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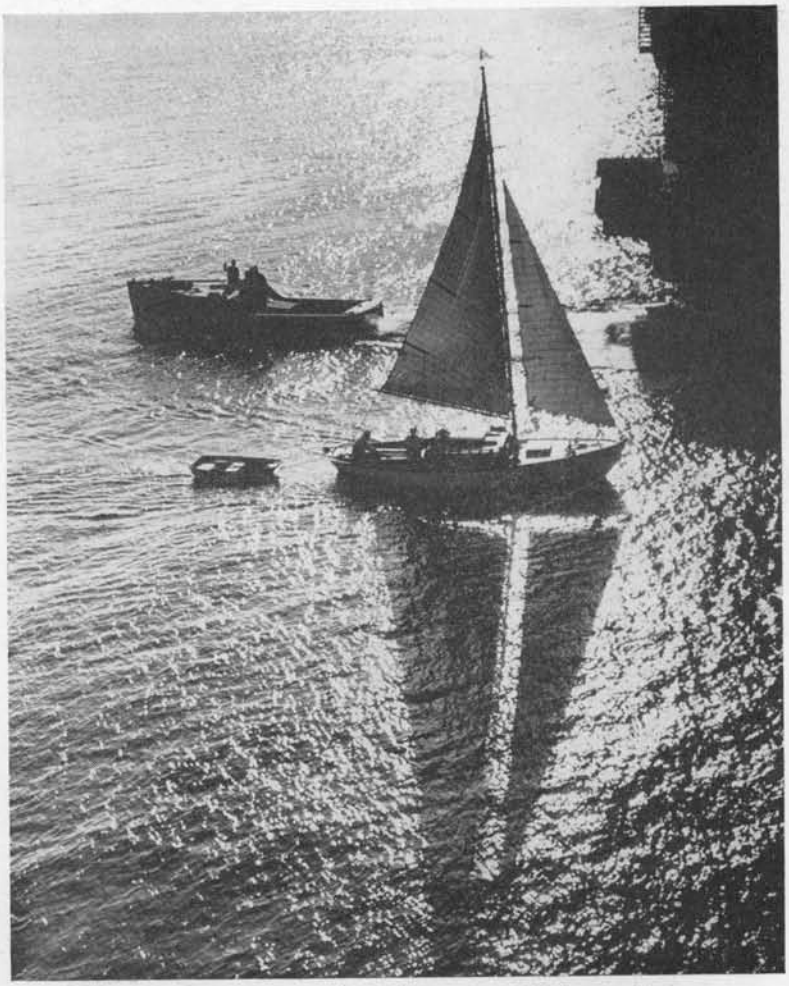

Sailboat passing through drawbridge near Old Lyme, Conn., on the Connecticut River *Yater photo*

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A Twentieth Century Sailor Reviews a First Century Shipwreck

By EDWIN SMITH

DURING the First World War I spent a winter in the Mediterranean in command of a flotilla of H. M. ships of war based on Taranto, Italy, and Malta, and while there I made a careful survey of St. Paul's Bay where a notable shipwreck took place in A.D. 58 or 59.

In the twenty-seventh chapter of *The Acts of the Apostles* St. Luke gives us a graphic picture of the last voyage and shipwreck of a grain ship of Alexandria in which he and the great apostle to the Gentiles sailed as passengers, bound for Rome.

As I was caught out in a similar storm in December, 1918, while on a voyage from Taranto, Italy, to Malta I became interested in St. Luke's account of their experiences, and later that winter I read again his story of their voyage and shipwreck, in the original Greek, paying particular attention to the sea terms used by him.

Those who happen to know something of the sea, ships and storms, having learned the hard way, are often greatly amused when reading stories written by men who were making their first voyage at sea; and I confess that I expected to find in St. Luke's account something similar, since he was but a passenger on this particular voyage.

