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**[p.35] “The Arabian Voyage of 1761-67” and Malta:  
Forsskål and his Contribution to the  
Study of local natural History.**

George Zammit Maempel

**Forsskål**

The study of natural history in the eighteenth century was confined mainly to a small number of rich travellers or to a few particularly dedicated naturalists. These generally joined a formal expedition to map, survey, collect and study wildlife or any of the other branches of natural history. The renowned Swedish naturalist Pehr Forsskål, better known by the Latinized form of his name as Petrus Forsskål (1732-63), belonged to the latter category of travelling naturalists. As he provided Malta with the earliest known list of its fossils and described a new species of fossil echinoid, he is considered to have been one of the Pioneers of Maltese Geology.<sup>1</sup> In addition, by providing the first list of the fish found in Maltese waters and a short list of local wild plants, he has also distinguished himself as being one of the founders of the study of other fields of local Natural History.

Forsskål (Plate 1) was a young man of eminently scientific genius and at age 10 (1742), he enrolled himself at the University of Uppsala to study Theology. By the time of his enrolment at this high seat of learning, Forsskål had already carried out a series of investigations on coral reefs. He had discovered that the source of the calcareous material composing coral was the sea water surrounding it, and that the agent responsible for separating the soluble calcium salts from sea water, and for building up from them the calcareous coral structure, was a small polyp. This was allied to the sea-anemone, but distinguished from it by its characteristic habit of growing in colonies and of building calcareous skeletal supports for its soft parts.<sup>2</sup>

**[p.36: See end of article] [p.37]** Petrus Forsskål, a renowned naturalist as well as an active “freedom fighter,” was born in Helsingfors, Sweden (now Helsinki, capital of Finland, but at the time under Swedish rule) on 11 January 1732 and died of the plague at Jerim, Arabia, on 11 June 1763. He was the son of a clergyman and had two brothers and seven sisters. As his father could not financially maintain three sons at the University, Pehr was withdrawn from that Institution and continued his study of Latin, Greek, Philosophy and Theology under his father’s guidance. His “particularly fine learning,” however, earned him a five year scholarship at the University of Uppsala and two more years at any foreign University of his choice. Forsskål opted for the University of Göttingen, Germany, where he commenced reading Theology, Philology and Oriental Philosophy on 13 October 1753, under that most distinguished, then 36 year old, German theologian and orientalist, Professor Johann David Michaelis. He studied Botany and Natural History under Linnaeus, whom he is said to have absolutely “adored.”

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<sup>1</sup> George Zammit Maempel, *Pioneers of Maltese Geology*. 302 pp., 90 pls (7 col.) (Privately printed at PEG Marsa, Malta, 1989).

<sup>2</sup> Karl Alfred von Zittel, *History of Geology and Palaeontology to the end of the Nineteenth century*. Reprint of 1902 edition by J. Cramer, Weinheim, Wheldon & Wesley Ltd., Herts., and Hafner Publishing Co, New York, 1962; translated from the original German by Maria Ogilvie-Gordon, 562pp. (p. 245).

Forsskål soon abandoned his idea of entering the Church. In 1756 he graduated with a dissertation, “*Dubia de principiis philosophiae recentioris*” (Plate 2), wherein he criticised Wolffianism – the most popular philosophical doctrine of his time. That same year he had the unique distinction of being elected, at the very young age of 24, a “Corresponding Member” of the German Academy of Science. Petrus Forsskål was, by now, a very distinguished personality. This notwithstanding, however, the University of Göttingen refused to publish his second controversial dissertation “Thoughts on Civil Liberty” (written partly in Latin and partly in Swedish). In it Forsskål maintained that the individual should enjoy unlimited freedom of expression and the Government only a limited power to censor him – and not the other way round, as was happening in Sweden at the time. For expressing these ideas he was severely reprimanded by the authorities. Instead of abandoning his convictions, however, Forsskål obstinately stuck to his principles and on 23 November 1759, he had his Civil Rights book, *Tanker om borgerliga friheten* (Thoughts on Civil Liberty), published at his own expense by Salvius of Uppsala.<sup>3</sup> The [p.38: see end of article] [p.39: for plate 3 see end of article] [p.39] entire print-run of 500 copies was distributed among his students that same afternoon. As the State Administrative Authorities and Censors of Sweden considered the ideas of freedom divulged in Forsskål’s book heretical and intolerable, they not only forced him to leave the country but also made an [p.40] unsuccessful attempt to round up the distributed copies. The 79 books which they managed to retrieve were duly burnt.

In his fight for individual freedom of expression and of the Press, the headstrong and confident Forsskål had lost a battle, but not the war, for in less than twelve months (1760), the Swedish Parliament set up a Committee to consider the question of censorship and, six years later, abolished it completely. By then, however, Forsskål had been dead three years and did not see the fruition of his revolutionary ideas, for which he had paid so dearly.

#### “The Arabian voyage 1761-67”

Shortly after being exiled, Forsskål received help from various influential persons including his compatriot and eminent naturalist, Linnaeus, who recommended his favourite former scholar to King Frederick V of Denmark. Linnaeus was later very influential in obtaining for him an early nomination as Professor at the Copenhagen University. In 1760, the eminent theologian and orientalist, Professor Johann David Michaelis – Forsskål’s former lecturer at the University of Göttingen, and mastermind of the Danish Government’s Expedition for the scientific exploration of Egypt, Arabia and Syria – recommended him to J.H.E. Bernstorff, the Danish Foreign Minister.<sup>4</sup> On the basis of these recommendations, Forsskål was invited to

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<sup>3</sup> *Encyclopaedia Britannica* Vol. 9, (Chicago, London, Toronto, 1947), pp. 520 “Forsskål, Peter.” A Swedish translation of his original French edition (1759) was published in Stockholm in 1792: *Tanker om borgerliga friheten*; in 1970, T. Steinby published *Peter Forsskål och Tanker om Friheten*. (Peter Forsskål’s Thoughts on Civil liberty). Helsingfors: Hufvudstadsbladet. This book is said to give a good account of Forsskil’s life, with portraits).

<sup>4</sup> A.G. Moltke, The Lord High Steward, was also behind the practical organisation of the Expedition.

Anon, in: *Encyclopaedia Britannica*, vol. 9, p. 520 (Forsskål, Peter); vol. 16, p. 430 (Niebuhr, Karsten); Pers. comm. Pfr. Gosch Möller, 19/2/92; Augusto Beguinot: Treves-Treccani-Tuniminelli (Eds.) *Encyclopedia Italiana di Scienze, Lettere e Arti*, 11<sup>a</sup> Edizione: Istituto G. Treccani, (1932: 725 (“Forsskål, Petrus”); Joh. Gottlieb Buhle, *Johann David Michaelis: Literarischer Briefwechsel*, (Correspondence), pt. 2. (Leipzig, 1795) Carsten Niebuhr, *Recueil de Questiones proposees a Une Societé de Savants, qui par Ordre de sa Majesté Danoise font*

join the first scientific expedition to the orient as a naturalist. A notice to this effect appeared in the *Svenska Mercurius (The Swedish Mercury)*, informing the general public that:

“Herr Magister Petr. Forsskål has been invited by His Majesty the King of Denmark to accompany, as Natural Historian, a scholarly [p.41] expedition set up with the financial support of His Majesty to journey to the East Indies (?) and the Levant, whereby in addition to the many advantages he will enjoy, he is to have the title and honours of a Professor. This is irrefutable evidence of Herr Professor’s merit. He combines a profound knowledge of natural history with philology and Oriental languages, so that scholarship will gain doubly from his expedition.”<sup>5</sup>

Forsskål was well aware of his academic capabilities and accepted the offer on his own terms, requesting not only a high salary (commencing from 1759, the year of his acceptance) and a pension for life after his return, but also the right to enjoy that pension in any country of his own choice. He did not want to spend the rest of his life in a country (like Sweden and Denmark) where freedom of expression was restricted. In addition, he requested also that all members of the Expedition be of equal rank. This latter condition was imposed, not so much to protect democratic principles as to safeguard his personal liberty during the Expedition. The members composing this ill-fated first scientific mission to explore Egypt, Arabia and Syria, officially known as “*The Arabian Voyage 1761-67*” were: the cunning, but indolent, Danish Professor Friedrich Christopher von HAVEN (1727-63) – the original chosen leader of the Expedition – as philologist and ethnologist; the German-born mathematician surveyor and astronomer Carsten NIEBUHR (1733-1815), as actual leader (Plate 3) the German Georg Wilhelm BAURENFEIND (1728-63) as artist and engraver, the newly-graduated Danish physician Christian Carl KRAMER (1732-64) as surgeon, the Swedish hussar BERGGREN as handyman and servant and the Swedish Petrus FORSSKÅL (1732-63) as naturalist (“Physicus & Botanicus”).<sup>6</sup> Not only were they an ill-assorted band (2 Danes, 2 Germans, 2 Swedes), but they jealously disliked and distrusted each other.

