CMH NEWSLETTER

THE OFFICIAL PUBLICATION OF THE COLORADO MILITARY HISTORIANS

VOLUME 2, NUMBER 4 FEBRUARY 1968

ROMAN TRIREME
INVASION OF ENGLAND 43 A.D.

HISTORIAN'S SCUTTLEBUTT

Although we are a nonpartisan organization, the staff would like to congratulate Austin moore on his decision to run for the State House of Representatives. Hats off to you, Austin, and best of luck!!!

So many times, those of us who take part in the war games neglect to thank our wonderful hostess adequately. Were it not for that charmin' colleen, Moya moore, combatants would be without supplies of any sort. "An army travels on its stomach," they say. Besides which, as any soldier knows, a lovely lady is a marvelous morale factor. And so, Moya, a belated albeit heartfelt thanks for so graciously opening your house to us so often.

As many of you probably know, Ray Freelove had a display at the Denver Art Museum on April 21. The display consisted of 54mm and 30 mm figures.

Ever hear of Cleveland airplane kits? They were around mostly in the 40's and 50's. Dan Jones has a small stock of them for sale or trade. For more info call him at 429-7942.

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CMH Newsletter
A (hopefully) monthly publication
Advertising rates $10 per annum half page
$15 per annum full page
Editor: Dan Jones
Asst, Editor and Typist: Faye Jones
Mailing address: 204 Leona Drive Denver, Colorado, 80221

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DO-IT-YOURSELF ART

THE DEVELOPMENT OF THE WAR GALLEY

by

JOHN CARTER

The development of the war galley took more time than any other warship ever built. Since it had such a great influence on history, we should, then, give some attention to it.

The first ships or, rather, overwater conveyances, were whatever was conveniently at hand. Tree trunks were most likely the very first. Then some bright individual invented the dugout and it is in this that we see the origins of the first warships.

The Minoans probably had the first real seapower. Their ancestors had built their dugouts from cypress trees and then, when they wanted bigger vessels, had heightened the sides with planks. This development progressed until around 1300 B.C. when we see a ship built entirely of planks with ribs for strength and a long one-piece keel for longitudinal strenght. This keel was a direct descendant of the old dugout. In this keel and rib construction we see the beginnings of the form of hull support that has lasted until today. These ships were propelled by oars but also carried a single square sail on a mast for times when the winds were right.

Using these ships as Britain was to do several thousand years later, the Minoans established by war, trade, and diplomacy, a huge sea empire that lasted for nearly a thousand years and earned them the title of the Sea Kings.

However, around 1300 B.C. a huge group of people called the Acheans who had been migrating slowly westward from Asia began to turn south into Greece and the Fertile Crescent. In Southern Greece they came upon the Minoan colonies. Here they quickly learned how to build the Minoan ships and make the bronze weapons that were so superior to their stone and bone weapons. Then, eager to try out their new toys, they raided Crete until by 1200 B.C. its civilizations was no more than a group of legends.

Now they turned their attentions to Egypt and the Hittites of Asia Minor and operating as the Vikings did, occasionally as traders but more often as raiders, they began to hit both of these countries. They even incited the desert Bedouins to raid Egypt. For the most part, the Acheans operated in small groups but to destroy Crete they had formed a loose alliance. Now it was reformed and turned on Egypt.

Egypt's warships had followed a different line of development from the Minoan ship. Since the Egyptians had no great supply of wood, they built their first water craft out of long bundles of papyrus. The ends of these craft were held up by ropes that were tied from the tip to a point in that end of the ship. By 2700 B.C. the ships were wider and included some decking. The support rope now stretched the full length of the ship. For lateral support there were larger ropes that went around the outside of the ship at the bow and the stern. Although I have not been able to ascertain what the hull material was at this time, it was weak enough that a biped mast had to be used for the sail in order to distribute the weight so that the mast would not go through the hull. This mast could be lowered to rest on a cradle-like support in the stern when the sail was not in use. These vessels also had a platform on the stern from which as many as three steersmen on a side with large paddles controlled the course of the ship. This rather large number of oars may have been necessitated by the lack of a keel. There were also eight to ten oars on each side to provide forward power when there was no wind for the sail. By 1500 B.C. this model had not changed much except that they were using short pieces of wood which were available in that land. The steering oars had been reduced to one to a side

