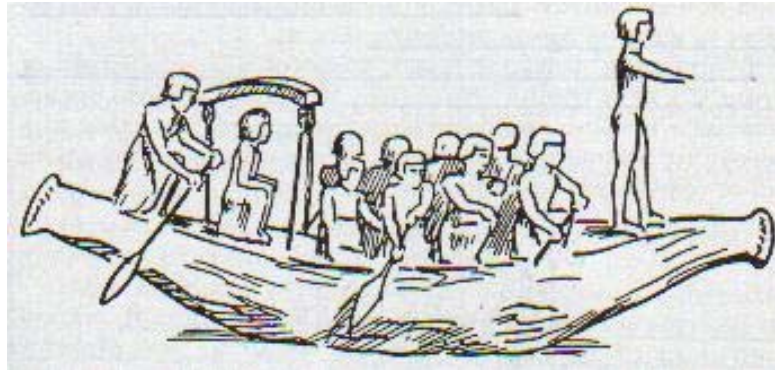
So, the first boats, which are considered as the antecedents of canoes, were boats, which had an open deck and were navigated with paddles that had one blade or with paddles that had two blades. Also, the position of the paddlers was the same as the position kayakers have. Their hulls varied depending on their materials, which was used for their construction. Most of these boats had very good stability and their hull was much wider than our racing boats of canoes. Also, these boats were heavier and shorter than today's racing boats because they wanted their boats to be as mobile as they possibly could be. All the aforementioned characteristics were necessary for the purpose they had been made for. That purpose was hunting, trips, transportation, fishing or war

purposes. Stability and mobility were the two main characteristics that were necessary for people to cover the needs of their lives.

1.2.1 The bole tree boat

From the first three basic types of canoes, the bole tree boat was the most famous. It is generally accepted that the bole tree boat existed before the boats from the skin of trees and the leather boats. Traditions show us that the bole tree boats existed around 6000B.c.

Apart from the tomb of the Sumerian King, the front parts of some tombs in Egypt also offer great interest. These front parts of the tombs are shown in the Archaeological Museum of Berlin. There we can see in a small picture the representation of the "Canadian boat for ten", with eight paddlers, one steersman and the master of the tomb, under his canopy (Picture 1.4).



Εικόνα 1.4: «Rowing boat» (Egypt) from the grave of an Egyptian priest , who lived around 200 B.C. (Middle Empire) – National museum, Berlin.

The bole tree boat isn't the direct antecedent of contemporary racing boats. Kayak boats, the Canadians and the assembled boats have their roots in the leather boats of the Eskimos and the boats from the skin of the tree, which the Indians of North America had.

The bole tree boat is the first basic shape of boats, generally. The bole tree boat was, and still is being made today, rarely all around the world, where there are large trees. The larger and richer the forest land, the better and easier the conditions are for the production of many and big bole tree boats.

1.2.2 The use of the bole tree boat.

The use of the bole tree boat is as big as its reputation. At the shores it was used for communication between the islands which were near each other and for fishing close to the shores. The bole tree boat was also used in the center of the land, in the rivers, where it was used for the hunting of wild hippopotamus.

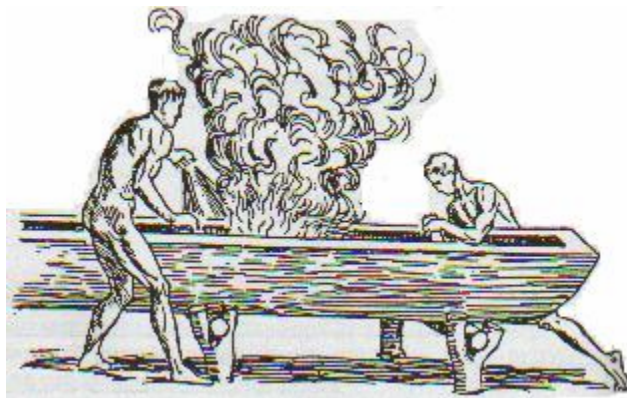
Suder (1930) claims there were Indians, who were living inside bole tree boat during the periods of inundations. Also, on the shores of the Caribbean, when Christopher Columbus arrived in the American continent, the Indians approached his three ships with boats, which were made by one piece of wood, in other words with bole tree boats. They were huge shafts (the main part of the tree), which had big holes in the middle of them from the one side of them and their edges were sharp for smoother and faster travel across the water.

The bole tree boats were used also by many people as ships for transportation (ferries), and as ships of the government to carry their leaders. In rivers with powerful streams the bole tree boat was being used as a ferry – boat.

[1.2.3 Construction, methods of construction and movement of the bole tree boats.](#)

The bole tree boat – as we can understand from its name – is a boat, which is made from one piece of tree, from the bole of the tree. Its general dimensions are dependent on the variety of the forests and the size of the trees. So, in the big virgin forest we can easily find bigger bole tree boats. There we can find boats, which can take up to 60 people.

The boats, which were named war canoes were very popular for the aborigines. They made so many war canoes that it was difficult to work them out properly. When it was possible, the trees which were used for the construction of the canoes, were cut near the shores of the river to avoid long distance transfer along the roads. (Picture 1.5).



Eικόνα 1.5: With fire or hot stones the bole tree boats were burned, were worked out inside and later, after the invasion of the foreign conquistadors were being cut of by axes.

They dug the bole of the tree until it took the shape of the letter “U” with the help of poles. So the boats they made didn’t have a deck and their hull had a “U” shape. These boats had a “U” shape because they were made mainly for transportation, fishing, hunting etc. The aborigines wanted boats, which would

be stable and balanced. So, they gave more attention to the stability of the boat without neglecting the smooth movement of the boat in the water. In this way, and with the "U" shape, boats were made that had the requirements to cover their needs as with other boats which were fast and well-shaped.

Suder reports that Arabs used a special type of wood named as "Tik", which was imported from India and they found out that: "The bole tree boat is appropriate for deep and obstacle-free waters. In contrast, boats from the skin of the tree are more appropriate for flat and shallow waters".

With the bole tree boats they also sailed. Mainly the Polynesians had a good ability in that skill. They put one sail/vane and a keel to avoid the upset of the boat. When they wanted to go in the opposite direction they didn't have to turn their boat, they just turned their sail/vane.