[p.42] They boarded the Royal Danish Navy “Orlog-Skip” *Grönland*, in preparation for departure, on 4 January 1761, but their ship weighed anchor and set sail for the Mediterranean a week later, on 10 January.<sup>7</sup> The general public came to know of their

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*le Voyage de l’Arabie, par Monsieur MICHAELIS. Traduit de l’Allemand.* 4 vols. (1774-80). 4to. pp.xlii, 372, (xii), xiv, 409; xvi, 389; xivi, 256, (xvi), 38. pls. and maps.

<sup>5</sup> See also Thorkild Hansen, *Det lykkelige Arabian, En dansk expedition 1761-1767*. (Gyldendalske Boghandel, Copenhagen, 1962), 381 pp. English translation by James and Kathleen Mc Farlane, *Arabia Felix. The Danish Expedition of 1761-1767*. Wm. Collins, (St James Place, London, 1964) 381 pp. (p. 29).

<sup>6</sup> Hertha Kirketerp-Möller (1970:153) “Fra Kobenhaven til Konstantinopel 1761. På grundlag af F.C. von Haven digbog” *Fund og Forskning* (Royal Library, Copenhagen XVII (1970), pp. 79-94 (with a facsimile). English summary: *From Copenhagen to Constantinople 1761. On the basis of F.C. von Haven’s Diary*, 153-154.

<sup>7</sup> There are no known illustrations of the *Grönland*, but the still existing shipwrights’ plans showing the decorations of bow and stern are reproduced by Thorkild Hansen (1962, 1964: 60).

The log of the *Grönland* is at the Marines Bibliotek, Copenhagen. It is written in old Danish. The Malta call is recorded in entries 15-23 June 1761 and that on the return journey in entries 8-14 January 1762. I am grateful to Mr Sven Sørensen for providing photocopy and translation of these log entries.

departure two days later when the front page of the *Kiøbenhavnſke Danske Poſttindende* (*Copenhagen Poſt*) of 12 January 1761 published the following information.

His Majesty ſtrives ceafeleſſly for the advancement of ſcientific knowledge and for the promotion of the welfare of his people. Deſpite the many commitments of the Government during the preſent hard times, a few days ago, (His Majesty) deſpatched (to the Orient) a group of ſcholars on board the *Grønland*. They will travel by way of the Mediterranean to Conſtantinople, and thence through Egypt to Arabia Felix, ſubſequentlly returning to Europe via Syria. On all occaſions they will ſeek to make new diſcoveries and obſervations in the intereſt of ſcholarſhip and to collect and deſpatch (to Denmark) valuable Oriental manuſcripts, as well as other ſpecimens and rarities of the Eaſt.

After liſting the names and occupation of the participants, the document adds that:

These men will remain in the Orient for ſeveral years, and as they have already ſpent ſeveral years careful preparing themſelves for this undertaking, it can be confidently expected that their induſtry and abilities will, with God’s help, achieve beneficial reſults contributing both to the advancement of knowledge in general and to the more accurate interpretation of the Holy Scripture in particular.

The official notice of the departure of the expedition reveals that, beſides the ſcientific goal, there was alſo a religious implication. The enterpriſe was undertaken not ſolely to ſtudy the culture of the Arabs by recording [p.43] their cuſtoms, habits and architecture and to collect and deſpatch (to Denmark) valuable oriental manuſcripts and other ſpecimens and rarities of the Eaſt, but alſo, and mainlly, to explore the geography, fauna and flora of Arabia. It was thought that this latter ſtudy would promote a more accurate interpretation of the Scripture by clarifying ſome ſections in the Bible relating to this country.

The “*Arabian Voyage*” was beſet with miſfortunes from the very ſtart for, on account of unuſually heavy ſtorms, the ſhip could not negotiate the dangerous Kattegat-Skagerak ſtraits and after many manoeuvres, it had to return to Helsingør (Elsinore). As the ſtorms laſted ſeveral weeks, the entry into the North Sea and the real beginning of the Expedition was delayed until 10 March 1761. The *Grønland* paſſed by the Shetland Iſlands and Iceland then ſteered ſouthwards towards Gibraltar, entering the Mediterranean and anchoring near Marseilles (13 May). Meanwhile, on account of the various difficulties and problems prior to their departure, the expedition members with the exception of Niebuhr, requested (and obtained) the Danish Government’s permission to go to Conſtantinople *by land*. It is known from von Haven’s diary that he left the *Grønland* on 17 February 1761 and travelled overland to Marseilles. Nothing is known about the journey of the other members of the expedition except that they were reunited at Marseilles and viſited near-by “Eſtac” on 28 May. Their next ſtop was Malta (June 14-20), followed by ſtops at ſome of the Greek Iſlands and more on the mainland (25 June). From Smyrna, the *Grønland* is ſaid to have taken the expedition team to the Iſland of “Bozcaada” reaching Conſtantinople on 30 July.<sup>8</sup>

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<sup>8</sup> Pers. comm. Pfr. Goſch Möller.

The *Grönland*, accompanied by three other vessels, sailed into Malta's Grand Harbour on 14 June 1761.<sup>9</sup> Records in the Library of the Royal Danish Navy, reveal that the three accompanying ships were not supply vessels for the Expedition, but the Danish merchant ships *Den Flyvende Engel* (The Flying Angel), *De Providentia* and *Helena et Catharina* that were being escorted by their country's warship from Marseilles to Smyrna. The artist Baurenfeind prepared a sketch (later engraved by I.F. Clemens and reproduced by T. Hansen (1964:69), showing the entrance of the *Grönland* [p.44] into Marseilles harbour with the three small Danish ships waiting at anchor in port ready to be escorted to their destination.<sup>10</sup> In the foreground of this sketch, the artist pictured himself and a well-dressed gentleman (Forsskål) bending to examine a plant growing on a rock overlooking the harbour.

[Plate 4: see end of article]

### Forsskål's album and diary

As was customary in the eighteenth century, Forsskål kept a book – generally called “Album” – in which he recorded the names and happenings of the prominent men he came in touch with. He started keeping these records in 1756, when he was in Göttingen, near Hanover, Germany (Plate 4). At the Manuscript Department of the Det Kongelige Bibliotek in [p.45] Copenhagen there are two albums of Peter Forsskål. Unfortunately, however, neither contains entries from his visit to Malta in 1761.<sup>11</sup> Throughout the journey to Arabia, Forsskål kept also a log-book, written in Swedish. For almost 200 years, this diary was thought lost, then it reappeared in a chancellery copy in the University Library in Kiel, Germany.<sup>12</sup> The newly-found manuscript, however, is not in Forsskål's hand and therefore could not have been his field diary. It is probably “an edited summary report of the expedition until Forsskål's death.”<sup>13</sup> In 1950, the “diary” was published in its original Swedish language as *Resa Till Lycklige Arabien. Petrus Forsskåls Dagbok 1761-1767*, by A.Hj. UGGLA, with annotations by the Swedish Linnean Society (Plate 5). The book contains a copy of the fine portrait painting of Petrus Forsskål, commissioned by himself just before his departure, and now kept at Salnecke Castle, Uppland in Sweden (Pl. 1). The Swedish naturalist's stay in Malta and his observations on Maltese life are described on pp. 19-27 of this edition.<sup>14</sup>

### Arrival and stay in Malta

From this diary it is evident that the Expedition's journey to Malta was not uneventful, for on more than one occasion Captain Lorens Henrich Fisker of the *Grönland* had to prepare for

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<sup>9</sup> See C. Niebuhr, *Reisebeschreibung*, vol. 1 (1775). Niebuhr records the date on p. 13 and the nationality of the ships on p. 15.

<sup>10</sup> For a short account of the Expedition's artist, see Leo Swane, *I.F. Clemens* (Copenhagen, 1929).

<sup>11</sup> Pers. comm. Palle Ringsted, Manuscript Department, Royal Library, Copenhagen, 31.8.92.

<sup>12</sup> Pers. comm. Stig T. Rasmussen, Royal Library, Copenhagen 13 Dec. 1991.

<sup>13</sup> I. Yaron, T. Schiotte, G. Wium-Andersen G, 1986. “A review of molluscan taxa described by P. Forsskål and C. Niebuhr with citation of original descriptions, discussion of type-material available and selection of some lectotypes.” *Steenstrupia* 12(10)(1986) 157-200 (p. 162) Zoological Museum, University of Copenhagen, 31 Dec. 1986.

<sup>14</sup> *Resa Till Lycklige Arabien. Petrus Forsskåls Dagbok 1761-1763*. Med anmärkingar utgiven av Svenska Linné-Sällskapet (=Journey to Arabia Felix. Petrus Forsskål's Diary 1761-63. With annotations by the Swedish Linnean Society). (Almqvist & Wiksells Uppsala, 1950:19. See also: T. Hansen (1962 and 1964:75-76). (Malta University Library: (1964), DS. 206/ Melitensia H233d. PB. 4 b.).

battle against threatening foreign ships. The last threat came from a British warship that on 6 June 1761 was refused permission to inspect the merchant vessels in the Danish convoy. During this latter episode, when sailors were scurrying on deck preparing for action, the young astronomer Carsten Niebuhr was busily engaged in [p.46] setting up his astrolabe and telescope on the foredeck to follow the transit of the planet Venus across the sun's disk. He fearlessly and nonchalantly carried on with his scientific investigations, complaining, however, that, in spite of the calm weather, his ship was shaking and that this prevented him from obtaining readings of the desired accuracy.