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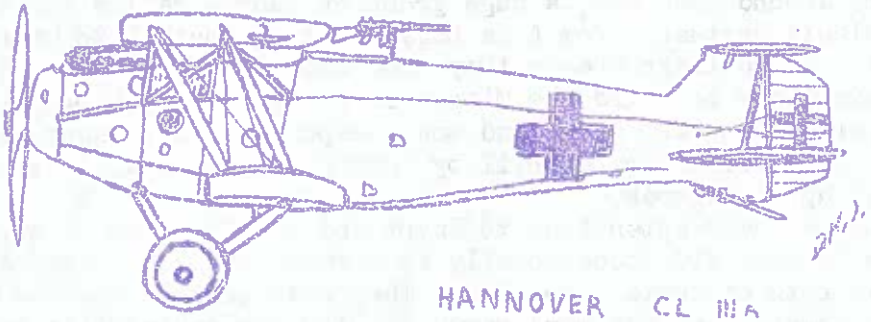

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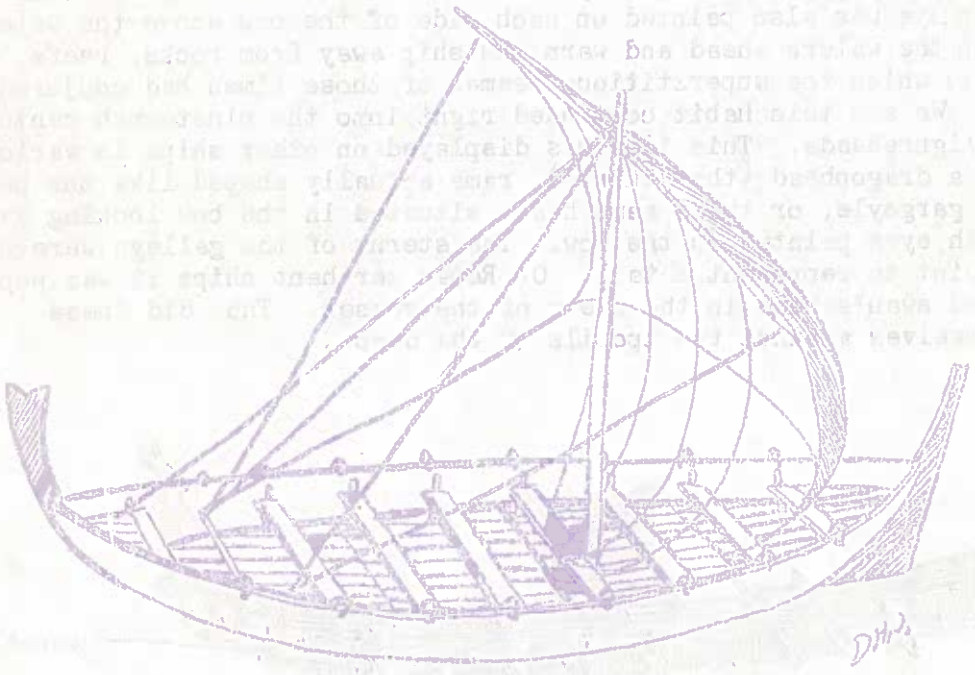
and the power oars had been increased to about a dozen on each side. The mast was also a single piece now. By 1200 B.C. the only other real difference was the removal of the ropes[3]. Bjorn Landstrom, in his book, The Ship, states that as late as 400 B.C., Herodotus wrote that their craft "were built of blocks of acacia as one builds a wall, caulked with papyrus, pinned together with wooden pegs and lacked ribs."[4]

It was in 1195 B.C. that Ramses III embarked in one hundred of these ships with a regiment of troops to destroy the Achean fleet before it could reach Egypt. Due to the surprise of the attack and the after-effects of a night of debauchery by the enemy, the Egyptians won a decisive and smashing victory in which there were only about one hundred Achean survivors.

From this point, Egypt's story is one of decline, decadence and corruption. Since their galleys were basically on the contemporary Roman lines we need not give the Egyptians further consideration.

