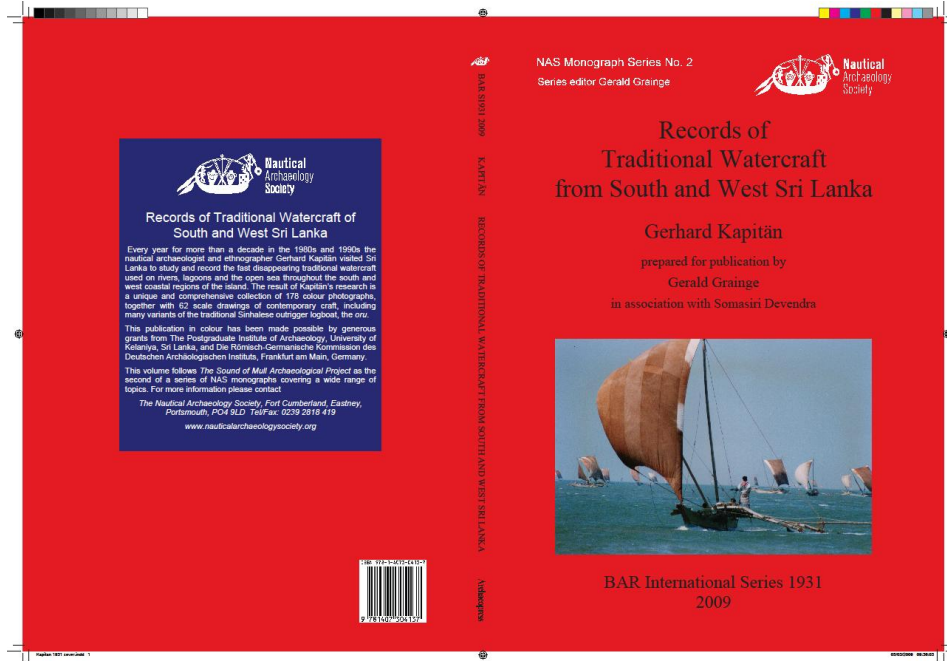


[K: RESEARCH]



2009

Records of Traditional Watercraft from South and West Sri Lanka

Gerhard Kapitän

Prepared for publication by
Gerald Grainge
in association with Somasiri Devendra

Nautical Archaeology Society - NAS Monograph Series No.2
British Archaeological Report - BAR International Series 1931

Publishers:

Archaeopress, Oxford, England. ISBN 978 1 4073 0413 7

Sponsors:

The Post Graduate Institute of Archaeology, University of Kelaniya, Sri Lanka
Die Romisch-Germanische Kommission des Deutschen Archäologischen
Frankfurt am Main, Germany

To give the late Gerhard Kapitän the respect due for his pioneering work and the great physical and mental stress he endured in the pursuit of his vision of recording Sri Lankan watercraft, none of the 178 photographs, 47 scale drawings, or his notes, are reproduced here. The excerpts from the book produced below are only personal contributions of the Editor (Gerald Grainge) and me to the volume: we were privileged to help the author see his work in print while he was yet amongst us.

Contents

Gerhard Kapitan		
Editor's preface		
Acknowledgements		
Note on scale drawings		
Note on copyright		
1	Introduction by Somasiri Devendra	
2	Author's commentary on the photographs and drawings	
3	The author's research objectives	
4	Classification of watercraft and index to photographs and drawings	
5	Bamboo rafts (<i>una-pahura</i>)	
6	Basic log rafts	
7	Lashed log rafts (<i>kattu-maram</i>)	
8	Pegged log rafts of four or five logs (<i>theppam</i>)	
9	Fishing logboats without outriggers (<i>vallam</i>)	
10	<i>Mā-däl-vallam</i> for shore seining	
11	Sea-going <i>vallam</i> with outriggers (<i>vallam-oru</i>)	
12	<i>Vallam</i> -type dinghies and tenders	
13	Outrigger logboats (<i>oru</i>) on inland waters	
14	Oru for sling net fishing (<i>visi-däl-oru</i>) and for fishing used on lagoons (<i>kalapu-oru</i>)	
15	Fishing oru in Weligama Bay (<i>varā-oru</i>)	
16	Oru for shore seining (<i>mā-däl-oru</i>)	
17	Seagoing <i>oru</i> , rigged with double-sprit sails	
18	<i>Oru</i> rigged with oars and sails with outboard rowing rails on both sides	
19	<i>Oru</i> with one short rowing rail on the outrigger side	
20	<i>Oru</i> with one long outrigger-side rowing rail between the two ends of the hull	
21	<i>Aṅgula</i> - double-hulled craft with a platform built over two oru	
22	<i>Ma-dal-paru</i> - sewn-plank and double logboat craft for shore seining	
23	Scale drawings of logboat hull-outrigger boom joints	
24	Scale drawings of archaeological finds	
Appendices		
1	The author's surveying methods	
2	The making of an <i>oru</i> in Sri Lanka by Vini Vitharana	
3	Thoughts on the sailing qualities of <i>oru</i> - and some afterthoughts by Gerald Grainge	
4	Standardization, orthography and pronunciation guide by Somasiri Devendra	
5	Nautical terms and names of watercraft in Sinhala and Tamil languages	
Bibliography		
Index of Place names compiled by Somasiri Devendra		
General index		

Gerhard Kapitän



Gerhard Kapitän, born in Meißen (Dresden, Germany) on the 23rd April 1924, is a scholar whose main field of study is maritime archaeology and ethnography.

After World War II, when he was compelled to serve his country, he studied graphic design and sculpture at the Kunstakademie of Dresden; from 1950 to 1953, although he did not graduate, he studied archaeology at the Humboldt University in East Berlin.

During 1954 he worked freelance with various cultural organizations in Berlin and from 1958 to 1961 he was involved as scientific collaborator and secretary of the underwater research team for the German Academy of Sciences, Berlin.