I did not read very far, however, before I realized that Luke the physician was at the same time a first class sailorman, and my respect for him was thereby greatly increased. In this account he shows conclusively that he had a thorough knowledge of ships and of seamanship that could be gained only in one way, viz., by experience. No amount of reading or observation of ships from the shore would fit him for the writing of the narrative of St. Paul's shipwreck and his own. Such knowledge and insight as is here displayed comes only by experience. I do not mean to say that he must have followed the sea as a sailor before the mast; in fact the same evidence shows that he did not, but that he went to sea nevertheless, and for more than one or two short voyages. He spent years at sea at some time or other. When we first hear of him he was living at Antioch in Syria where he was known as a clever physician (surgeon). Since Antioch carried on an extensive trade with the west, and since many of the ancient ships were large and carried hundreds of passengers, there is great probability that such ships carried surgeons too, and Luke may have been one of them.

One of the most enthusiastic seamen I ever met was the doctor on board the battle cruiser Endymion when I was navigator in her. His name was Alan Moore, now Sir Alan Moore, and we became close friends on a long and tedious voyage from Gibraltar to Chatham, England, when we towed a monitor all the way, and encountered a violent storm in the Bay of Biscay where we saw a large Dutch freighter sink before our eyes, less than a quarter of a mile from our ship. He was a doctor and a good one, but he was also a first class sailor, greatly interested in the sea and in all kinds of ships. And such a man I believe St. Luke to have been.

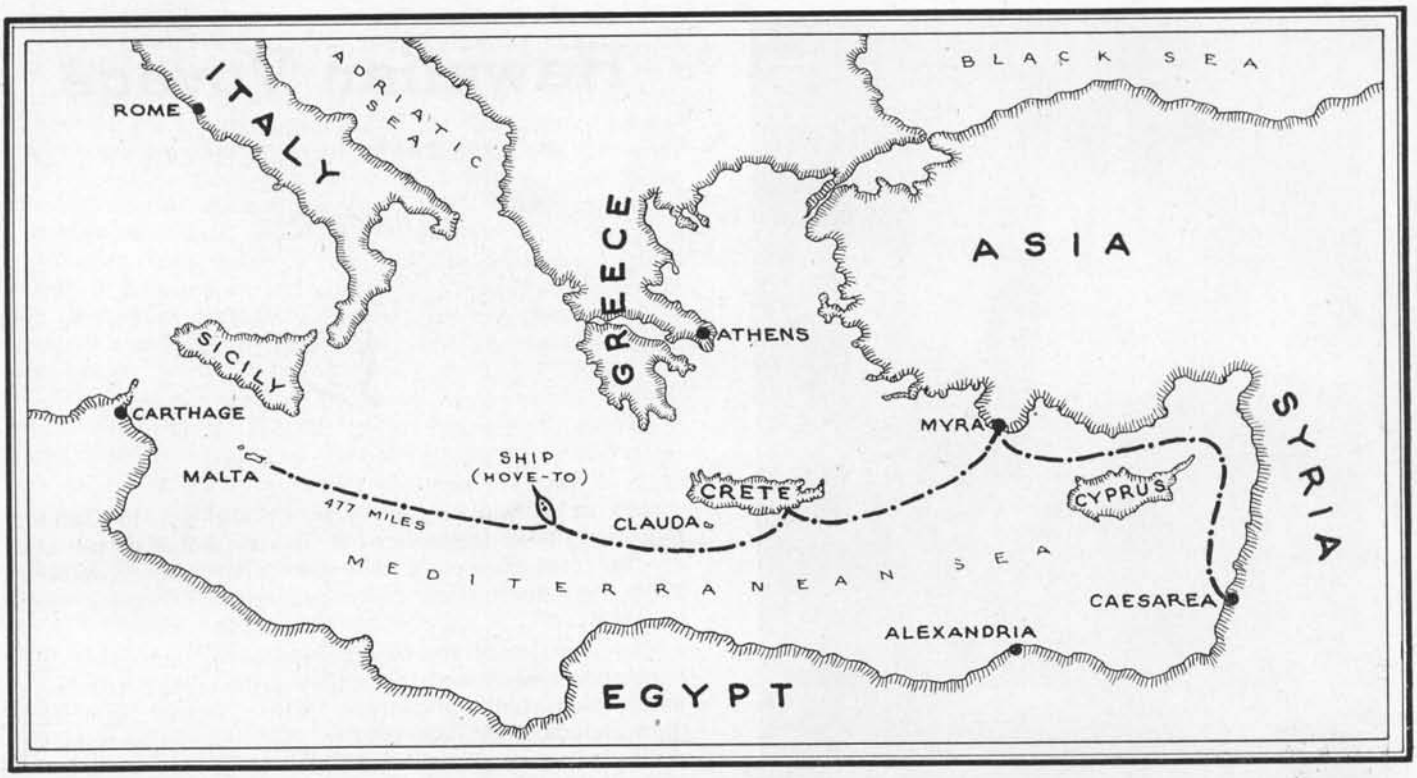
Next, what about Paul? Was he a sailor too? He certainly was. Paul, the preacher and missionary, was by far the best sailor in the ship, and it would have been better for all concerned if they had followed his advice. Paul, as we know, was a lawyer before he became a missionary of the Gospel, and this narrative shows plainly that he was not only a good sailor but something of a meteorologist as well. He seems to have had more sea sense than any other man on board. Paul, you may have noticed, is not quite so reticent about himself and his past as is St. Luke. I would like to point out in this connection that there are three years of Paul's life unaccounted for in the New Testament. In Galatians i, 17, 18, we read "I went into Arabia, and returned again unto Damascus. Then, after three years I went up to Jerusalem." Where was he, and what was he doing during those three years? No one knows that now, but I would not be surprised if someone should make the discovery that he spent the whole three of them at sea. Next turn to II Corinthians xi, 25, "Thrice I suffered shipwreck," Now a man does not usually get shipwrecked every voyage, and the mere mention of three shipwrecks would seem to indicate that he had not only a long but bitter experience with the sea.