Unfortunately for us, the Phoenicans, while being excellent ship constructors, traders, and navigators, were not very good artists and most of the pictures we have of their ships were drawn by Assyrians and Egyptians, many of them after the



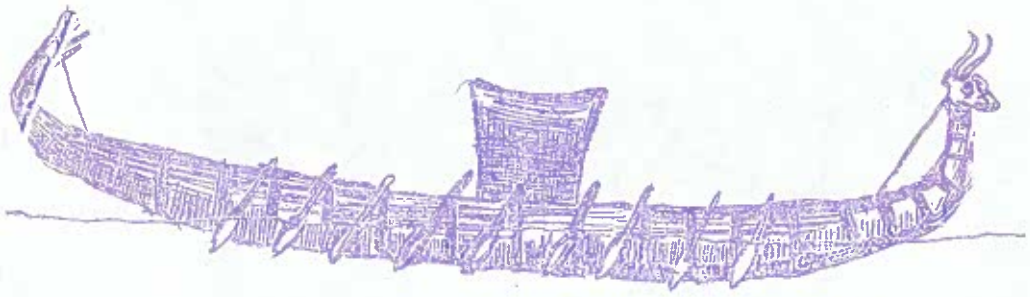
MINOAN SHIP

Phoenicians were gone. From these pictures we find that the ships drawn by the Assyrians look rather Assyrian in design, and those done by Egyptians look rather Egyptian in design. I have also found that for every author who has written on this topic there is a different version of what the Phoenican ships looked like. The only positive information I can give is that iron beaks of rams appeared on their warships around 500B.C., that their rowers sat exposed to the inclemencies of the weather, that their ships carried a square, single sail, that they painted eyes in the bows of their ships, and that they used carved horseheads for the figureheads of their heavy merchantmen.

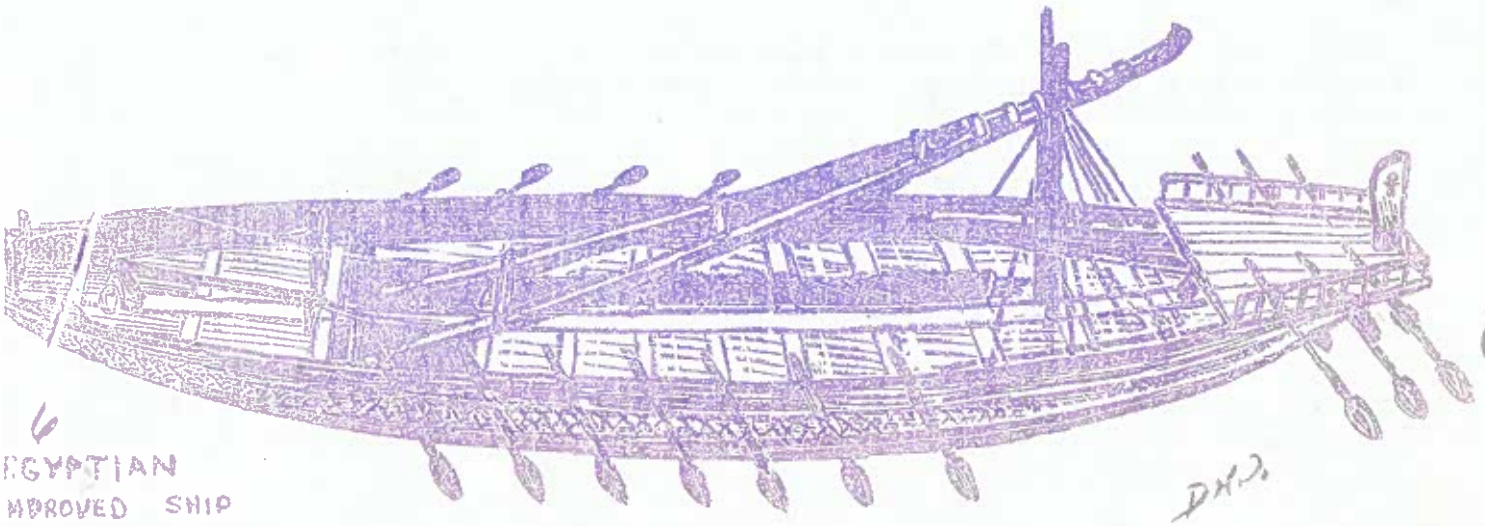
Now as we turn our attention to the vessel that controlled the Mediterranean Sea from around 800 B.C. to 1571A.D., the galley. Up to 800B.C. the only real distinction between a merchant ship and a warship lay in the intentions of her crew. With the galley and her ram, there was now a very great distination. Let us trace the galley from her beginnings.