In 1958 he started working in south-eastern Sicily in collaboration with Pier Nicola Gargallo, a Sicilian benefactor and amateur underwater investigator. When the building of the Berlin Wall was announced in 1961, Kapitän determined not to return to East Berlin and set up his new home in the Sicilian town of Syracuse, becoming fully involved in the pioneering and challenging goal of promoting the scientific management of underwater research in Sicily. Since 1965 he has continued his research into underwater archaeology and into the navigation technologies of the ancient cultures in the wider Mediterranean scenario as an independent scholar, devoted mainly to southern Italy, the Aeolian Islands and Sicily, Malta and Greece. Among his huge diachronic body of research along the coastline of south-eastern Sicily mention should be made of the exceptional work done at the Marzamemi shipwreck, conducted by Kapitän in co-operation with the Syracuse Cultural Heritage Department, at that time directed by Luigi Bemabo Brea. In the Marzamemi shipwreck Kapitän discovered important marble elements of a church dated to the 6th century AD. He carried out specialized classification studies of recovered underwater artefacts such as amphorae and anchors. In all these years of meticulous research he established, completely self-funded, a bibliographic database of Mediterranean underwater archaeology and a specialized library, largely focusing on Sicily and the nearby islands, that has been and still is a great tool for scholars and students involved in such disciplines.

His interest in the earliest navigation facilities and in ancient boat construction techniques led him to be involved with maritime ethnography and from 1985 until 2004 he worked on the recording and the preservation of Sri Lankan traditional watercraft.

He is the author of more than 100 published scientific papers.

Maria Rosa Iovino

Editor's preface

Preparing Gerhard Kapitän's collection of scale drawings and photographs of traditional watercraft from west and south Sri Lanka for publication has involved far more than the usual editorial tasks of resolving stylistic,

grammatical, orthographic and semantic uncertainties with the author and formatting the page layout in consultation with him. The material submitted consisted of Kapitän's drawings, photographs and captions - still the centrepiece of the book - together with a brief introductory overview by the author (now Chapter 2) and an early draft of his classification of the watercraft of Sri Lanka (now Chapter 4) along with brief notes on each of the drawings; apart from this, none of the text now before the reader was included in the material originally submitted for publication.

However, Kapitän had previously published extensive accounts of many of the watercraft which feature in his classification and in his illustrations. It seemed right that I should exploit this material to shed as full a light as possible on each of the types that he had recorded. To this effect, I have written up a brief introductory comment to each of the chapters (5-24), based on what he had previously published. Kapitän had also written up his research visits to Sri Lanka in a set of annual field notes, but unfortunately, I had access to only two of these. Moreover, some of the types, such as the bamboo rafts (Chapter 5) or the *vallam* (Chapter 9), do not appear either in Kapitän's articles or in the field notes available to me and this is reflected in the introductory comment; in the case of the *vallam* I was able to draw on material from other scholars who have published in this field. In other cases, such as that of the *Mā-dāl-paru* (Chapter 22), the material published by Kapitän is rich indeed and it has been possible to supplement this with material published by Kentley and Gunaratne (1987, 2003). I have also been fortunate to have on my desk Vini Vitharana's *The oru and the yatra* (1992); this is the only study of the *oru* as a specific type of watercraft, but it is not easily accessible in the UK. Professor Vitharana has kindly agreed to allow me to reprint an extract from his book describing the way *oru* are built (Appendix 2).

Writing up the introduction to each chapter has inevitably involved a considerable amount of selection and precis; in particular, in his articles Kapitän devotes much attention to the study of ancillary items of equipment, such as anchors and oars, which I decided not to include here. I also decided - for want of linguistic skill - to confine my attention to Kapitän's articles in English and German, mainly in the *International Journal of Nautical Archaeology (IJNA)* and *Das Logbuch*, believing that his few publications in Italian and Spanish would not add much to the picture.

In making such decisions I have endeavoured to represent faithfully the essence of Kapitän's accounts of the watercraft he studied. If I have failed, the responsibility is entirely mine. In addition to drafting the introductory pages to the individual chapters, I have allowed myself the luxury of writing up in my own name some thoughts about the sailing performance of the different types of watercraft (Appendix 3).

In this enterprise I owe an enormous debt of gratitude to Somasiri Devendra. He came to know and admire Kapitän in the 1990s and to recognize the importance of his achievement. It was his enthusiasm to see Kapitän's work in print that led to the decision of the NAS to publish it. All Kapitän's material, apart only from the photographs, has been supplied by him, in the case of the drawings on disks prepared by him. He reviewed and redrafted this initial material and provided an introductory Chapter and an Appendix on pronunciation and orthography, together with the index of place names. In particular, his work on Kapitän's classification of Sri Lankan traditional watercraft was crucial. Kapitän's central idea was that his drawings, photographs and fieldwork should be distilled into his classification of Sri Lankan traditional watercraft. This was to be his longest lasting contribution. Yet, although he had made several early drafts and published two of them (1987a, 137; 1986, 68-9), he had left no final version, just two classification lists: one for the photographs and one for the drawings, which did not exactly match. Using these two lists and combining them, it became Somasiri's task to create the final classification (abbreviated and expanded), which is now published as Chapter 4. Of course, as a researcher in an allied and overlapping field, Somasiri was well aware of topics where he did not always agree with Kapitän. That is of the nature of things. It is to Somasiri's credit that he did not allow himself to be influenced by such differences of view; it was his overriding concern to preserve the integrity of Kapitän's research.

As editor, I have also benefited from Somasiri's advice and encouragement. As I have been working on the book, he has been available to me, by email and snail-mail, to respond to queries of all kinds, to look

over drafts and to offer much appreciated advice. His contribution has been substantial and invaluable and I thank him for it.

In the end both of us recognize that this book is Gerhard Kapitän's achievement. He passionately believed in the importance of the traditional watercraft of Sri Lanka in terms of heritage, not only for Sri Lanka, but for the world. His vision of a maritime museum to preserve these craft was realized in 1992 in the old Dutch warehouse, situated near the Old Gate of Galle Fort, but unfortunately it was devastated by the 2004 tsunami. But before the museum could be established he saw that there was work to be done:

What is certain is that [to prepare for a museum] the inventory work has to be done in any event and that no time should be lost in beginning with it. This is what I try to do, being aware that these records are only a preliminary work and hardly free from errors (Kapitän, 1987a, 136; reprinted at Chapter 3, page 13).

This book is Kapitän's inventory of traditional Sri Lankan watercraft.

Gerald Grainge

Acknowledgements

Gerhard Kapitän has asked us to include the following statement in these acknowledgements:

"I thank David Blackman for his good advice that made the publication of my research on Sri Lankan traditional fishing watercraft possible and mainly for being a friend I can count on.