The arrival of the Danish convoy in Valletta Harbour occurred on 14 June 1761, during the time when the Island was under the rule of the Order of St John of Jerusalem and had the Portuguese Fra Emmanuel Pinto de Fonçeca as Grand Master (1741-73). The official welcome given to the Danish ships upon arrival and Forsskål's first impressions of Malta upon entering Grand Harbour are thus described in his diary:

We fired a salute of thirteen guns, and this was acknowledged by four guns from the galleys and eleven from the town. The siting of the houses, like an amphitheatre, not only made the view of the town from the harbour very attractive but also explained why the cannon shots sounded so unusually loud.<sup>15</sup>

It may be of some interest to record here that, during this memorable journey, Commander L.H. Fisker brought with him to the Mediterranean his small son Henrick Lorens (b. 1753). On the way to Malta, the boy was taken ill on board the *Grönland* and after the ship dropped anchor, the young boy was put ashore and left in the care of some sisters, presumably those of St Ursula, as this Order was then already in existence. The boy (who apparently was picked up by the *Grönland* on its return journey in December 1761) recovered completely and, thirty five years later (1796), Fisker Junior had the good fortune of revisiting Malta – in command of another Danish man-of-war, the *Thetis*.<sup>16</sup> It is narrated in the biography of his father (who ended up as an Admiral) that, when the Sister who had nursed him (and now the Abbess) learned of his return, she had some [p.47: see end of article] [p.48] sweets delivered to him in a silver plate, everyday he was in port.<sup>17</sup> Forsskål and his companion Niebuhr went ashore soon after arrival but as in Malta records of arrivals and departures started being regularly kept only after 1814, Malta's National Archives at Rabat holds no records of the arrival or departure of any of the passengers and crew of the *Grönland* or of the accompanying three vessels.<sup>18</sup> The two scientists lost no time in carrying out their scientific research on the Island and whilst the Swede was busily engaged in investigating the recent and fossil fauna of Malta,

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<sup>15</sup> Forsskål, *Resa Till...*, 19; T. Hansen/Mc Farlane, 75.

<sup>16</sup> The frigate *Thetis* is the ship that brought (Dec. 1796) from Copenhagen to Malta, the young sculptor Bertel Thorvaldsen (1770-1844) who later befriended Hans Christian Andersen. (See S. Sorensen and I. Schirò, *Poet's Bazaar. Hans Christian Andersen and his visit to Malta in 1841. Introductory essay by Erik DAL, President of the Royal Danish Academy of Sciences and Letters. Exhibition Catalogue compiled by Sven Sorensen and edited by J Schirò* (Malta International Book Fair, Malta 1991) 66 pp., illus. (p. 10-11; Cat. No. 45).

<sup>17</sup> C. L. With, (1891). *Lorens Henrick Fisker. Lav og Levnet et historesk teldels utrykte Kilder af C.L With.* (Lorens Henrick FISKER. His life – a historic contribution partly from unpublished sources, by C. L. With. With a portrait) (Kjobenhavn, Schubothes Boghandel, 1891) 3-4.

<sup>18</sup> Pers. Comm. Archivist, J. Caruana, Dec. 1991.

Niebuhr was absorbed in his mathematical calculations of the Island's longitude and latitude.<sup>19</sup> It was due to these accurate measurements of Niebuhr in 1761, that Malta's position on the map was subsequently altered.

In spite of their heavy scientific commitments, Forsskål and Niebuhr found enough spare time to roam about the Island and visit its many interesting sites. They had a look at monuments, houses, catacombs, churches and the public gardens of "St Antoine" (Sant Anton) at Attard and the orange groves at "Boschetto", Rabat. In the countryside, their attention was drawn, to the warning sign "NON GODE L'IMMUNITÀ ECCLESIASTICA" etched on an oblong marble slab on the front wall of wayside chapels to inform criminals that that particular chapel did not provide them protection against the Law.<sup>20</sup>

Forsskål seems to have been greatly impressed by the coastal salt pans at Salina, which he calls "salt extraction installations on the coast" (*Resa Till*, 1950:23), and was particularly intrigued by the fact that on hot summer days, the Maltese brought snow from Sicilian mountain tops and used it for cooling their drinking water (p. 22). His diary includes also an account of the display of Catholic pomp, which he had witnessed for the [p.49] first time here in Malta. He also records visiting the church of St Paul at Città Vecchia (the Cathedral at the old capital, Mdina) and the parish church of St Helen at "Bulcalcar" (Birkirkara). It is surprising that neither Forsskål nor Niebuhr had any comments to make on the Mdina Cathedral and on the Birkirkara Church, which Forsskål curiously records was "not yet complete." The latter sanctuary, designed by the 27 year old Maltese architect Domenico Cachia in 1727 (and according to other records completed by 1745) is considered to be the finest parish church on the Island.<sup>21</sup>

When writing about his visit to St John's Co-Cathedral in Valletta, however, sceptic Forsskål is much more informative and records having been shown some reliquaries including one said to contain "a thorn from the crown of Christ." To his experienced eye of a botanist, the object enclosed within the reliquary in no way resembled *Rhamnus spinos* (Passion thorn) and, not realizing that most of the medieval reliquaries are symbolic, he went into some trouble to declare this one a fake.<sup>22</sup> At Rabat, Niebuhr and Forsskål visited St Paul's Church and the

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<sup>19</sup> In this connection, in his *Reisebeschreibung* (1775:20), Niebuhr refers to an interesting publication that is not known to have ever been quoted in Melitensia lists: R.P. Feuille, "Astronomische Beobachtungen über die Länge and Breite der Insel Malta", *Journal des observations physiques, mathematiques & botaniques*.

<sup>20</sup> Niebuhr, *Reisebeschreibung*, 19.

<sup>21</sup> J. Quentin Hughes, *The building of Malta 1530-1795* (Alec Tiranti Ltd., London 1956. 242 pp., 332 pls., 92 figs. (p. 103).

<sup>22</sup> In his book *Delle Reliquie dei Santi nella Chiesa Concattedrale di San giovanni Battista dell'Isola di Malta* (30+4 pp, Napoli, 1926, pp. 19-20), Mgr Isidoro Can. FORMOSA refers to this reliquary as having once been in the Co-Cathedral's collection, and records that it originally belonged to the Patriarcal Basilica of Constantinople, where it was reputed to have flowered when displayed during the Good Friday celebrations. It was declared authentic and miraculous by the General Chapter of the Order in 1446, and became a sacred reliquary by decree of Pope Eugene IV on 21 January 1632. After the fall of the Empire, Bajazette donated it to the Grandmaster in Rhodes. Formosa records that the original ostensory is now missing and only a tube containing a small fragment survives. I am grateful to Rev. Can. John Azzopardi, Curator of the Cathedral Museum, Mdina, Malta for drawing my attention to this reference.

underlying Grotto and record that it was here that they first came to know about the reputed anti-poison and medicinal properties of the Cave-rock and of its stamped or sealed form known as *terra sigillata melitensis* (1950:26).

The expedition stayed in Malta from 14 to 20 June 1761 but during that short period of time, its members carried out a considerable amount of scientific work. It is interesting to note that the first scientific observation made by Forsskål upon arrival, and recorded in his diary, is the abundant presence of the jellyfish “*Medusa verrucosa*”, which he does not describe or [p.50] illustrate.<sup>23</sup> Its local vernacular generic name is given as “Bråmâ, written with balls as if it were a Swedish word (1950:19).

In his diary, Forsskål mentions also coming across a few interesting local plants – *Adiantum cap(illus) – ven(eris)*, *Salicornia europ.*, *Salsola soda*, *Cichorium spinosum* and *Hedera helix* but makes no reference to the fossil molluscs and echinoids listed in his *Descriptiones animalium*.

### **Maltese rocks and fossils**

Forsskål’s diary and Niebuhr’s accounts both give long descriptions of the rocky island and Giovanni Gulia<sup>24</sup> records (without giving any evidence or references to support his statement) that the Danish Expedition carried out various “geological, botanical and zoological” studies. In view of the above statements, it was considered possible that the Swedish naturalist might have investigated the Island’s rock formations and other geological features but no evidence of any such undertaking was found. He does, however, identify the calcareous nature of Maltese rocks when he states that local fossils are embedded *In lapide calcareo, ex quo tota consta insula* – in limestone of which the entire island is composed. (*Descriptio animalium....*, 1775:139). He also comments on the softness and suitability of Maltese stone for building purposes, adding that it contains abundant shells embedded in it (*Flora*, 1775, “Observatio”).

In the list of Maltese fossils, which he calls TESTACEA FOSSILIA – MELITENSIA (Plate 6),<sup>25</sup> Forsskål ignores completely the vertebrate remains embedded in Maltese rocks and lists solely 11 molluscs (items 34-44) [p.51: see end of article] [p.52] and three echinoids or sea urchins (items 45-47) without illustrating any. Items 34-42 are Linnaean names;<sup>26</sup> *Ostrea pecten* is a “nomen nudum” of no scientific significance, whilst the identity of *Ostrea*

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<sup>23</sup> As Forsskål does not give a description or an illustration of the species *Medusa verrucosa*, and as it is not recorded in the tenth edition of C. Linnaeus, *Systema Naturae per Regna Tria Naturae*, Tom. 1, Editio Decima (Holmiae, 1758) 658-660, the name is probably a *nomen nudum*.