The Dorians gave us our first galleys around 3300 B.C. The first galleys were essentially "souped-up" dugout canoes. The prow instead of being rounded out was brought to a sharp underwater point--the ram. Just behind and above the ram was a small fighting platform for one or two men. A wooden shield was situated in front of this platform to protect the soldiers. Most of the rest of the hull was devoted to the oarsmen of which there were about twelve to a side. The hull was only about four feet wide and as a result the oarsmen could get no leverage on the oars if the oars were lashed to the gunwale. Therefore, outriggers were set up for this purpose. Seats for the oarsmen were mounted between the gunwales. At the stern of this craft there was a small platform for the steersman while the stern itself swept up in a graceful tail. By combining, as it did, the ram and hull all in a one-piece unit, the Dorian galley was an excellent craft from a structural standpoint. Because of its length to width ratioof about sixty-five feet to four feet (about 16 to 1) she was probably fairly fast; however, for the same reason, she must have been a handful for the man on the steering oar, and I suspect that manuevering was aided by having one side backwater while the other stroked forward. The disadvantage of this is that while turning in this manner, the ship was a sitting duck for the enemy since all speed would be lost. It is interesting to note that the bow of this craft is almost identical to a type seen in the Bismarck archipelago today.

On top of the shield of this galley, antlers or branches representing antlers were lashed. An eye was also painted on each side of the bow above the waterline to keep watch on the waters ahead and warn the ship away from rocks, reefs, and any other dangers which the superstitious seamen of those times had conjured up in their minds. We see this habit continued right into the nineteenth century A.D. in the form of figureheads. This idea was displayed on other ships in various forms including a dragonhead (the Vikings), rams actually shaped like the head of a ram, lion, or gargoyle, or these same heads situated in the bow looking over the ram, and with eyes painted on the bow. The sterns of the galleys were often swept up to a point to represent a tail. On Roman merchant ships it was popular to place a carved swan's head in the stern of the vessel. Thus did these seamen gird themselves against the "perils of the deep".



PAPYRUS BOAT



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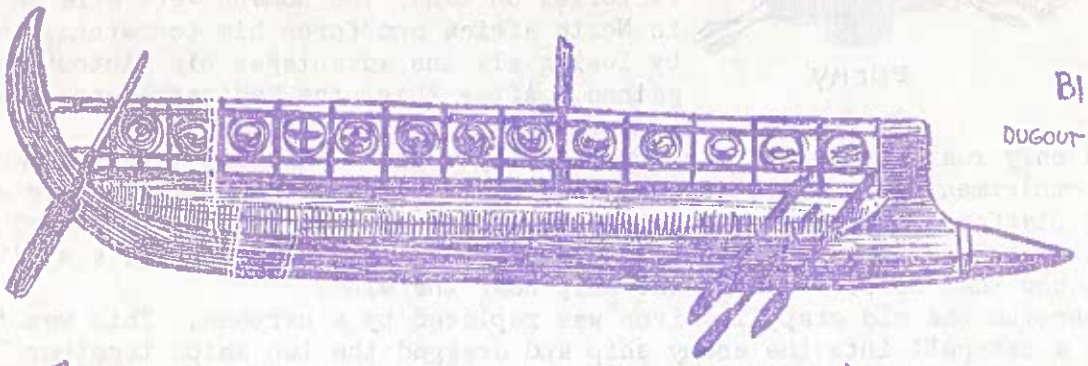
EGYPTIAN MPROVED SHIP