I am beholden to Gerald Grainge and Somasiri Devendra. I recognize their contribution in improving this book with their own knowledge and observations. Special thanks to Dr Grainge also for his editorial efforts in preparing my work for publication.

I have appreciated in all my many years of research in Sri Lanka the kind people of the National Maritime Museum at Galle for their cooperation; I do believe they will help new generations of fishermen to not forget their traditional fishing watercraft technology and use.

Last but not least, my gratitude goes to the kind coastal people of Sri Lanka, mainly the fishermen and the boat owners, for providing what was always useful information. Only with their support has my task to preserve the knowledge of traditional watercraft of Sri Lanka been possible."

Chapter 1 – Introduction

By Somasiri Devendra

It was seven years ago that Gerhard Kapitän asked me to write a foreword to the first of a two-volume work he was planning on the traditional fishing craft of south-west Sri Lanka. As the years passed, however, it became clear that he would not be able to complete the work himself. In June last year (2007), writing on behalf of her father, his daughter Mari said:

My father thinks that at present he is not able to write the book 'Ethnic Watercraft in Sri Lanka' which Mr. Somasiri Devendra has proposed with much detail. My father thinks that Mr. Devendra

himself should write this book.

We all hope that my father will become better during this summer and then he would be willing to follow up Mr Devendra's with his comments and suggestions and, if necessary with corrections. My father hopes that in this way the proposed publication will be realized.

I preferred to take this to mean that I should put into order the preliminary draft for his first volume (on which I had helped him), rather than write the book myself. This work is, therefore, not what he had originally conceived, but what could be added to his original draft from his published articles, field work notes and correspondence, drawings and his classification of Sri Lankan watercraft. Hence, I feel that some explanation is necessary.

Herr Kapitän began his work on recording ethnic watercraft of Sri Lanka in 1985. He had come to Sri Lanka two years earlier. One of his excursions that year took him to Galle, where he came across a stitched beach seine boat of a type which he concluded had not previously been recorded. This inspired him to return to Sri Lanka and to record this and other unreported Sri Lankan watercraft in photographs and scale drawings.

And so began his decade-long odyssey. From my conversations with him I know that his Sinhala language skills were very limited. Yet he managed to carry on long conversations with fishermen. He had several Sinhalese friends some of whom, at least, would help him when it came to detailed questioning of boatmen and their craft, their names and addresses, names of boats and their parts, etc. I know that he was very finicky about getting spellings and pronunciations right, and that he had a sharp ear for sounds. He was an astute man in the field, even recording when he doubted the veracity of an informant.

Unfortunately, in 1983, the year of Kapitän's first arrival in Sri Lanka, an internal civil conflict flared up; a conflict which continues unabated. It affected Kapitän's plan of work to the extent that, being unable to visit the northern and eastern coasts of the island, he had to confine himself to the western, south-western and southern coasts and rivers (Map 1). This was unfortunate as the fishing craft commonly used in these two areas reflect two different traditions. Hornell had remarked on this phenomenon in 1943:

No greater contrast can be found in small-craft designing than that between the types used on opposite sides of the Gulf of Mannar, south of latitude 9° N. On the Indian or Tamil side the catamaran¹ or boat canoe alone are employed; on the Sinhalese side the outrigger canoe is the national and dominant design, the catamaran being used only in the northern or non-Sinhalese part of the island and by migrant Tamil fisherman in Colombo ... (Hornell, 1943,40).

Kapitän could thus not extend his work to include all traditional watercraft in the island-and was able to record only the 'national and dominant' types. He did, however, record samples of types he chanced upon in the most northerly areas accessible to him, where craft, common in the inaccessible areas farther north, were not unknown.

A map, drawn by the Department of Fisheries of the Government of Ceylon in the 1950s, clearly

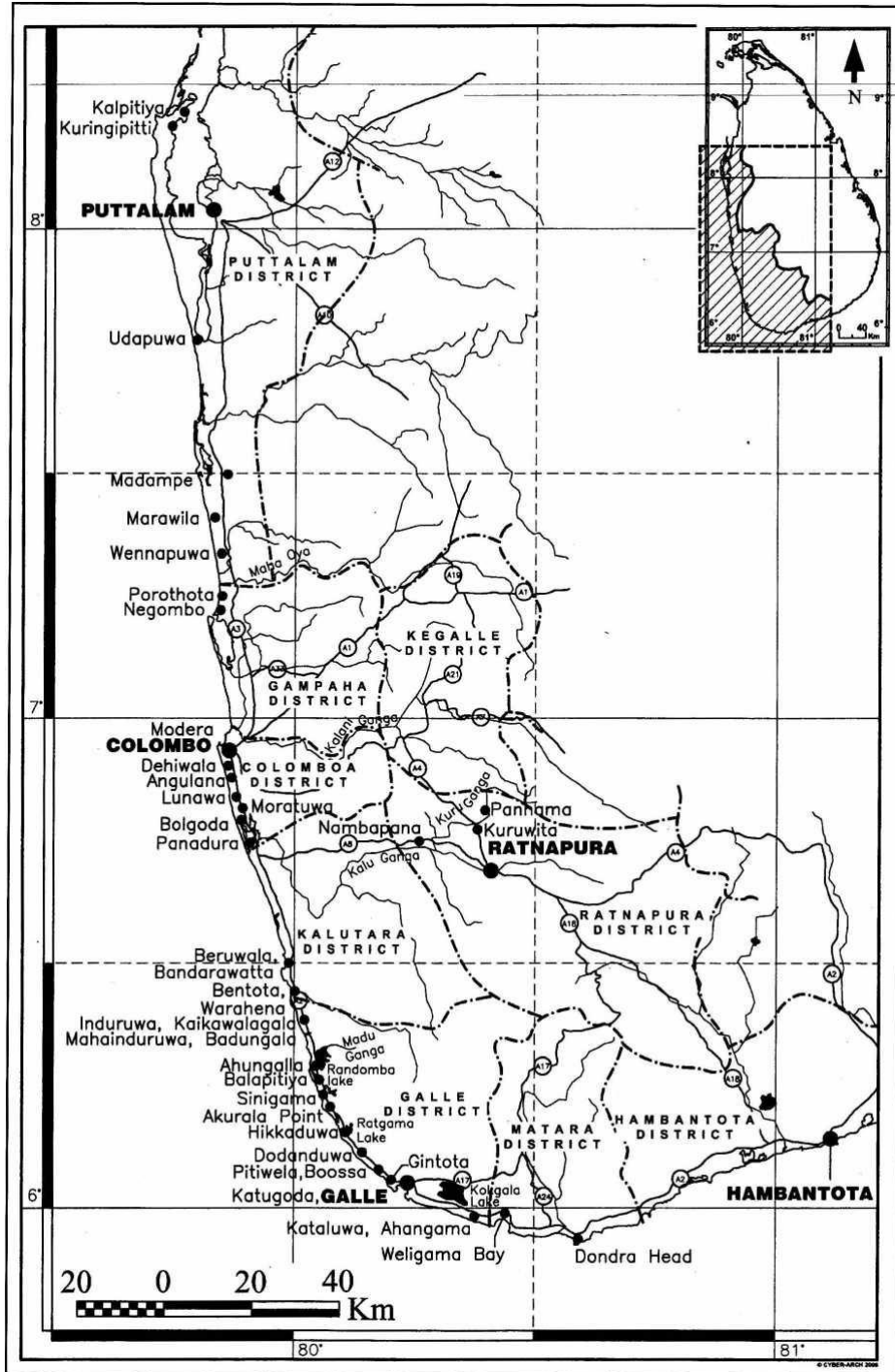
¹ By catamaran Hornell appears to be referring to the rafts known among the Tamils as *kattu-maram* (see Chapter 7 - editor).