<sup>24</sup> Giovanni Gulia, “Uno sguardo alla Zoologia delle Isole Maltese,” *IX Congr. Int. Zoologie*, Monaco (1913) 545-555. (p. 545 fn. 1).

<sup>25</sup> *Descriptio animalium....*, 1775, Section V, pp. 139-140, Nos. 34-47. Notwithstanding that as early as 1670, the Sicilian painter Agostino Scilla (*La vana speculazione disingannata dal senso. Lettera responsive circa i corpi che petrificati si trovano in varie luoghi terrestri*. Napoli per Andrea Colichia, 8vo, 168 pp., 28 pls.) described and figured a number of Maltese fossils, Forsskål’s above-mentioned contribution is thought to be the earliest “scientific LIST” of the invertebrate fossils of the Maltese Islands.

<sup>26</sup> Linnaeus, (1758): 681, 684, 693, 694, 695, 706, 705, 703, 699 respectively.

*obscura?* is doubtful. Items No 45 and 46 represent Linnaean names of echinoids.<sup>27</sup> The long description following item No. 47 *Echinus pentagonus; oblongo-pentagonus; ambulacris quinis, bipartitis, superficiei ocellata* .... suggests that he was erecting a species new to science. Unfortunately, however, this new species was not given a Latin binomial, but only a descriptive polynomial name, as was customary in pre-Linnaean times. In addition, his description is much too vague and no illustration is provided. The additional descriptive detail *Superficies supra & subtus ocellata*, however, fits only two Maltese echinoids: the small *Lovenia anteroalta* (sub *Sarsella*, Gregory 1891) and the much larger, rarer and more abundantly ocellated (and consequently more conspicuous) *Lovenia duncani* (sub *Sarsella*, Gregory 1891). (Plate 7).<sup>28</sup>

To ascertain the correct identity of Forsskål's new species of fossil echinoid, a (fruitless) search was made for the presence of any Maltese fossil echinoids amongst the *Arabian Voyage 1761-67* collections at the Copenhagen Museum, and for any reference to them in publications relating to this scientific enterprise. Four of the *Arabian Voyage* collections have been studied in recent years: the corals by Crossland [p.53] (1941),<sup>29</sup> the fishes by Klausewitz and Nielsen (1965),<sup>30</sup> the mollusca by Yaron, Schiotte & Wium-Andersen (1986)<sup>31</sup> and the geological / mineralogical collection by Arne Noe-Nygaard (1990).<sup>32</sup> In only one of these publications is there a mention of Maltese fossils (Yaron *et al.*, 1986:193), and then merely to record the fossil list given by Forsskål, with the important addition, however, of a note stating that at the Copenhagen Museum "no material exists of any of these species."

In the account of his visit to Malta (*Reisebeschreibung* 1775:15-20), Niebuhr too, refers to the presence of numerous fossil bivalves and gastropods (snails) embedded in local rocks but makes no attempt to identify any of them specifically. Yet he seems to have been well aware of the folklore attached to the teeth of sharks and of fish embedded in Maltese rocks, and comments on the customs and beliefs of the highly devout Maltese relating to these fossils.<sup>33</sup>

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<sup>27</sup> Forsskål's "*Echinus lacunosus*" is "*Schizaster lacunosus*" which refers to the local *Schizaster parkinsoni*, whilst "*Echinus rosaceus*" is "*Clypeaster rosaceus*", a reference to the local *Clypeaster marginatus* or possibly *C. altus*.

<sup>28</sup> Through the years, the local species *Lovenia duncani* has been variously identified. In 1855, Thomas Wright, ("On fossil echinoderms from the Island of Malta...." *Ann. Mag. Nat. Hist.* (2)15(1855):176) wrongly identified the species as "*Spatangus hoffmanni* Goldfuss", an identification which he himself corrected to "*Spatangus ocellatus* DeFrance" ("On the fossil echinidae of Malta ....", *Q. J. Geol. Soc.*, Lond., 20: 487-488, pl. XXI fig. la. lb) in 1864. In 1891, J.W. Gregory (The Maltese fossil echinoidea and their evidence on the correlation of Maltese rocks. *Trans. Roy. Soc. Edinburgh*, 36(1891):625-626) described it as a new species and called it *Sarsella duncani*. The species was later correctly identified by J. Cottreau (1913). ("Les Echinides Neogenes du Bassin Mediterranéen", *Annals de l'Institut Oceanographique*, Paris, 6(3)(1913):77-78) as *Lovenia duncani*.

<sup>29</sup> C. Crossland, "On Forsskål's collection of corals in the Zoological Museum of Copenhagen", *Spolia zool. Mus. Haun.* 1(1941) 1-63, pls. 1-XII.

<sup>30</sup> W. Klausewitz and J. Nielsen "On Forsskål's collection of fishes in the Zoological Museum of Copenhagen", *Spolia zool. Mus. Haun.* 22(1965) 1-29.

<sup>31</sup> Yaron *et al.*, (see p.45 fn. 13).

<sup>32</sup> Arne Noe-Nygaard, "Stenene i Niebuhr-Forsskål samlingen i Den arabiske Rejse 1761-67", *Munksgaard* (1990) 383-390.

<sup>33</sup> "In dem maltesischen kalkstein findet man viele Muscheln and Schnecken, and die so gennanten Schlangenzungen, welche die Naturkündige für Fischzähne halten.//Ingleischen die

As none of the Maltese fossils recorded by Forsskål is figured and as there is no trace of these objects in the Copenhagen Museum, the question of the correct identity of the new species of fossil echinoid (? *Lovenia duncani*, ? *Lovenia anteroalta*) and of other doubtful fossils referred to in Forsskål's list, remains unsolved.

[p.54: Plate 7: see end of article] [p.54]

#### **Local natural history, Forsskål's books and collections...**

Forsskål died from the plague at Jerim, Yemen, on 11 July 1763 and no official memorial is known to have been set up in Denmark or Yemen to commemorate his adventure and his contribution to science. The exact place of his burial is not known, and can probably no longer be identified for the placing of a tombstone. His contribution to science, however, will always be remembered through his three major works, listed hereunder. All three relate to the natural history of the regions visited by the Danish Expedition and were published posthumously in 1775-76 by Forsskål's fellow traveller and friend Carsten Niebuhr, the sole survivor of the expedition, who, not being able to find a willing sponsor to share his burden, had them published at his personal expense:

*Flora aegyptiaco-arabica sive descriptiones plantarum quae per aegyptum inferiorem et Arabiam felicem detexit, illustravit Petrus Forsskål, Prof. Haun. Post mortem auctoris edidit Carsten Niebuhr. Accedit Tabula Arabiae Felicis Geographico-Botanica.* Hauniae [p.55] (Copenhagen), 1775. Ex officina Mölleri, Aulae Typographi 8vo. 32, cxvii, 220, 20, xxxvi, 164, 16 pp., Tab. II-XLIII. (Nat. Libr. Malta: PP. 5. 1). (Rep. 1975. 4to., 377 pp., map) (Plate 8);

*Descriptiones Animalium, Amphibiorum, Piscium, Insectorum, Vermium; quae in itinere orientali observavit Petrus Forsskål Prof. Haun. Post mortem auctoris edidit Carsten NIEBUHR. Adjuncta est Materia Medica Kahirina atquae Tabula Maris Rubri Geographica.* Hanniae (Copenhagen), 1774, ex officina Mölleri, aulae Typographi apud Heinneck in Faber. (Nicolaus Möller for Heinneck and Faber). 164 pp., 2 engraved maps of the surroundings of the Red Sea, opposite the title page (Plate 9);

and

*Icones rerum naturalium quae in itinere orientali dipingi curavit.* Edited by Carsten Niebuhr. Illustrations by G.W. BAURENFEIND. Copenhagen. 1776. 43 pls. (Plate 10).

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*so gennanten Schlangenaugen, welche die heifigen Goldschmiede in Ringen, oder vielmehr in einer sauber gemachten goldenen Kette einfassen an häufig an Fremde verkaufen. Diese Schlangenzungen an Augen sollen ein Verweis...(?) der Apostel Paulus die Giftige Thiere von Malta vetrieben habe. Vielleicht aber können die Schlangen auf diesem dürren felsigten Gründ nicht leben. Ohne zweifel findet man auch noch andere kleine Inseln, ---(?) nie ein Heiliger gewesen ist, an auf denen man dem ohngeachtet doch keine Schlangen antrifft"* (NIEBUHR, 1774-78, Reisebeschreibung, 15-16, footnote); see also G. Zammit Maempel, *The Folklore of Maltese Fossils*, Papers in Mediterranean Social Studies 1, 29 pp, 4 pls (Midsea Books Ltd., Malta, 1989).

The *Flora Aegyptiaco-Arabica* (1775) is Forsskål's most important botanical work (Pl.8). It contains a large number of Arabian plants, here described for the first time. Apart from the "Flora Aegyptiaca" and the "Flora Arabico-Yemen", the work contains also information about the flora of "Estac" (near Marseilles), Constantinople and surroundings, and of some of the Greek Islands visited by the Danish Expedition.