It only requires a little knowledge of the history of the countries bordering on the Mediterranean to know that by the time of this shipwreck, say A.D. 59, going to sea was a very ancient profession, and that many of the men who commanded these larger vessels were experts at their job. Certain it is that the account of their seamanship given by St. Luke on this occasion leaves little to be desired. In fact his description of what they did is almost word for word what the most modern works on seamanship tell us we should do if we were placed in similar circumstances.

It is when we come to make inquiry about the ships of the ancients that we experience the greatest difficulty. I know of no book on the subject that bears directly upon either their size, shape or rigging, so that we are dependent upon a few indirect references of ancient writers, representations on coins, etc., which in all probability are correct only in general outline and not in detail, except perhaps in detached parts such as the head and stern ornaments, rudders, anchors, etc.

There are two circumstances, however, to which we are indebted for much valuable information respecting the very class of ships with which we are at present concerned.

The Emperor Commodus (A.D. 161-192) during a season of scarcity imported grains from Africa. In commemoration of this a series of coins were struck bearing upon the reverse side figures of ships under sail. One of these Alexandrian wheat ships was driven by stress of weather into the Piraeus. The extraordinary size of the vessel excited much curiosity on the part of the Athenians; and Lucian, who visited her, lays the scene of his dialogue *The Ship, or Wishes* on board of



her, in the course of which we learn many interesting things regarding the ship, her voyage and management.

Who would ever have thought of going to Pompeii to find out about the ships of the ancients, or the ships of St. Paul's comparatively modern day? And yet it is there that we get the most real help, for the marbles and frescoes of Pompeii afford valuable details and have the added advantage of synchronizing perfectly with the voyage of St. Paul, the catastrophe to which they owe their preservation having happened less than twenty years after his shipwreck.

I will now endeavor to reconstruct one of these ancient ships of the first century of the Christian era.

In general outline they did not differ greatly from sailing ships of seventy-five years ago in America, especially in their underwater parts, with the exception that the bow and stern were much alike. The bulwarks were open rails, and cabooses or galleries were built at both ends. Perhaps the greatest difference between these and all classes of modern ships is in the steering arrangements. The ancient vessels were not steered as those in modern times by a single rudder hinged to the stern post, but by two great oars or paddles, one on each side of the stern; hence the mention of them in the plural number by St. Luke. Indeed it was not until around the close of the thirteenth century that the modern hinged rudder came into general use.

The point of greatest interest in connection with these ancient craft is their size. Many of the wheat ships plying between Egypt and Italy in St. Paul's day must have been upwards of one thousand tons burden. They must have been of considerable size to make them pay. Small ships are profitable only for short voyages. But we are not left to our reasoning, unaided by any statements of facts, as for example the ship in which Luke and Paul sailed on this occasion had a cargo of wheat and 276 souls in all. To accommodate that many people on board for weeks at a time the ship must be considerably larger than an ordinary coasting vessel in our own day. The ship in which Josephus sailed, and which was wrecked on his voyage to Italy, contained 600 people—a good passenger list for a five or six thousand ton steamer of the present day.