illustrates both Homell's point and the limitations imposed on Kapitän's own work (map 2).

I had retired from regular work soon after Kapitän's arrival. In retirement I hoped to pick up the threads of an old obsession: to research the evolution and construction of pre-modern Sri Lankan ships and watercraft. We were working, independently, along parallel lines. While it was my intention to delve into the material, in preference to literary, evidence of the past, Kapitän's was to record the existing, but fast disappearing, traditional fishing craft. His work complemented mine and, naturally, I came to know of his meticulous work even before I met him. I did not know, at that time, that he had been a pioneer maritime archaeologist who had worked with Peter Throckmorton in the 1960s nor that he was an authority on ancient anchors, and iron anchors in particular. I knew him only as an ethnographer and, characteristically, in his commentary to this volume (Chapter 2) he presents himself only as such. During his most prolific phase he remained the simple, unassuming and confiding man that he is. Anyone who showed a deep interest in his work won his trust; so much so that he gave to one such a set of drawings and fieldwork notes to be deposited at the National Archives in the 'Kapitän collection' which was created for this purpose. Access to this collection would be limited to persons approved by him. Unfortunately, when he needed them for this publication, he found that the drawings had not been deposited. I have personally ascertained that successive Directors of the Department of National Archives (see Acknowledgements) had been unable to make contact with any persons responsible at the postal addresses given by Kapitän. However, the collection of his photographs, which he deposited there himself, remains in good condition. To make good the lacuna in the collection, the copies of drawings in my possession will, after the publication of the book, be deposited in the 'Kapitän collection'. Kapitän also deposited a set of drawings, as a backup, in the Library of the Colombo National Museum. These, as he found in the late 1990s, were discoloured due to bad storage.

When I eventually met Kapitän we recognized each other as honest and committed persons. I recognized that his work merited publication before I could even complete mine - which would be deeply enriched by following in his wake - and I decided to help him publish his work. He entrusted me with all his material relating to his drawings (not his original tracings, but full-sized positives printed on a blue-print machine) but, unfortunately, only two or three of his fieldwork notes. I have kept them safe in exactly the way he gave them, as also the correspondence between us spanning nearly ten years. Now that his own original drawings cannot be recovered, these prints survive as the only copies available; they have been used as a primary resource in the present volume. After this work is published, all the material will be deposited in the 'Gerhard Kapitän Collection' in the National Archives Department of Sri Lanka, where the author originally intended them to be.

What Kapitän had in mind was a two-part work. The first volume was to be of photographs complete with captions, maps and place names, descriptions of watercraft, and the classification system evolved by him. This, he expected, would sell well as a coffee-table book.



Map 01 South West Sri Lanka : the area studied by the Kapitän © Cyber-Arch-Architectural diagrams

The second volume, comprising the drawings, was designed for a different market: for model makers and ethnographers. The drawings would be printed loose-leaf, I in full size. They would be folded in a specific pattern of vertical and horizontal folds and packed in a box along with a list and the classification. One could select only the drawing being studied, without unnecessarily handling every one.

There were, also, his fieldwork notes which were intended to be published in journals and other academic publications. Unfortunately - for the reason described above - they are for the most part not available for publication now.

Kapitän would visit Sri Lanka every year till his deteriorating health made it difficult for him. Since the late 1990s, his fieldwork took second place and publishing became his priority. He drew up a full project proposal but he had not yet completed the text. After much discussion he completed the text for the first volume (of photographs) in 2003. Again, there followed a non-productive period, with his health failing. The present publishers saw the value of the book and Kapitän agreed with their suggestion that the totality of his work - that is, the classification, photographs with captions and the drawings themselves - be published in one volume, in the form it is now. I am, personally, very grateful to Dr Gerald Grainge for his hard work, planning and guidance; to Mr. David Blackman who, having known Kapitän in earlier years, was able to meet him in Syracuse, get his agreement to publish this book and to retrieve the photographs; and to Sarah Ward for bringing Kapitän's work to the attention of the Nautical Archaeology Society.

I have said above that Kapitän's work merited publication before mine on the basis of its importance and urgency. While I was seeking material evidence of the building of ships of long ago, he was working to record, by photographs, oral evidence, measurements and scale drawings, a very fast disappearing heritage. In my work I depended on old photographs, engravings, models, drawings, sketches, paintings and the existing fishing craft. These (all but the last) were available for the post- 17th-century period only. Steel hulls and steam marginalized traditional ships at an ever increasing rate. Yet a few large types did survive well into the 20th century. Two, seen by Hornell, disappeared in the 1930s. Two others lasted longer till the early 1980s - I have been fortunate enough to have seen them, to have photographs of them and to have been on one - till the civil conflict put an end to the last type, soon after Kapitän's arrival. By the time he did arrive, the fishing craft were the only survivors.