In Malta, Forsskål's main botanical excursion was to Salina and his "Florula Insulae Melitae" (pp. xiii-xiv) (Plate 11 (a)(b)) includes only 87 items – 9 cultivated and 78 native species.<sup>34</sup> The paucity of Maltese plant [p.56] life is therein attributed not only to the inadequate nature of local soil ("*Flora Insulae adeo male in saxo Melitensis habitat et parvum plantarum progenien educat*" (p.8.)), but also to the small size of local fields and their inadequate cultivation.

**[p.56, Plate 8: see end of article]**

[p.57] Of the Maltese flora listed by Haslam, Sell and Wolsely (1977), one genus (*Pteranthus*) and seven species (*Urtica dubia*, *Pteranthus dichotomus*, *Coronopus squamatus*, *Orobanche crenata*, *Halophila stipulacea*, *Vulpea fasciculata* and *Polypogon semiverticulatus*) still carry Forsskål's authorship.<sup>35</sup> In addition, there is also the little known Genus, *Forskålia* (Family Urticaceae) which Linnaeus dedicated to his Swedish friend and eminent botanist.

The second part of the book contains a more elaborate description of over 800 plants, often with their Arabic names, whilst sketch maps prepared by Niebuhr outline the itinerary of the Expedition. It is interesting to note that none of the illustrations in the *Flora Aegyptiaco-Arabica* are by Baurenfeind, the artist of the expedition. With the exception of a plate illustrating spiders (by Georg HAAS) and another (Pl. III) figuring a plant with tendrils (by Meno HAAS), all plant illustrations in this book carry the name of the artist Peter HAAS. It should here be recalled, however, that Baurenfeind's original drawings were lost (probably engulfed by the great fire which, in 1795, destroyed that part of Copenhagen where the University was situated) and that the Haas family were the engravers who made the copper plates in Niebuhr's works and in the *Icones*, from Niebuhr's and Baurenfeind's originals.

In 1790, the plants collected by Forsskål on his Arabian journey, as well as some others "recently discovered", were described in detail by Martino Vahl in his *Symbolae Botanicae*.<sup>36</sup>

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<sup>34</sup> The first list of Maltese plants, "*De Plantis quae in Melita et Gaulo observantur*," was prepared by the Maltese physician Gian Francesco Buonamico in 1670. It enumerated 243 native and cultivated species but was never published: two manuscript copies (one with additional notes and Maltese names) are at the National Library, Valletta and a third one is at the Natural History Museum, London. In 1689, the Maltese physician Filippo Cavallini raised this record to 326 species when he published in Rome his "*Pugillus meliteus seu omnium herbarum in insula Melita ejusque districtis enascentium perbrevis enarration*," in: *Brevis enumeratio plantarum praesenti anno publico sapientiae Romanae medicinalium simplicium professore ostensarum, et quae, in Hortum Hyemalem redacte asservantur* (pp. 103-29).

<sup>35</sup> S.M. Haslam, P.D. Sell, P.A. Wolsley, *A Flora of the Maltese Islands* (Malta University Press, 1977) 560 pp., 66 pls., 29 figs.

<sup>36</sup> Martino Vahl (1790), *Symbolae Botanicae sive Plantarum tam earum, quas in itinere, imprimis orientali, collegit Petrus Forskal, quam recentius detectarum. Exactiores Descriptiones, nec non Observatione circa quasdam plantas dudum cognitae, auctore*

[p.58: see end of article]

[p.59: see end of article]

[p.60, plate 11a: see end of article] [p.60]

### Dr Giorgio Locano

All along the sea-route, Forsskål diligently collected and studied marine animals and seaweed, and at each port of call, he went ashore and carried out scientific investigations in the region. Whenever possible, he also visited the local University and Botanical Gardens and contacted local naturalists. During his short stay on the Island, Forsskål met (*invenit*) a learned Maltese doctor-naturalist whom he describes as a *Botanicus socium & ducem Medicus peritissimum quae Parisies commorans veriora Scientias* [p.61, plate 11b: see end of article] [p.61] *Naturales fundamento lucratis est cuique debemus exhibitium in Fauna Catalogum Piscium Melitensium*.<sup>37</sup> For some unknown reason, the identity of this doctor-naturalist, who supplied Forsskål with a list of the fish occurring in Maltese waters, is not revealed and the Catalogue is enigmatically presented to the reader in the anonymous: *Catalogus Piscium Melitensium. A medico doctissimo communicavit* (Plate 12). The reference is probably to a certain Dr Giorgio Giovan Battista LOCANO from Senglea, one of the most prominent physicians of his day and a man with [p.62: see end of article] [p.63: see end of article] [p.64] four short Latin medical treatises to his academical credit.<sup>38</sup> Giorgio Locano studied Medicine at Montpellier, from where he obtained a doctorate in 1749. In 1751, he was elected Member of the French Royal Academy of Sciences<sup>39</sup> and in 1754 served as Doctor on board the Galleys of the Order. He was subsequently appointed Physician to the Women's Hospital and District Medical Officer of Valletta.<sup>40</sup> He soon became one of the Principal Physicians of the Holy Infirmary and a Member of the Proto-Medical College of Malta,<sup>41</sup> where he was entrusted with the teaching of Botany and other Medical subjects to medical students.<sup>42</sup> Forsskål, however, never mentions Locano (or anyone else) by name and as Locano was well qualified in Botany, it is possible that he helped also in the compilation of the "Florula Insulae Melitae." The fact that Locano's full credentials are listed only in the *Flora* (p.8), is, presumably, an indication that the *Flora* preceded the *Descriptiones Animalium*.

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*Martino Vahl; Professore Regio Societatis Agrariae Taurinensis, Physico-Botanicae et Georgophilorum Florentinorum, Georgicae Treiensis, scientiarum, quae velitris est, Physiographicae Lundensis, Scientiarum Norvegicae sodali. Pars Prima cum Tabulis XXV aeri incisis. (Hauniae, Nicolaus Möller et Filius, MDCCXC). An English translation with an introduction by A. Fox Moule was reprinted by Scandinavian Fine Editions in 1984: Symbolae Botanicae or Exact Descriptions of Plants collected by Petrus Forsskål on his Arabian Journey and other recently discovered Plants together with Observations of some previously known Plants by MARTIN VAHL, Part One (Copenhagen, 1790).*

<sup>37</sup> *Flora Aegyptiaco-Arabica*, 8; See also: "Catalogus Piscium Melitensium", pp. xviii-xix.

<sup>38</sup> *Dissertatio physiologica de mechanico feminarum tributo*, (Monspeli, 1749); *De novo spinalis medullae ductu* (Malta, 1761); *De imperio musculorum in oeconomia animali* (Malta, 1774); *De imperio gangliorum in oeconomia animali* (Malta, 1776).

<sup>39</sup> N[atational] L[ibrary] V[alletta], Archives 1189, 65; Paul Cassar, *Medical History of Malta* (London, Wellcome Historical Medical Library, 1965) xi + 586 pp, 18 pls. (p. 447).

<sup>40</sup> NLV Archives 1172, f. 180; Cassar (1965), 447.

<sup>41</sup> Cassar (1965), 446.

<sup>42</sup> NLV Archives 875, ff 498, 501; Cassar (1965) 447.

It is, indeed, very curious (and unflattering for Malta) that Forsskål's *Album* has no entry for his Malta stay and that at the Oriental Department and at the Manuscripts Department of the Royal Library in Copenhagen, as well as at the Zoological Museum of that same city and at the "Office for History of Science" at Uppsala University there is no knowledge of, or documents relating to, this doctor-naturalist.<sup>43</sup> It should be recalled, however, that, when, in his "Diary" (*Resa till.....*, Uggla, 1950:27) Forsskål refers to the "learned friend" who taught him about Maltese fishes, and to the professor who could teach about the History of Minerals ("*Och ortens Mineral Historie kan inhämtas of detta prof.*"), he marks these two references with one (\*) and two asterisks (\*\*) respectively. Unfortunately, both these footnotes are lost (Pers. comm. T. Frängsmyr), so that the names of these (?) two naturalists will remain unknown.

[p.65] *Descriptiones Animalium, Amphibiorum, Piscium, Insectorum, Vermium; quae in itinere orientali observavit Petrus Forsskål* (Pl. 9), the second major work of Forsskål, is a fundamental treatise on the fauna of the areas visited by the Danish Expedition. The book is one of the most accurate of faunal lists, and one which shows a fine feeling for taxonomic distinction scarcely traceable in any previous author.<sup>44</sup> In the FOREWORD (p. 17), Niebuhr comments on the scarcity of illustrations by Baurenfeind stating that *Delineationes Animalium, e Classe praecipue Vermium, hunc paucas egregia pinxit manu industrius BAURENFEIND*. In fact, the book carries no illustrations except for a plate with two maps of the Red Sea region delineated by "I. Haas." This deficiency in illustrations, however, is amply remedied by the clear and adequately detailed descriptions given by Forsskål.