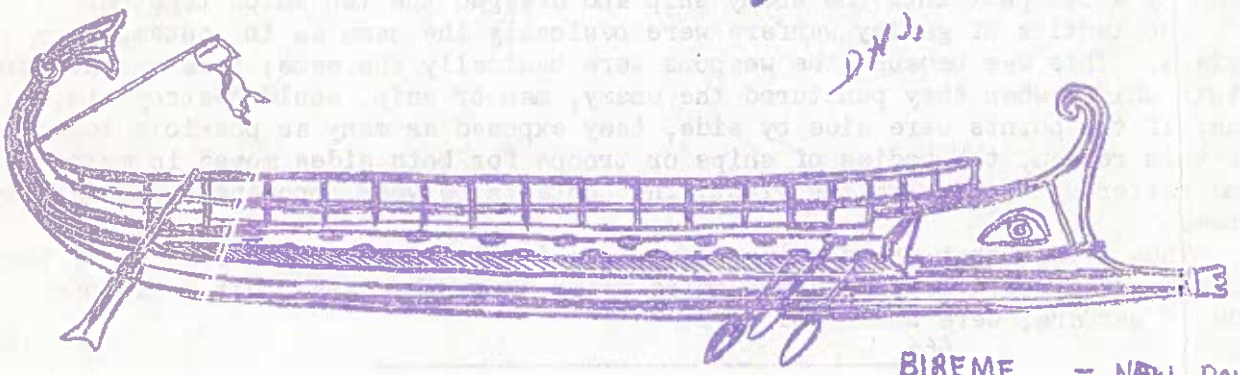
DHP

From this ship, which was a unireme(a galley with one bank of oars), we will proceed to the bireme (a galley with two banks of oars). The first pictures we have of them were made by Assyrians. From this, it appears that the development of the galley proceeded in much the same way as the Minoan ship. Namely, when the Greeks, Phoenicians, or whoever built the ones in the pictures wanted more speed and size they merely built onto the dugout to get these advantages. As before, a large, hollowed tree trunk formed the main hull unit. The inboard or lower bank oarsmen had their seats placed in the main hull in the same manner



BIREME

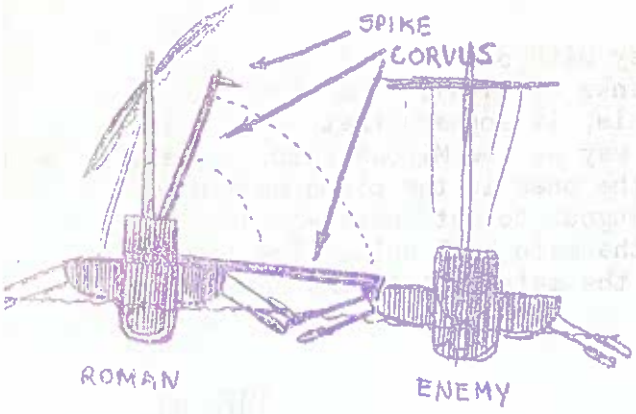
DUGOUT TYPE HULL



BIREME - NEW BOW RAM

as in the Dorian galley only lower than the gunwales. Halfway between these seats were the seats for the upper bank of oarsmen. These were set on the gunwale and ran outside of the hull on either side. A curved rib came out of the main hull at about the level of the water line and led up to these outboard seats. These ribs were then planked over to form a watertight outrigger. The upper bank of oars was lashed to the top of the outrigger while the the lower bank oars went through the outrigger at the level of the upper seats. A light platform was set up on supports over the full length of the main hull so that archers and spearmen could work without interfering with the rowers and at the same time they would not upset the stability of the craft. The old forward shield of the Dorian galley was brought up to a point where it formed the forward bulwark of the fighting platform. This craft also carried a mast with a single square sail. The real improvements in this new vessel lay in its greater speed, the extra stability provided by the planked-in outriggers and its capacity to carry more marines for fighting.

From this point, the development of the galley was aimed at increasing the speed (by increasing the number of oarsmen), maintaining stability, carrying more marines, and, later, putting artillery aboard.