The method I had chosen was to analyze and compare the structure of surviving craft types with the evidence I had gathered of craft in the post-17th-century period, to see whether they had enough in common to warrant my hypothesis that they had travelled the same evolutionary path. It was therefore essential that the last surviving fishing craft should be recorded in as accurate a manner as possible. They represent an extremely important aspect of Indian Ocean shipping and they have much to teach us, indeed more than the obvious. Although the *oru*, or the outrigger fishing boats that Kapitän studied, are all that remain of the single outrigger sailing vessel, the type had, earlier, included cargo ships that had sailed between Indian Ocean ports. Tom Vosmer has studied one example of this type of outrigger ship and written up his study in the project report of our first maritime archaeology project, complete with photographs and computer generated lines (Vosmer, 1993). It is unfortunate that no one had studied Sri Lankan outrigger logboats as a distinct craft type, or recognized the three major sub-types: fishing craft, inland watercraft and seagoing cargo boats. Earlier, there have been some good studies of individual boat types such as Eric Kentley's study of the *mā-däl-pāru* (Kentley and Gunaratne, 1987, 35-48 and Kentley, 2003, 167-183). There have been references, descriptions and photographs or sketches of a group, or groups, of assorted craft, such as those by J.P. Lewis (Lewis, 1914) of the Ceylon Civil Service and my own work (Devendra, 1990, 265-269; 1993, 17-24; 1994, 119-20; 1995, 211-238; 1998, 93-95; 2002, 128- 173; 2004, 354-378). But there is only one study of the *oru* as a specific class of boat with many variations: that of Professor V. Vitharana (Vitharana, 1992). However, none of these have covered the ground that Kapitän has, with his meticulous graphic records and his hands-on studies along the beaches, which help to place every boat in a spatial and working context. He recognized that each sub-type of *oru* represented a different type of fishing or of use in a specific environment, and his recording gives an insight into how various *oru*-types work together and how they were rowed, poled or sailed. He has, therefore, made it possible to view them as all as the same basic boat, adapted to carry out different, specific tasks. A more detailed explanation of the variety of methods of fishing carried on would have

been useful to comprehend structural variations. It is a pity that the work could not be completed.

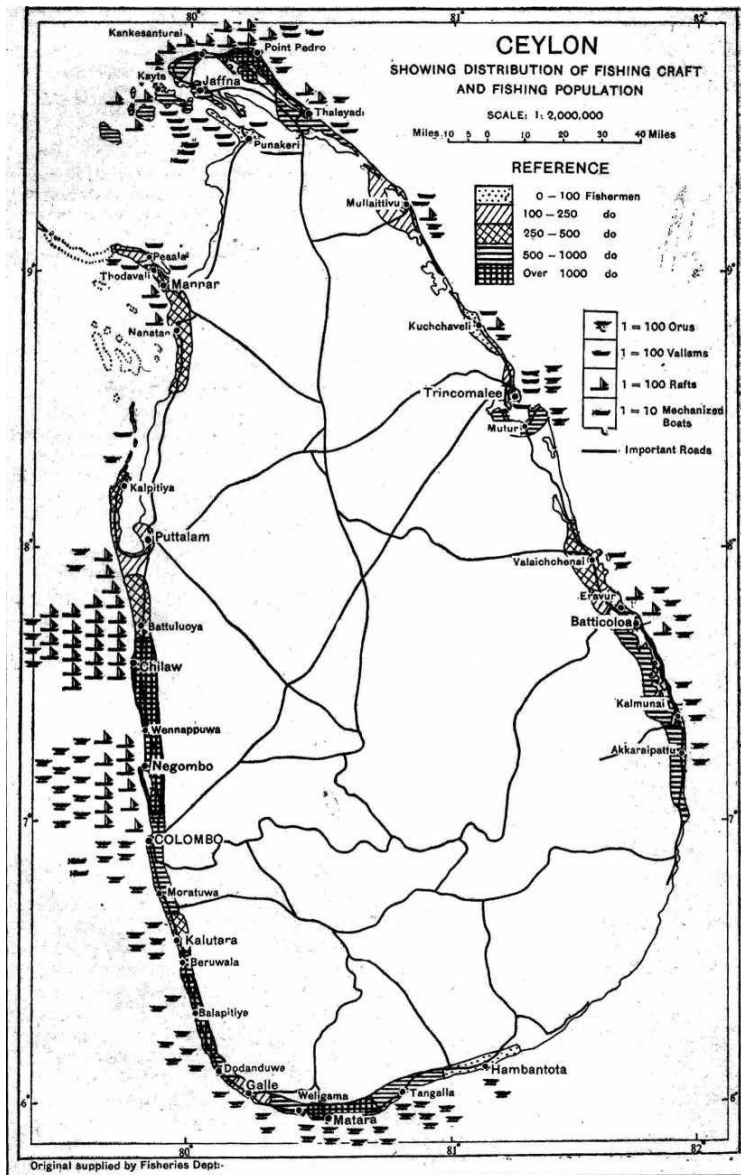
Unlike the case of the *oru* which Kapitän differentiated into sub-types on the basis of the type of fishing involved, in the case of the *mā-däl-pāru* - used for shore seining - the differentiation is on the basis of hull form. It is with his discovery of a variant of this 'standard type' in Galle that his study commenced and he has identified six kinds of *mā-däl-pāru* and two methods of laying the net. Interestingly, but unfortunately, he has not recorded whether the six types bear different local names that would (as in the case of the *oru*) provide clues to why they differ from each other. Instead, he has given them names based on the areas he found them, or their general appearance. This does not, however, lessen the significance of his discovery in any way.

While Kapitän was toiling in the sun from 1983 to the mid 1990s I was often travelling between Colombo and Galle on my maritime archaeological work. This covered the period 1991-2003; I still travel that route, though less often. During this crucial decade and a half, we have seen the changes in craft forms and come to understand why they changed, i.e. the lack of large tree-trunks and the consequent withering away of the logboat maker's craft; the increasing usage of fibreglass clones; the 'marrying' of old and new technologies (fibreglass hulls with wooden booms and outriggers); new materials making it possible to build larger hulls (*oru* logboats being replaced with fibreglass *vallam-oru*); the increasing usage of outboard motors (first attached to the boom and, later, to the stern); the consequent morphological changes, (the former double-ended craft transformed by a transom stern, a sharply upward pointing stem and spoilers along the hull to cope with the increase in speed and power delivered by a motor). On the other hand, in a strange reversal of this trend, the old logboat-and-plank built *mā-däl-pāru* which had long been abandoned as too expensive to build and maintain, staged a comeback, in fibreglass, in the wake of the massive inflow of aid to the fishing community after the disastrous tsunami of 2004.