To the student of natural history of the Maltese Islands, this book is of very particular interest as it includes the first known scientific list of Maltese Fossils (pp. 139-140) (Plate 6) and the first list of the Fishes encountered in Maltese waters (pp. xviii-xiv) (Plate 12). The latter list of 117 Latin names includes the Maltese equivalent for 50 of the listed species. Arabic names are not included in the list, but appear (in Arabic writing) in the text describing the species.

Forsskål's third major work to be edited by Carsten Niebuhr is *Icones rerum naturalium quae in itinere orientali dipingi curavit* (1776) (Plate 10). It contains 43 illustrations of plants and animals, mostly new to science, observed or collected by the Swedish naturalist during his journey to Arabia. The plates are the work of the Expedition's artist G. F. Baurenfeind, who, on 29 August 1763, at the age of 35 years, died *en route* to Bombay. The text accompanying the drawings was contributed by the Danish Botanist Johan Zoëga (1742-88), who, most probably, helped also in the compilation and editing of Forsskål's other books from the almost 1800 sheets of his field notes.<sup>45</sup>

### **The Malta–Yemen leg of the trip.**

On the morning of 20 June 1761, the Danish convoy berthed in Malta's Grand Harbour weighed anchor and set sail for Alexandria, Egypt, receiving [p.66] the usual farewell ceremonial salute on its way out. Forsskål's diary records that shortly after leaving the Island, Niebuhr was struck down with a very severe attack of dysentery, from which he made an uneventful recovery. He felt so miserable during this bout of intestinal trouble that he had almost given up all hope of ever seeing Constantinople – let alone Arabia Felix.

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<sup>43</sup> Pers. comm. Stig. T. Rasmussen, Palle Ringsted, Dr. Tom Schiotte respectively.

<sup>44</sup> Antiquariaat Julius Steiner-Asher (Amsterdam, 1991) 6(Natural History)(63):13 quoting British Museum Catalogue (Nat.Hist.) p. 594 and other authors.

<sup>45</sup> Yaron *et al*, 1986:160.

At Constantinople, (the Byzantium of ancient times, now Istanbul), the members of the expedition were the guests of the Danish ambassador S.W. vom Gähler (30 July-8 September 1761).<sup>46</sup> After visiting Smyrna (Now Izmir) and some islands of the Greek archipelago (Milo, Falconiere, Andros), the Expedition finally landed at Alexandria, ascended the Nile and visited Mount Sinai and Suez. The very title of von Haven's diary, *Tagebuch über eine Reise von Suez nach dem Djebel el-Mokateb getan vom 6ten bis 25sten September 1762*, shows that the expedition left Suez on 6 September 1762 and reached Djebel el-Mokateb on the 25th of the same month. In October 1762, after a stay of one year in Egypt and Sinai, the party sailed southwards to Saudi Arabia reaching Jeddah at the end of 1762. They stayed here only a short while, then sailed to Luhaiya, a port on the coast of Yemen, and afterwards journeyed overland to Mokha, then an important port in the coffee trade.

### **The fate of the Danish expedition.**

Disaster soon struck the Danish expedition. In May 1763, when the philologist F.C. vom Haven died, the expedition sustained its first in a series of major setbacks. This was followed, two months later (11 July 1773), by the death of the naturalist Forsskål. Some of the natural history material collected by him had already been shipped to Copenhagen before his death and the remaining crates were later on dispatched home by Niebuhr via Bombay, Canton and Tranquebar.<sup>47</sup> The surviving members of the team then visited Sana (capital of Yemen) but were obliged to return to Mokha from where they sailed to Bombay. The Imam of Sana honoured the leader of *The Arabian Voyage* with the gift of an Arab costume – including turban, curved dagger, long spear and cape. At a later date, the artist Brun [p.67] sketched Niebuhr in his full regalia and the painting was subsequently engraved by J.F. Clemens (The illustration is reproduced by T. Hansen, 1964: 293. See also Pl. 3). On 29 August 1763, whilst *en route* to Bombay, the expedition lost also its artist (Georg Wilhelm Baurenfeind) and a few months later, at Bombay on 10 February 1764, its surgeon Christian Carl Kramer, with whom Forsskål had always been at daggers as he considered the young doctor to be incompetent.

After the passing away of Baurenfeind, Niebuhr made it his duty to sketch important features of the expedition. Thorkild Hansen (1964) reproduces a number of Niebuhr's illustrations, including "The town of Jerim, seen from the window of the room where Forsskål lay dying" (p. 270), "St Catharine's Monastery" (p. 182), "Jerusalem from Mount Olive" (p. 345), "The four Chairbearers and the palanquin used in the procession in Bombay and Sural" (p. 305), "The ruins of Persepolis" (p. 317) and "Reconstruction of Cuneiform alphabet (p. 321)." In connection with the latter illustration, it is important to record the very significant contribution made by Niebuhr when he copied the cuneiform inscriptions at Persepolis, the ancient capital of Persia, and had them published in Europe. This very fine work of his, which helped Georg Friedrich Grotefend and others to decipher the Persian cuneiform inscriptions, is said to have considerably damaged his eyesight.<sup>48</sup>

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<sup>46</sup> Kirketerp-Möllerer, 1970:153. During his stay in Constantinople, vom Haven bought for the Royal Library in Copenhagen a series of 34 fine Islamic manuscripts. A list of these is given at the end of Kirketerp-Möller's article (see p.41 fn 6).

<sup>47</sup> Yaron *et al.* 1986:160 (see p. 45, fn 13).

<sup>48</sup> *Encyclopaedia Britannica Inc.*, (William Benton, Publisher, USA, 1962) Cuneiform 6:867; "Grotefend, Georg Friedrich" 10:907.

All illustrations from the expedition (including Forsskål and Baurenfeind's *Icones*), as well as a few later ones of relevance, have recently (1990) been published by Stig T. Rasmussen in his *Den Arabiske Rejse 1761-1767*.<sup>49</sup>

### **Carsten Niebuhr – The sole survivor**

Carsten Niebuhr, the pleasant and gentle-natured leader of the expedition and its only survivor, was the son of a farmer. He was born on 17 March 1733 in Luedingworth, near the Elbe estuary in the North Sea, in Hannoverian Germany. By the time he was 15 years of age, he was [p.68: see end of article] [p.69] orphaned of both parents and earned a living by working as a farmhand on his parents' farm. Nonetheless, he managed to study in Göttingen (1757-60), where he learned surveying, mathematics, Arabic and astronomy, becoming proficient in all these subjects. This German-born traveller from Hannover, was now the sole survivor of the ill-fated expedition, but his health was poor and he was on his own, stranded in India thousands of miles away from home. He is said to have managed to survive and restore himself to health by adopting native dress and food. It took him 14 months to be once again fit enough to undertake the arduous journey to Copenhagen. He travelled through Muscat, Persia (Iran), Mesopotamia, Cyprus, Asia Minor and Brusa, reaching Istanbul in February 1767 and Copenhagen nine months later on 20 November 1767. It is said that when he arrived back in Denmark, after an absence of almost seven years, he was “a forgotten man” because political interference and personal animosities had suppressed the significance of the scientific attainments of *The Arabian Voyage*.

The expedition lasted six years (1761-67) – some maintain that it lasted only three years (1761-64), as by 1764 all its members, except Niebuhr, had died on the way. During those three eventful years previously unknown parts of Yemen were explored, and when, in 1767, Niebuhr returned to Copenhagen, he brought with him great results. These included, not only his journal and astronomical data, but also the albums and diary of the naturalist Forsskål, that of the philologist von Haven, the limited number of drawings executed by himself and by Baurenfeind, as well as the 34 fine and rare Oriental manuscripts bought by von Haven.<sup>50</sup>

After his return, Niebuhr lived initially in Copenhagen where he held posts in the Danish Military Services and was “Captain of Engineers in the Service of the King of Denmark” (Plate 15). Here he married the daughter of the King's personal doctor on 15 September 1773 and wrote the story of the expedition in two well illustrated accounts published by Nicolaus Möller, Kopenhagen: *Beschreibung von Arabien* (Description of Arabia) (1772) (Plate 13) and “*Reisebeschreibung nach Arabien and andern umliegenden Landern*” (Description of a journey to Arabia and other [p.70, plate 14: see end of article] [p.70] contiguous countries), Vol. 1 (1774), Vol. 2 (1778)<sup>51</sup> (Plate 14). His works were translated into French and English.<sup>52</sup> (Plate 15). From his travel accounts and from the contents of the diaries of the

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<sup>49</sup> Stig. T. Rasmussen, *Den Arabiske Rejse 1761-1767: En Dansk expedition set i videnskabshistorisk perspektiv* (The Arabian Voyage 1761-1767: a Danish expedition seen in the perspective of the history of science)(Kobenhavn, Munksgaard, 1990) 413pp. (ISBN 87-16-10541-9).

<sup>50</sup> Kirketerp-Möller 1970:153 (see p.41 fn.6).

<sup>51</sup> Another German edition of Niebuhr's *Reisebeschreibung*, edited by Gloyer and Oldhausen, was published in 1837 by Friedrich Perches, Hamburg.