With these new weapons, the Romans secured two victories- one at Mylae and one near Mount Ecnome. After losing one hundred and ninety-three ships in a battle and a storm, Rome rebuilt its navy and inflicted a decisive defeat at the Egadian Islands. During the second war, Rome held the advantage on the sea at the begining and maintained it. Thus, despite Hannibal's victories on land, the Romans were able to land in North Africa and force him to return, thereby losing all the advantages his victories had gained. After this, the Mediterranean became a Roman"lake" for six centuries[10].

The only real changes in the Roman galley were to add some oars and take the rowing compartment into a rectangular area that overhung the sides. There were fighting platforms over this leading to the bow deck. The stern, or steering deck, was sometimes lower than the fighting deck.[11] The last addition was a sprit-sail over the bow that helped to hold the ship near the wind.

At Actium the old grappling iron was replaced by a harpoon. This was fired by a catapult into the enemy ship and dragged the two ships together[12].

The tactics of galley warfare were basically the same as in contemporary warfare. This was because the weapons were basically the same; namely they had points which, when they punctured the enemy, man or ship, would destroy him. Thus, if the points were side by side, they exposed as many as possible to attack.[13] For this reason, the bodies of ships or troops for both sides moved in much the same patterns. In the galley fight, the contacts between opponents were usually melees.

Thus it was that these ships, weapons and tactics that held control of the Mediterranean world for sixteen hundred years, more than any other warship or mode of warfare, were built and used.

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1 Gibson, Charles, Clash of Fleets, New York, Abelard-Schuman, 1962, Pp. 14-16

2 The short acacian tree, one of few trees which grew in that barren land, was the only wood suitable for shipbuilding and only produced short pieces.

3 McDowell, William, The Shape of Ships, London, Hutchinson and Company 1961. Pp 17221

4 Landstrom, Bjorn, The Ship, Garden City, Doubleday and Company 1961 Pp. 16-25

5 Gibson Charles, Clash of Fleets, Abelard-Schuman 1962 Pp. 26-32

6 Tunis, Edwin, Oars, Sails and Steam, New York World Publishing Company 1952 Pg16

7 This was the old fighting platform. Now it was a one-piece unit on the same level with the rowers.

8 Braynard, Frank O., The Story of Ships, New York Grosset & Dunlap 1962 Pg 16

9 Torr, Cecil, Ancient Ships, Chigago, Argonaut, Inc. 1964

10 Mordal, Jacques, Twenty Five Centuries of Sea Warfare, New York Clarkson N. Potter Inc. 1965 Pg 10.

11 National Geographic Society, Men, Ships and the Sea, Washington D.C. National Geographic, Inc. 1962 P29

12 Tunis Edwin Weapons, New York, World Publishing Co. 1954 Pg 34

13 Sea Power, Englewood Cliffs, Prentice-Hall Inc. 1960 Pp 1-20

From this first bireme, these ships developped into rib planking, and keel vessels in much the same manner as the Minoan dugout had developed into the Minoan ship. Of course, the galley retained both its ram and its long narrow shape.

In the new galley, the keel and the storming bridge[7] worked together to give longitudinal strength. This is a somewhat greater amount of strengthening than is usually found in wooden ships, but it was necessitated by the severe shock on the hull caused by ramming. These ships were also ribbed, a practice that Thucydides thinks the Corinthians started although I am inclined to believe that the Minoans deserve the credit for this. As before, the lower bank of oars went through the hull, but the old style of outrigger was used for the upper bank of oars. There were also two decks, one at the bow and one at the stern, for working the ship and fighting. The rams on these ships were shaped like dragon's heads. This had the dual advantages of giveng the ship a properly fierce look and at the same time, the rise in the dragon's head at the eye prevented the ram from being stuck in too far to be removed[8].

The next development was to enclose the rowers and place a fighting deck over their heads. The outrigger was also now an enclosed affair leading out of the rowing deck. The bow was also different. The ram was an odd-looking affair which can be seen in one of the pictures I have included. The bow, itself, led up into what we now call a fiddlehead because of the way the tip of it was carved. These developments came at about the same time as the introduction of the trireme (a galley with three banks of oars) which was the standard Greek warship during XerXes's invasion.