The best account we have of the size of some of these ships is that given by the carpenter of the Isis, the Alexandrian vessel which was driven by contrary winds to Athens. According to the data supplied, and after making full allowance for difference in construction, this ship must have been between 1,100 and 1,200 tons burden. I find that some writers would make her upwards of 1,300 tons.

The rigging of these ancient vessels was simple. For the most part it consisted of one principal mast which carried a long yard, spreading a great squaresail which was furled on the yard aloft. These large grain ships in addition carried topsails. They generally had a smaller mast close to the bow on which they spread a small squaresail called the *artemon*. In addition they carried triangular sails for the purpose of making the ship steer easier under different circumstances, and for the purpose of tacking or wearing ship. These also were made use of in a storm when the larger sails had to be taken in.

We must not forget when we read this story that the ship in which St. Paul sailed was fitted for emergencies. Failure to understand the construction and rigging of these ships is why so many commentators made such unhappy blunders when dealing with the incidents recorded in the twenty-seventh chapter of the *Acts of The Apostles*.

(*Continued on page* 74)

TWENTIETH CENTURY SAILOR (Continued from page 33)

For the sake of brevity we will pass over the details of the voyage until the vessel arrives at Fair Havens on the south coast of Crete. It is from this port that she sailed on what proved to be her last voyage, the narrative of which I now propose to examine.

Though St. Luke fails to make any reference to the condition of the ship, an omission which a real sailor would not have made, I am persuaded that her condition was none too good, for reasons that will appear as we go along. At Fair Havens the skipper first decided to remain there for the winter months; but when later he announced that he was going to shift up the coast to Phenice because the harbor there afforded better shelter for the ship, we find Paul objecting and urging him to remain where he was. He assured them that such a move was fraught with danger "not only of the lading and the ship but also of our lives."

We are told that it was the season when "the south wind blew softly" so that the danger did not manifest itself in the threatening condition of the weather, but we may feel sure that, since the move suggested by the skipper was one which promised greater safety and comfort to all hands, St. Paul would not have opposed it without good reasons. No reasons are given however, another characteristic of St. Luke's narrative, and a second proof that he was not after all a real sailor who had served his time at sea, for a real sailor never fails to give his reasons; indeed he is liable to become tedious in that respect. Nevertheless no sailor can read this narrative and fail to discover what those reasons were. Briefly, I believe, they were these: this ship was none too safe even in the best of weather, and he, for one, would not run the risk of being caught out in a gale in her at this season of the year if it could be avoided. Paul had been in the ship some weeks already; they had had a hard beat to windward in working down to Crete, and in those weeks Paul had made some observations and indulged in some reflections which he had kept to himself. He noticed, for example, that the ship was leaking considerably, and when the squalls blew hardest she strained and worked in a manner far from reassuring; and I can hear him saying to himself, "This ship is hardly seaworthy; she works and leaks even in these sheltered waters and if she is ever caught outside in a Levanter, such as is common in the winter season, she will go to pieces under our very feet." Kindly note at this stage that Paul said the harm and injury would come (1) of the lading, that is, the cargo of wheat which the sea water would injure; (2) to the ship, i.e., she would strain and perhaps break up in a gale; (3) to our lives in consequence, for our safety depends very largely upon the safety of the ship. Paul's contention then was simply this: "Though I concede that Phenice is a better harbor than Fair Havens to winter in, yet I maintain that the risk we run in putting to sea at this time of the year in this ship is too great to make it worth while; and besides all this I don't like to see the balmy south wind at this season, for it generally backs round to the east-northeast and blows a gale, and if it catches us while crossing the Bay of Messara it will blow us off the land altogether, and then look out!"