By the time this book is published there will not be many survivors of the craft Kapitän had recorded, either as models in museums, or as working boats on the beaches or at sea. The value of his work lies in this: his 'capture' of a disappearing phenomenon almost at its end. It also has opened the door to a study of the step-by-step evolution of wooden *oru* into fibreglass *oru*.

The methodology he used in his recording is something I am not able to describe fully. Since we had not yet planned his second volume, we had left detailed discussions of the drawings for another day, one which did not dawn. What I say about it is, therefore, what I have picked up in conversation with him. Any errors would be entirely mine. However, the inclusion of Appendix 1, which gives in the author's own words (from another publication) some methods he used in surveying, offsets, to some extent, any such errors on my part

Since the 19th century, different persons had evolved their own methods of making measured drawings and recording the *oru*. The earliest known to me is Edye (Edye, 1834, 1-14). In 2002, McGrail(2003, 18) remarks that 'a standard to be aimed at when recording a traditional boat is the same as in a boat excavation, i.e. to compile a record from which a competent model builder could build an accurate model from which a detailed account of a boat's routine uses could be written' and describes a most useful system for recording a traditional boat.



Map 2 By permission of the Department of Fisheries and Aquatic Resources of the Government of Sri Lanka, (A Guide to the Fisheries of Ceylon, 1958). The map shows that the outrigger logboats of the Sinhalese (oru) are generally to be found on the west and south-west coast, with outliers on the east coast, while the logboats of the Tamils (vallam), which do not have outriggers, are typically found along the northern coasts. Rafts are also typically used by the Tamils; none are to be found south of Colombo.

I have commented on this system in my review of the book, which I will not repeat here; yet I think it pertinent to quote to one point:

It is by recording measurements in indigenous units of measurement that the ratios between elements become clear. Kentley follows this: he gives measurements in indigenous units - cubits, hand's width, handspan, finger width, thread - which are given in whole numbers, not fractions (Devendra, 2004, 355-57).

Kapitän, working alone some fifteen years before McGrail made this statement, has followed a

system similar to - though not the same - as that of the latter's. He has followed the simpler method of showing the hull in plan and elevation, longitudinal and cross sections, with unusual features singled out and shown in a greater scale. In some cases he has shown the boat under sail. But, unfortunately, he has not codified his system before his deteriorating health made it too late. A comparison of McGrail's system with Kapitän's drawings would be useful to the ethnographer.

To the best of my knowledge, Kapitän relied on his camera, a measuring tape, his ability to draw technical drawings on graph paper (graded in metrical units) as well as his ability to sketch.² I am unable to comment on whether he used centre and transverse datum lines, and plumb lines. His other tools were his discussions with owners and other fishermen on the use of each type of boat, his educated model-maker's and archaeologist's eye for detail, his patience in returning to the same boat again after a period of time and his insistence on absolute accuracy in place names and type names. He would search out boats that differed from what he had encountered earlier. He would seek out the owner and record his name and postal address. He would discuss the variations in form and ask for reasons. He would note what kind of fishing each type was used for. And he would meticulously record the place and date of each drawing. At the end, when he was satisfied that he had accurately recorded a particular boat, using A3 and A4 sized graph paper and, where necessary devoting three or four sheets to a single drawing, so as to achieve the same size as the final full-scale versions (fig. 1), he passed it on to a qualified draftsman who transferred his pencil drawing to drawing paper. Some had to be re-drawn, but he takes the blame upon himself for any other errors he has been unable to correct. I have included all the material he had recorded in the papers he had entrusted to me for the sake of posterity.

Kapitän used to measure and draw on site all the main parts of the boats he studied, both for elevation and section. He did not depend on his photographs for his drawings; only occasionally, after he had done a drawing and had no opportunity to study that craft again, would he use the pictures to check some detail to be sure that he had recorded it accurately. He seems to have made measured studies of the boats only when they were beached, but he has also photographed them sailing. The drawings always show them outside their working environment - sea, lagoon or river - though the names of craft most often denote where they were made to be used. His model builder's eye allowed him to pick up constructional details understand their function not as merely a draftsman, but as one who could appreciate them as a builder: like McGrail, he kept his eye firmly on the 'competent model builder' and, in fact, his original plan for this book was planned for that builder.

Kapitän has told me that he envisaged the builder selecting one drawing, or all the different drawings of the same boat, and taking them into his workshop leaving the others undisturbed. He persisted with a uniform scale of 1:20, (except where he has used a different one for details), with the model maker in mind. The result was a set of drawings, some as large as 50cm x 109cm, leading to problems of publication in standard A4 size. But, since the drawings have an importance to persons other than model-makers their publication in a smaller size is justified.

² Appendix 1 reprints in translation accounts by Kapitän of his survey of two *ma-dal-paru*. See also Chapter 24, page 169.