The Greeks at Syracuse are supposed to have built quadriremes (Galleys with four banks of oars) and quinqueremes (five banks of oars). Later, seven, fifteen, and even forty banked ships are alleged to have been built. Different authors have come up with some scholarly gems on the manner in which these ships' tiers of oars and oarmen were arranged in order to explain these ships[9]. What they fail to take into consideration is that the uppermost oars on these larger ships would be much too long to handle. They would make the ship inefficient if not impossible to handle. If there were several men on each oar, it can be seen how the forty-banked ship might be possible, however, it is my opinion that there were never more than five banks of oars on a galley. Any more than that would have made the ship topheavy and would have placed too much weight on the type of hull we know to have been in existence at that time.

Since the quinquereme was about as far as Greek warship development got before their own civil-warring and somewhat outdated military tactics got the better of them, we shall move on and consider the Roman galleys.

When Carthage and Rome went to war, Rome had the best army in the world while Carthage had the best navy. This gave Carthage the advantage because it meant that her army had more mobility and better protected supply routes than Rome was able to manage. It became clear to the Romans that they needed a navy. By copying Carthaginian galleys that had been wrecked on the Italian coast, they soon had nearly one hunderd quinqueremes and twenty triremes. She still did not have the naval experience of the Carthaginians and some compensating factor was needed if Rome was to win a naval victory. Consul Caius Duilius, the fleet commander, realized this. He was sure that Rome's soldiers could best the Carthaginians if they could get to them; he invented the grappling iron. Another invention that came at the same time was the corvus. This was simply a long plank with a heavy spike in the end. When an enemy ship came alongside or was dragged there by a grappling iron, the corvus was dropped, the spike caught in the enemy's deck and held him while the Roman soldiers dashed across the plank to overpower him.

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BOOK REVEEW SECTION

Navies of the Second World War Volume 5 Royal Netherlands Navy
by H.T. Lenton

The Netherlands, although the third largest colonial power, possessed a small navy by comparison to the other naval powers of the second world war. At the outbreak of the conflict, the Royal Netherlands Navy was in a state of decline and although new construction was under way its modernization program came too late as the new ships were either destroyed or captured while still in the stocks. The regular navy stationed in home waters suffered relatively light casualities and most units were able to withdraw and join the British fleet. The navy in effect had little to do as the German sweep through Holland and the Low Countries was primarily a land campaign. In the Pacific, however, it was a different ballgame. The Netherlands maintained a sizable force in the East Indies to guard these valuable chains of islands which formed the bulk of her colonial possessions. After Pearl Harbor, the United States Navy was for all practical purposes eliminated in the Pacific. This was only a temporary setback, but the Japanese took full advantage of it. The Japanese swept through Southeast Asia checked only by the Dutch East Indies Squadron and a few American and British vessels. Against such odds, the result was inevitable. The Dutch fought heroically but their fleet units were either sunk or were forced to withdraw. Dutch forces continued to fight alongside the allies throughout the course of the war although their numbers were sadly depleted. The warships were of very striking design and had many unique features. Basically all the Dutch ships were compromise designs dictated by conditions and budget. Mr. Lenton gives an excellent presentation of this interesting navy. The technical specifications were very complete and the book is well illustrated with photos and in some cases general arrangement drawing. It is a pity that these drawings could not have made of all the major types as those that are included are of the finest quality. At publishers price of $2.98 this book is a good bargain.

----Dan Jones

Uniforms in Color
by Preben Kannik

This book, which must be just about the most complete work ever done on this subject, was originally printed in Danish. Then it came out in a German edition. Now, at long last, an English translation is out. The book has over five hundered color plates with explanations. It covers the period from 1670 through 1965 or 66. Preben Kannik lived long enough to finish his plates and manuscript, then died. His finished project should be available in the English translation in this area soon at a price of $4.95.

*****Ray Freelove

COMMENT ON THE TIMES DEPARTMENT:

On the bulletin board of our field dispensary at Chu Lai, Vietnam, is a picture of two young girls dressed in the latest "Mod" attire-- slacks, high boots baggy sweaters, large belts, straight stringy hair and black leather jackets. The caption reads: "ARE YOU SURE YOU WANT TO GO HOME TO THIS?"