The skipper discussed the matter with the centurion and decided to sail immediately since the weather was fine and the wind two points abaft the beam. They had thus every prospect of reaching their destination in a few hours. They had not gone far, however, when a sudden change in the weather took place, and the thing that St. Paul had feared came to pass. The ship was caught in a cyclonic gale which blew with such force that they could not face it and were compelled to run before it. We know that it blew them out of their course toward the island of Clauda, about twenty-three miles west-southwest from Crete. If therefore we know about where the ship was when the gale overtook her, we can form a tolerable estimate of the direction of the wind with drove them thither. From the narrative itself it is easy to see that the wind was east-northeast and that, you will observe, is the direction mentioned by St. Luke in verse fourteen where he calls the wind *Euro-Aquilo* (see the revised version of the New Testament) which is the point midway between *Eurus* and *Aquilo*. Now, according to the twelve winds of the ancients, *Eurus* is east, and *Aquilo* is northeast, and therefore the point midway between the two is *Euro-Aquilo*. The Greek word in the manuscript from which the authorized version was made was *Eurokludon* rendered by the word *Euroclydon,* which evidently is not the word St. Luke used. (*Euroclydon* in Greek does not mean anything sensible so far as I can make out. It evidently is a jumbled word.) All the older manuscripts including *Codex Sinaiticus,* which had not been discovered when the authorized version was made, have the word *Eurakulon,* i.e., *Euro-Aquilo* or east-northeast.

The first thing to be done is to make the ship snug for riding

out the gale. The large squaresail must be furled aloft and storm trysails hoisted, and next they must at once resort to frapping the ship. What, undergirding already! Alas, then the worst fears of St. Paul are now confirmed. St. Luke tells us that they frapped her after she had gone only twenty-five miles, a sure indication that she was straining and leaking badly. I may say that frapping is sometimes still resorted to, but in every instance it is where the ship is old and weak, or in consequence of having sustained some damage. I wish to point out here what nearly all the commentators have failed to recognize, but which is of the utmost importance—that the real danger before the ship in which Luke and Paul sailed was the danger of foundering at sea owing to her leaky condition, and that if they had not providentially made the land, and been thereby enabled to save their lives by running the ship ashore, she would have foundered at sea and all on board would have perished.

We are told that, being apprehensive of being driven towards the Syrtis, "they lowered the gear" (see revised version verse seventeen). It is not easy to imagine a more erroneous translation than that given in our authorized version, "Fearing lest they should fall into the quicksands, strake sail and so were driven." That would have been indeed fatal. Had that been done they would have fallen into them in about one day, for the Syrtis lay to the west-southwest—the direction to which the wind was blowing, and about 200 miles distant.

Since we know that they did not fall into the quicksands we are sure that they did not strike sail and run before the gale, but adopted some other plan. Imagine how that ancient mariner would resent the statement in the authorized version of the Scriptures, which in effect tells us that he was no seaman; that he was a man not only without knowledge of the first principles of seamanship but also lacking in plain common sense. But I know, and every other sailor knows, that he was anything but that. He was a real sailor, a master of his art. I take off my hat to him today.

Follow the steps taken by him from here on to save his ship, cargo and crew.

(1) He hove the ship to, that she might the better ride out the gale, and he hove her to on the proper tack. When a ship is being hove-to in proximity to any danger, the proper thing to do is to heave her to on the tack which, considering her forward motion, will always carry her away from the danger rather than towards it. In this instance they would lay the ship to on the starboard tack, that is, with her right hand side facing the wind. She would thus be pointing about north, or away from the African coast and the Syrtis; and any headway she might make while hove-to would be carrying her on her course towards Italy, while her broadside motion (drift) would be, speaking generally, to the westward.

On the following day when the gale continued unabated they lightened the ship. Every step hitherto taken indicates skillful seamanship, and so here, for all works on seamanship recommend this as one of the things which should be done. They threw overboard everything not necessary now to the working of the ship. The relief which a ship experiences by this would be the same as when a warship throws her guns overboard. She would ride higher and make less water.

A dreary interval of eleven day succeeds, the gale continuing with unabated fury. Neither sun nor stars can be observed, and at length we are told that "all hope of being saved was taken away". But why? An ancient ship without compass and without celestial observations had no means of keeping a reckoning. This was no doubt a situation of danger, but not necessarily one of despair, for she might have been drifting into safety. The true explanation, as I have already indicated, is this: their exertions to subdue the leak had been unavailing; they could not tell which way to make for the nearest land in order to run their ship ashore, the last recourse for a sinking ship; but unless they did make the land they must founder at sea. Their apprehensions therefore were caused not so much by the fury of the tempest as by the state of the ship.