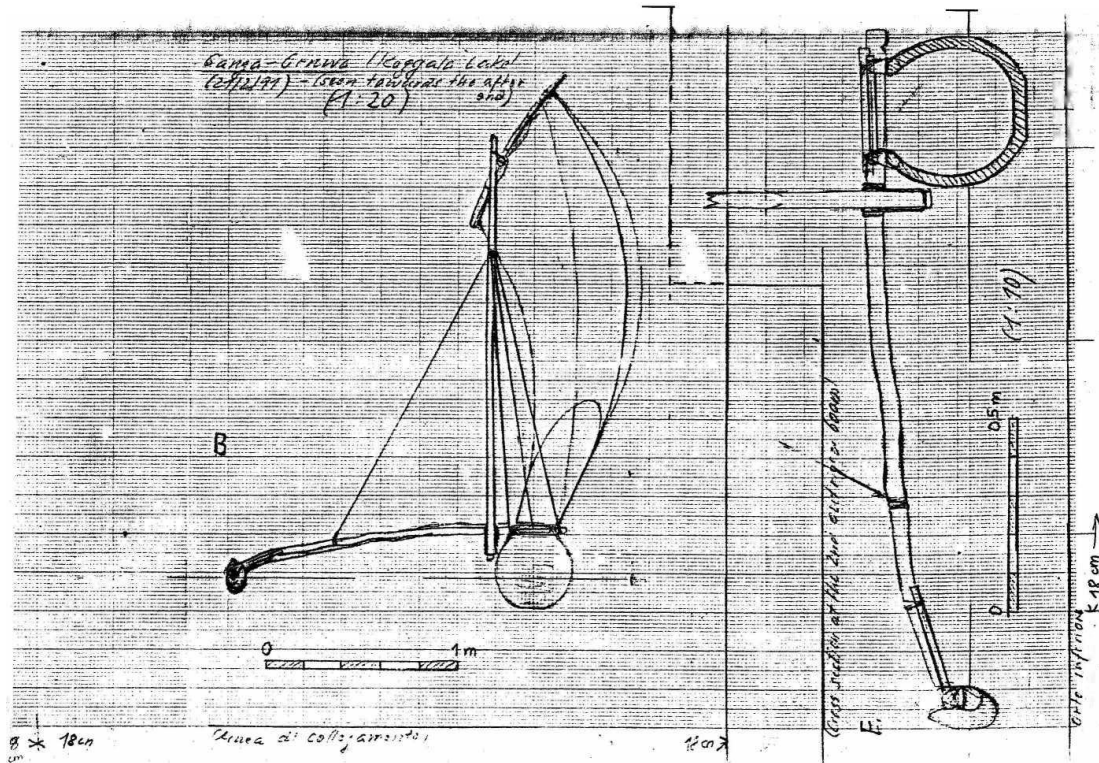


Fig. 1 Kapitän's Original graph paper drawing – at slightly less than the original A4 size – of a sailing gānga-oru (view B and E of drawing 16)

When completing Kapitän's script for submission to NAS, I did not change any of what he had written, other than to make minor changes in grammar, sentence structure and presentation, I made tables of his classification adding two (now three) new columns so that it provides a cross-reference to the photographs and drawings³ I alone am responsible for any errors in these, this revision became necessary as he had classified the photographs and drawings separately and, occasionally, one has a sub-class that the other does not. What I have done is to consolidate the two into one classification Without introducing any changes of significance. It will be noted that while, in his commentary, he speaks of five groups of boats, in the classification itself he condenses hem to three. I have made no attempt to reconcile this, but let Kapitän's work remain unchanged.

I am particularly impressed with his appreciation of the need to record the spelling and pronunciation of craft names. In the course of his work he came to realize the need to be exact and we exchanged several letters on the subject. He decided that diacritical marks were necessary and this system is followed in this book. A note on the subject has been included as Appendix 4 for the reader's convenience. Hopefully, other writers will follow the system when referring to the craft recorded here.

Kapitän, engrossed in his photography and drawing, did not, however, study other related matters, such as changes in the base form depending on the working environment, differences in sewing styles, treatment of sail cloth, direction finding methods, different kinds of wood preferred for specific purposes,

³ Two of these new columns show Kapitän's original numbering of the drawings and that adopted for this publication (see notes 2 and 3 on page 9).

preservatives used, maintenance schedules, navigational knowledge, the boat-builders' culture and other similar matters. If he had, his meticulous accuracy would have resulted in a considerable contribution. It is not impossible that he did collect some information, perhaps included in his field notes which are now lost as he did not get the chance to complete his work as planned. This is conjecture, however.⁴ Fortunately for us, some information on these aspects can be found in Vitharana's work.⁵ While such studies could have added immeasurably to his work, Kapitän had a different focus. As mentioned earlier, he recorded a boat with the needs of a model builder in mind. This is reflected in his original plan to publish the drawings specifically for such model builders. Kapitän makes some remarks on Sri Lankan history and legend (in his description of the archaeological finds), but these must be considered as accurate only as far they as they refer to the details of the artifacts themselves. He records the story related by one boat owner of an 18th-century Dutch woman, Aldosi, who had suggested the building of a craft like the mā-dāl-pāru.. This is a little known legend and deserves to be recorded. When I was studying the paru used on inland waters I, too, was struck by their similarity to some Dutch river barges but, when I consulted a specialist in the Netherlands, Dr Thijs Maarveld, he was quite positive that they were very different craft in spite of some superficial similarities.

Kapitän undertook the task of classifying the boats he studied. Within the limits imposed on him, first, by the civil conflict and next, by his failing health, his achievement is considerable, even in the form it is now presented. Given the fact that the boats are disappearing fast, it is not possible for anyone to re-classify them, though it may become possible for it to be improved upon sometime in the future. This classification and the drawings which are its foundation will remain Kapitän's great contribution to the further study of the Sri Lankan nautical culture, of which Kentley correctly says:

Although the boats of Sri Lanka share with other boat types in the Indian Ocean a common technique in fastening planks, indeed a special method of sewing, this is a single attribute and not sufficient to place Sri Lanka within a broad 'Indian Ocean boatbuilding culture'. In terms of maritime ethnotechnology, Sri Lanka has a quite distinctive culture: sewing may be the only imported trait (although it cannot be ruled out that it developed here first) (Kentley, 2003, 180).

Kapitän has provided, here, a tool for the study of this distinctive culture in greater depth. In spite of his inability to complete his work in the way he wished to, his accomplishment, as embodied in this volume, has been to establish a baseline for future studies. However, it has to be remembered that the classification is limited to fishing craft and that the basis of classification is the type of fishing for which the different craft had been built. It is pleasing that Kapitän makes no use at all of the word 'catamaran' which, while being derived from the type of log raft known as *kattu-maram*, is most commonly misused to describe *oru* outrigger sailing logboats. And this, above all: Kapitän's classification does not include all of Sri Lanka's traditional watercraft that were surviving in 1983.

Having recently been able to access the Mariners' Museum *A Dictionary of the World's Watercraft* (2001), I found that some of the boats Kapitän records are listed or mentioned there. Some are listed at length, while others are only mentioned. The spelling often does not tally with what has been adopted in

⁴ Although the boats of Sri Lanka share with several other boat types of the Indian Ocean a common I understand that Kapitän in his unpublished Sri Lankan diaries carefully collected many other ethnographic data, mainly related to Sri Lanka sailing and fishing activity (editor).