<sup>52</sup> “*Description de l'Arabie d'après les Observations et Recherches fait dans les Pays Meme*” Amsterdam. 4to., xiii, 372, (xii). (French translation by F.L. Mourier, of the original German edition, “*Beschreibung von Arabien*,” (1774-80); “*Voyage en Arabie et en autres Pays de*

various members [p.71, plate 15: see end of article] [p.72] of the expedition, it is now possible to reconstruct with considerable accuracy the eventful journey of *The Arabian Voyage 1761-67*. In Copenhagen, Niebuhr edited and published also the three major works of his deceased Swedish fellow traveller and friend, Petrus Forsskål: *Flora Egyptiaco-Arabica* (1775), *Decriptiones Animalium* (1775) and *Icones rerum naturalium* (1776).

In 1792, upon being offered a post in the Civil Services of Holstein, Germany, he went to reside at Meldorf in Holstein. Here he built himself a house (Plate 16), now owned by Goldsmith Pfr. Gosch Möller, who turned the place into an archive, “*Niebuhr-Archiv der Domgoldschmiede zu Meldorf*.” On the 100th anniversary of the birth of his son, Professor Barthold Georg Niebuhr (27.9.1776-2.1.1831), a marble tablet was mounted on the market-square side of the Niebuhr house with an inscription commemorating the memory of this famous German historian, philologist and statesman, and that of his father Carsten, the pioneer Arabian traveller. As this plaque contained no information about their achievements, but merely recorded the dates of their birth and death, Pfr. Gosch Möller was instrumental in having a bronze plate set up and affixed at the entrance to the house. Worded in Lower German, Carsten Niebuhr’s own customary language, the bronze plate records that:

“In the year 1780, the Danish King’s Secret Budget Advisor, CARSTEN NIEBUHR, Knight of the “Danebrog-Order” (= Order of the Cross), President of the Court, built this house and lived here. With his travels to Arabia and Mesopotamia, he served science eminently. With his investigations and writings, he showed Grotefend the way to the clarification of the cuneiform writing. He re-discovered the lost Niniveh and his calculations of the Gulf of Suez were so precise that they could be used a hundred years later for the building of the Canal.”<sup>53</sup>

### **Niebuhr’s and Forsskål’s memorials**

Carsten Niebuhr died at Meldorf on 26 April 1815 at the age of 82. His former residence in that town has been turned into a Niebuhr-Archiv and is [p.73] now marked with a marble commemorative tablet and a bronze plate outlining some of his achievements. A memorial tablet has been set up also in the church of his birthplace, Luedingworth (Plate 17) and an inscribed tombstone once adorned his burial place in the Protestant Cathedral of Meldorf.<sup>54</sup> These are befitting monuments to the memory of a man who was not only an intrepid pioneer in the scientific exploration of Arabia, but also one who, by his extensive travels, maps, descriptions and many-sided observations, became a source of profound knowledge of the Orient to others. His main contribution to the scientific world – particularly in the field of Arabian geography and in the field of natural history of all the localities visited by the Expedition – was, however, that of “surviving to tell the story.” By so doing, Niebuhr gave sense to the heavy sacrifices of the expedition: for he despatched or brought back with him, not only the maps and the journals of his deceased comrades, the botanical, zoological and

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l’Orient avec l’extrait de sa description de l’Arabie et des observations de Mr Forsskål” (Suisse (Berne) Libraires Associes, 1780), 2 vols., illus, fold. maps. (Malta: Vol. 1 pp. 7-9); “*Voyage en Arabie et en autres Pays circonvoisins*.” (1774-78). For title of English translation see Pl. 15.

<sup>53</sup> Pers. comm. Pfr. Gosch Möller 19.ii.92.

<sup>54</sup> At the turn of the last century, the pavement of the Dom had to be removed to install piping for the central heating and Niebuhr’s tombstone and bones were transferred to a central grave in the new cemetery.

geological collections and the documentation compiled by his naturalist friend and fellow traveller, Forsskål, but also the accurate illustrations prepared by the artist Baurenfeind. These include the three small Danish merchant ships at anchor in Marseilles, the Arab fisherman at Djedda, a woman selling bread, the dancers that bade the party farewell and the lateen-sailed boat that was to take the Expedition to Arabia.

As opposed to Niebuhr, however, the eminent naturalist Petrus Forsskål has no known Danish memorial erected to his memory to remind posterity of his great scientific achievements in the field of natural history of the various countries (including Malta) visited by the Danish Expedition. He lies forsaken in an unmarked grave somewhere in Jarim, Yemen. The only – but everlasting – memorial of his scientific enterprises are his three major works: the *Flora Aegyptiaco-Arabica*, the *Descriptiones Animalium* and the *Icones*, all of which were edited and published posthumously by Carsten Niebuhr. So great is human ingratitude, that Niebuhr could not even find a sponsor to lighten his financial burden and had to publish the books at his own personal expense.... And yet, as Niebuhr himself records, Forsskål was the best informed member and the real leader of the Expedition!

**[p.74]** Forsskål's name is not much known in Malta, but he was, in fact, one of the founders of local palaeontology and of the study of other fields of natural history of the Maltese Islands. In addition, his diary and books give a clear picture of Maltese life in those days, for in spite of their heavy scientific commitments, Niebuhr and Forsskål found time also for a look at local houses, monuments, churches, catacombs, public gardens and the Maltese countryside. They did not fail to observe and describe also some local customs and traditions like religious pomp, the salt pans on the coast, the fixing of a prominently displayed marble slab on country chapels warning criminals that that particular chapel did not offer them a safe refuge from the Law and the strange, but true, fact that snow from Etna was imported to cool local drinks in summer!

**[p.75]** Denmark has not been grateful to Forsskål and the other young men of *The Arabian Voyage 1761-67*. They might not have all been Danish by birth, but all of them most willingly sacrificed their youth, and ultimately gave their all, in the service of that Country, its King and the entire scientific world.

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[p.36]

Plate 1.



Plate 1. Pehr Forsskål's portrait (1760), Salnecke Castle, Uppland, Sweden. (Courtesy: Stig T. Rasmussen, The Royal Library, Oriental Department, Copenhagen. Photo No. 159714).

[p.38]

Plate 2.

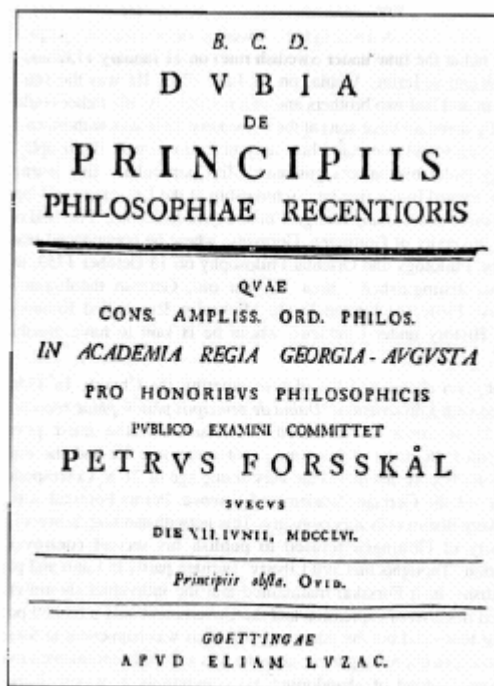


Plate 2. Title page of Pehr Forsskål's dissertation presented Göttingen 1756.

[p.39]

Plate 3.



Plate 3. Portrait painting of turbaned Carsten Niebuhr at about the age when he visited Malta. It was executed by Hans Hansen (1769-1828) in the 1820's. It is based on the 1774 etching by the German J. F. Clemens (Stettin 1749 - Copenhagen 1831) and belongs to a series of paintings of famous men commissioned for Frederiksborg Castle. (Courtesy: Det Nationalhistoriske Museum, Frederiksborg). Explorer's signature (Courtesy: Pfr. Gosch Möller, Niebuhr-Archiv, Meldorf).

[p.44]

[Plate 4.

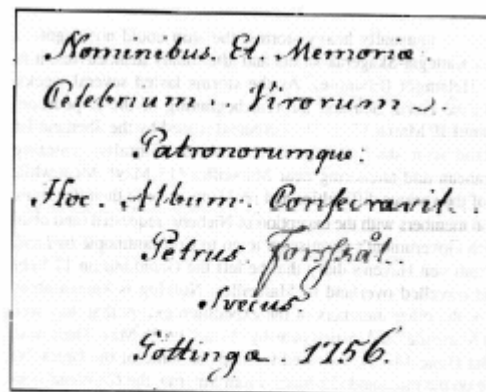


Plate 4. Title page of Forsskål's album (8vo) with specimen "signature". (Courtesy: The Royal Library, Department of Manuscripts, Copenhagen).