At length, on the fourteenth night of being driven through the sea of Adria, towards midnight the seamen suspected that land was near. If we take St. Paul's Bay as the actual scene of the shipwreck we can have no difficulty in stating what the indications must have been. No ship can enter it from the eastward without passing within a quarter of a mile of the point of Koura; but before reaching that point the land is too low and too far back from the track of ships being driven from the eastward to be seen on a dark night. When she comes within this distance it

is impossible to avoid observing the breakers on the shore, for with northeasterly gales the sea breaks upon it with such violence that one is reminded of Campbell's line, "The white wave foaming to the distant sky."

On the writer's first visit to this spot he remained all night. A *Euro-Aquilo* was in progress and the white spray rose forty or fifty feet in the air. On the shore the noise was deafening. No ship could have entered St. Paul's Bay that dark night without these breakers on the shore being seen.

During a second visit the writer took a boat and sailed out into the bay to make further observations from the sea, and ran a line of soundings with the result that there is now no doubt in his own mind that the point of Koura is the land which drew near them on that eventful night. St. Luke says that they were wrecked on Malta (Melita) and I have shown that their drift would carry them in that direction.

The next point is interesting. How far would the ship have driven from Clauda about midnight when the fourteenth day had come? The answer to that question depends upon the rate of drift and the time elapsed. While in Malta I questioned a good many captains who had sailed the Mediterranean for many years, and who during the war had been running regularly to Crete, as to how far such a ship as I have supposed Paul's to be would drift an hour while hove-to. The general consensus of opinion was from one to two miles an hour, or thirty-six miles in twenty-four hours, and this agreed with my own calculation.

I come now to the time elapsed. The time consumed in driving through the sea of Adria is thirteen days complete and a fraction of a day. Taking then the calculated rate of thirty-six miles a day and the time elapsed as thirteen and one-quarter days, all we have to do is multiply thirty-six by thirteen and a quarter to get the calculated drift, which is 477 miles. The course is west by north and when I measured the actual distance from a point under the lee of Clauda to the entrance to St. Paul's Bay, Malta, I got 476.4 miles. I admit that a coincidence so close as this may be to a certain extent accidental, but it is an accident that could not have happened had there been any inaccuracy on the part of the author of the narrative with regard to the numerous incidents upon which the calculations are founded, or had the ship been wrecked anywhere but at Malta, for there is no other place agreeing either in name or description within the limits to which we are tied down by calculations founded on the narrative.

The ship now approaches the termination of her disastrous voyage. Land has not yet been sighted, but to the watchful senses of the "shipmen" the sound or appearance of breakers tells them that it is near, or in the nautical language of St. Luke, that it is approaching. The hope that was taken away is now restored. They can now adopt the last resource of a sinking ship and run her aground; but to do so before daybreak would be to rush upon certain destruction. They must bring the ship to anchor if it be possible, and hold on until daybreak, when they may find some creek into which they may be able to thrust the ship.

During the interval which remained before day St. Paul exhorted the sailors to take some food, since they had not had a square meal for a fortnight, and this they did. Then with renewed energy they made a last effort to lighten the ship, not only by pumping but by throwing the wheat into the sea—a sure indication that she was settling fast by reason of the water coming in through her weakened hull and empty seams. That man Paul, preacher though he was, had a head on him and was a born leader of men. I would rather go to sea tomorrow in a square rigged ship with Paul in command than with the captain of this grain ship, though I have already said that he was one of the best.

When the day broke, seeing what they thought was a creek (though it was really the opening between Salmonette Island and the Mediterranean) they let down their rudders, slipped their anchors, hoisted the *artemon* (foresail, not mainsail as in the authorized version) and prepared to beach the ship. Selecting a place where two seas meet, they ran the ship aground, bow on, which explains the "anchoring by the stern" since this held the ship in the proper position for beaching. I know this procedure has been severely criticised by persons who have not fully understood the circumstances, as for example the Scotch sailor who was heard to remark that "there was just ae thing in the scriptures that he could na quite gae along wi—St. Paul's anchoring by the stern. Na doot the apostle was an inspired man, but he should hae keepit her head til't." Now all these objections vanish when we come to know that the object was to slip the cables and beach the ship at daylight. I need hardly mention that St. Paul had nothing to do with anchoring her, though doubtless he would approve of the method under the circumstances. I do not mean to say that these vessels were usually anchored by the stern any more than I would say that English ships are usually anchored by the stern because Nelson anchored his fleet that way at the battle of the Nile.