⁵ See Appendix 2

the present work There is similarity enough for identification, but the spelling and pronunciation used here should be considered definitive since they are based on actual usage and meaning. While it is the pronunciation that indicated by basic diacritical marks, the same marks also help to derive the etymology of the word. In Appendix 5 : ‘Nautical terms and names of watercraft in Sinhala an: Tamil languages’, the page numbers from the dictionary are cross-referred against the names of the boat type. The value of the dictionary lies in assemblage of word used over the years to designate the same craft

For me, personally, this task has been a most educate experience. The process of re-arranging the text with D Grainge gave me many an insight and opened many a window in my mind. To work with, and get to know Kapitän both as man and scholar was an experience the humbled me, but which I would not have missed for anything. I am touched at his trust in me to complete his work and give it the recognition it deserves. For this, my thanks.

Somasiri Devendra
Sri Lanka.
2009

KAPITÄN'S CLASSIFICATION

RAFTS, LOGBOATS AND SEWN BOATS IN SRI LANKA

[Presented here in a simplified table combining the Abbreviated and Expanded tables in Chapter 4, less cross-references to photos and drawings in the book]

Type & sub-type No.	CLASS Sub-type/variant
I	RAFTS
1	Bamboo rafts (<i>una-pahura</i>) - used as river ferries or pleasure craft - for sand extraction from rivers
2	Basic log rafts - for collecting corals to be burnt for lime
3	Lashed log rafts (<i>kattu-maram</i>) - consisting of: - three logs - four logs - five logs
4	Pegged log rafts (<i>theppam</i>) consisting of four or five logs
II	LOGBOATS
1	<i>Vallam</i> logboats
1.1	<i>Vallam</i> fishing logboats without outrigger
1.2	<i>Mā-däl-vallam</i> for shore seining
1.3	Sea-going <i>vallam</i> with outrigger (now motorized)
1.4	<i>Vallam</i> -type transport boat or dinghy
1.5	Small <i>vallam</i> dinghy as tender to <i>mā-däl-vallam</i>
2	<i>Oru</i> outrigger logboats on inland waters, lagoons and harbour bays
2.1	Roughly shaped small <i>oru</i> with some <i>vallam</i> influence
2.2	<i>Gaṅga-oru</i> , small logboats (paddled and poled) for fishing on rivers
2.3	<i>Kattu-däl-oru</i> (paddled and poled) for prawn fishing with a net set around poles
2.4	<i>Oru</i> for communication with motorized fishing boats at anchor
2.5	<i>Visi-däl-oru</i> (paddled and sailed) for fishing with a sling-net
2.6	<i>Kalapu-oru</i> (paddled and sailed) for fishing on lagoons
2.7	<i>Varā-oru</i> rowed logboats for fishing in Weligama and other bays

3	<i>Mā-däl-oru</i> - outrigger logboats for shore seining
3.1	- four-oared
3.2	- two-oared
3.3	- three-oared (with outboard platform for the net)
3.4	- five-oared
4	Seagoing <i>oru</i> (outrigger logboats)
4.1	<i>Oru</i> rigged with a double-sprit sail
4.1.1	<i>Issañ-oru</i> with 3 leeboards, for fishing for prawns
4.1.2	<i>Thōra-oru</i> with 2 leeboards, for fishing for seer (kingfish)
4.2	<i>Hädi-oru</i> with 2 leeboards and a short rowing rail between the two outrigger booms, sometimes rigged with two or three double-sprit-sails
4.3	Rowed and sailed <i>oru</i> with two outboard rowing rails ⁴
4.3.1	Two- and three-oared <i>äm-oru</i>
4.3.2	3-oared, rowed and sailed <i>bala-oru</i>
4.3.3	5- and 6-oared, rowed and sailed <i>bala-oru</i>
4.3.4	3-oared, rowed and sailed <i>pokirissā- oru</i>
4.3.5	3-oared <i>äm-oru</i> with mast unstepped when beached
4.4	<i>Oru</i> with one short rowing rail on the outrigger side
4.4.1	<i>Elena-däl-oru</i> , for net-fishing between two logboats
4.4.2	Räowed and sailed <i>pilā-oru</i>
4.4.3	<i>Rää-muhudu-oru</i> for nocturnal fishing with light from an oil lamp
4.5	<i>Oru</i> with one long outrigger-side rowing rail between the ends of the hull
4.5.1	<i>Podi-oru</i> , with one leeboard, sailed by one man
4.5.2	Rowed <i>rää-muhudu-oru</i> for fishing at night
4.5.3	Rowed and sailed <i>rää-muhudu-oru</i> for fishing at night
4.5.4	Small sailing <i>palu-oru</i> for fishing with an oil lamp
4.5.5	Sailing <i>palu-oru</i> with mast unstepped while beached
4.5.6	Sailing one-man <i>palu-oru</i>
4.5.7	Sailing two- and three-man <i>palu-oru</i>
4.5.8	Large, rowed and sailed <i>bala-oru</i> (and anchors for their bait-baskets)
4.5.9	<i>Äm -oru</i> (fishing for bait for the logboats)

5	<i>Añgula</i> – double logboats with platform built over two <i>oru</i>
5.1	<i>Añgula</i> ferries for crossing rivers with passengers
5.2	<i>vāli-añgula</i> for loading sand from river beds
5.3	Substitute for a <i>Vāli- añgula</i> consisting of two rows of three or four oil- drums, in the row welded together
III	MA-DAL-PARU-SEWN-PLANK AND DOUBLE LOGBOAT CRAFT FOR SHORE SEINING
1	Standard-type <i>mā-dāl-pāru</i> (usually with four oars)
2	Large standard-type <i>mā-dāl-pāru</i> with six oars
3	Large standard-type <i>mā-dāl-pāru</i> with outrigger with four oars
4	Slender-type <i>mā-dāl-pāru</i> with outrigger for fishing in pairs
5	3-oared Weligama-type <i>mā-dāl-pāru</i> with two complete hollowed-out logs
6	4-oared Galle-type <i>mā-dāl-pāru</i> with two complete hollowed-out logs and tapering fore-end

[NOTE: Kapitän did not complete his classification but listed all craft that he encountered in two lists: the classification above based on those two lists. It is, therefore, not a definitive Classification but a classification of only the craft that Kapitän came across.]