Though there is now no creek in St. Paul's Bay that could possibly be sighted by anyone on a ship, yet at that distance in the early dawn the flat rocky space opposite Salmonette Island

on which the sea would then be breaking was probably mistaken for a beach. From the opposite side of the bay it looked like a beach to me too, but when I rowed over I found it to be a flat bed of solid rock formation. For quite a distance from the shore the water was only about two feet deep and then abruptly dropped into perhaps twenty or more feet. No wonder, I thought, that "the fore part stuck fast, but the hinder part of the vessel was broken off by the waves."

It is not stated that they ran the vessel into the supposed creek, but "onto the shore where two seas met", showing either that the supposed creek was nonexistent, or that for some reason they decided upon the other spot after the ship was under way.

We have seen in our examination that every statement as to the movements of this ship, from the time when she left Fair Havens until she was beached at Malta, as set forth by St. Luke has been verified by external and independent evidence of the most exact and satisfying nature; and that his statements as to the time the ship remained at sea correspond with the distance covered; and finally that his description of the place arrived at is in conformity with the place as it is. All of which goes to show that Luke actually made the voyage as described, and has moreover shown himself to be a man whose observations and statements may be taken as reliable and trustworthy in the highest degree.

The twenty-seventh chapter of the *Acts Of The Apostles* is a simple statement of facts, and I, a sailor of the old school and a teacher of modern methods in navigation, am thoroughly convinced that this whole book is of the same high order, and of imperishable value.

HAWAIIAN VOYAGE (Continued from page 35)

big recessed windows and full length doors open wide to catch the Pacific breeze.

We wandered about admiring the massive furnishings of koa wood inlaid in mother of pearl and gold, and pictures of Hawaiian royalty for 200 years adorning the walls. We were amazed to find a likeness of one stout lady in Victorian dress who bore the simple title of Princess Kahanuipauokalanikauleleiaiwi!

As we rowed back from the beach a native fisherman with a tremendous outrigger canoe loaded with fish stopped to chat and show us his catch. There were swordfish six feet long, fat tuna weighing seventy-five pounds, and dolphin still changing their lovely colors in death. This was the day's catch on his small sampan, for these waters are the fisherman's delight.

Tonight the moon is up. Almost full, it shines across the still water and the dark slopes of Hualalai to meet Makai. Lights of the village form a necklace along the shore. The warm night wind from the island is fragrant with the odor of ginger and gardenias. Out of the quiet night an outrigger slips silently past, not a sound from the paddles. Pink lights flame on the reef where spear fishermen work, a dog barks from the shore, while we sit on deck and are glad we came.

We were about to shove off from Kailua for Napoopoo, to the south of us, when someone hailed us from shore. It turned out to be Frank Ewing, former Honolulu yachtsman and a boat lover, who insisted most kindly on showing us his beloved island of Hawaii. He agreed to pick us up in Napoopoo.

We got our kedge out successfully with the aid of the trip line and, escorted by a school of dolphin flashing through the sparkling water, sailed southward along the green Kona coast with a pleasant onshore breeze. This wind blows daily with varying force onshore, but changes at sunset to blow off the island. It was this fact which enabled Capt. Cook to enter Kealakekua Bay with his square rigged ships a century and a half ago.

Part way down the coast we spoke the Tahiti ketch Pauhana, with her owner, S. R. Field, his wife and two small children aboard. To meet another sailing ship in these unfrequented waters is quite an event.

We sailed into the bay at noon. It opened up before our delighted gaze much as it must have been 200 years ago, a tiny native village clustered on the palm fringed beach at the base of a towering *pali*. Through the glass we found Cook's monument in the lee of the point, almost buried in verdure.

Since childhood I have dreamed of this lovely bay, the translucent water, the mighty mountains and the simple people living along its coral beaches.

We dropped our anchor in six fathoms and found Frank waiting for us on the pier. At breakneck speed (the only speed at which anyone seems to drive here) we went over a single