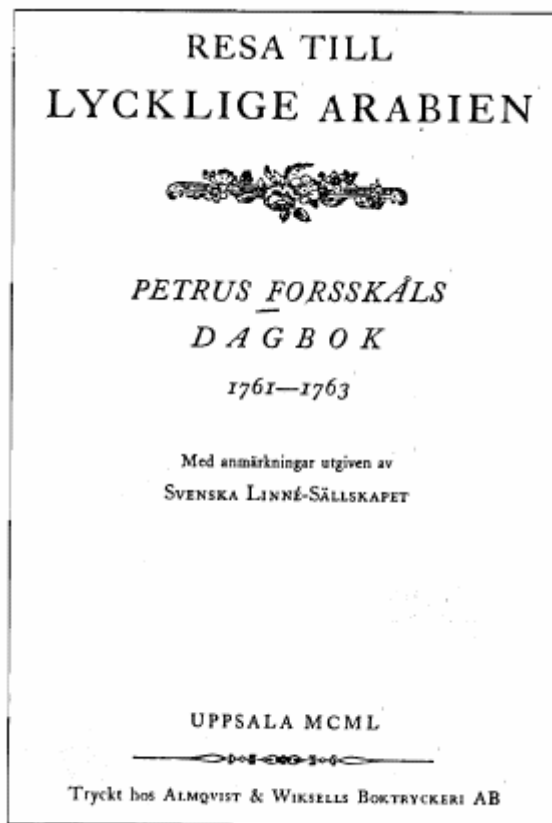
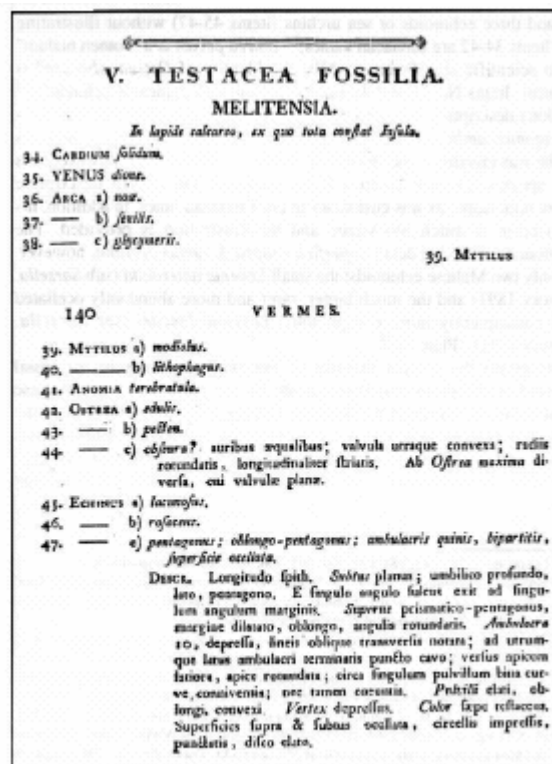


Plate 5. Title page of Forsskål's diary, as printed in Uppsala, 1950.

Plate 6. A list of Maltese Invertebrate fossils given by Forsskål in his *Descriptiones Animalium*, 1775: 139-140. Thought to be the first scientific list for Maltese fossils.

[p.54]

Plate 7.

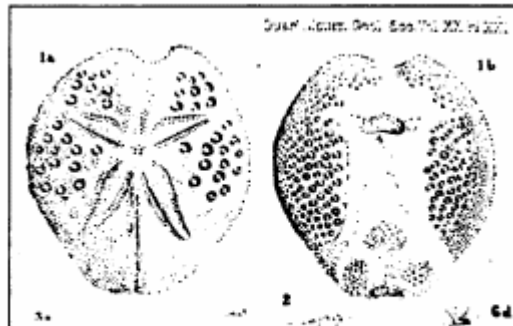


Plate 7. *Lovenia duncani* (Gregory 1891), Lower Globigerina Lst. Division, Malta, thought to be the new species described by Forsskål (1775).

[p.56]

Plate 8.

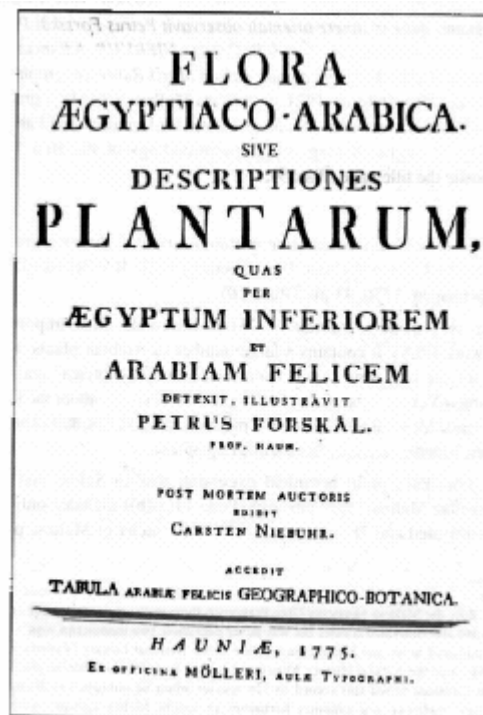


Plate 8 Title page of Forsskål's first major work.

[p.58]

Plate 9.

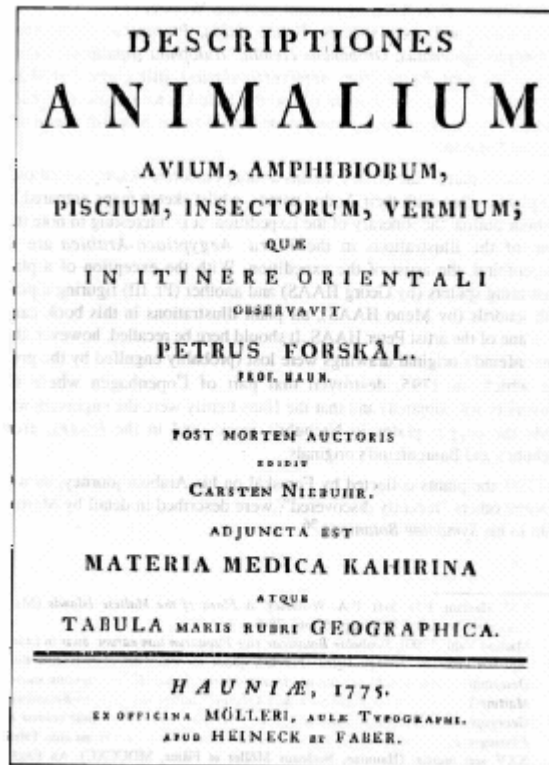


Plate 9 Title page of Forskål's second major work.

[p.59]

Plate 10.

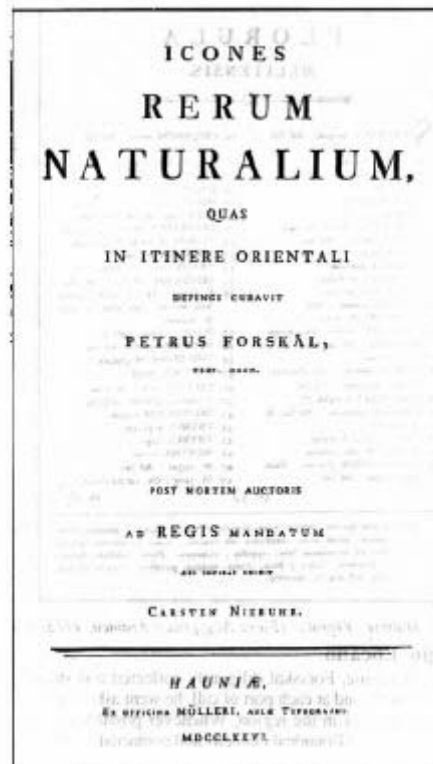


Plate 10 Title page of Forskål's third major work.





[p.68]

Plate 13.



Plate 13. Title page of Niebuhr's *Beschreibung* (1772).

[p.70]

Plate 14.



Plates 14, 15. Title page of Niebuhr's *Reisebeschreibung* (1775) and of its English translation by Robert Heron (Edinburgh, 1792).

[p.71]

Plate 15.

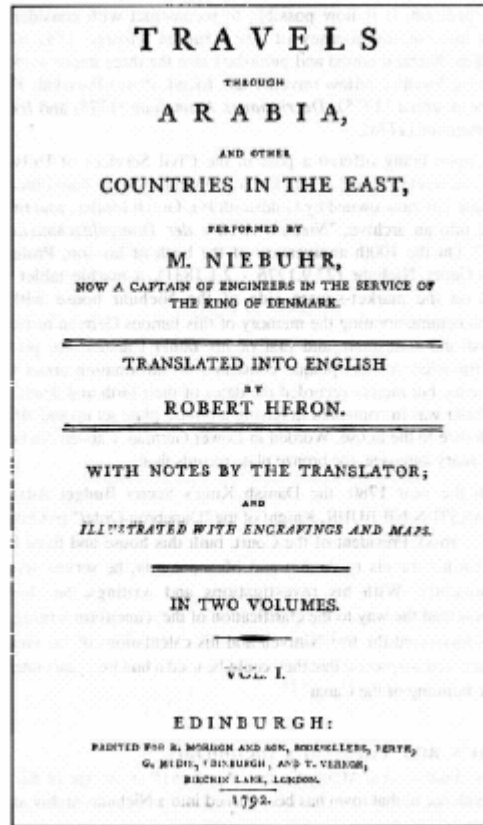


Plate 15

[p.74]

Plate 16.



Plate 16 Niebuhr's house at Meldorf, now the "Niebuhr-Archiv der Domgoldschmiede". (Courtesy: the present owner, Pfr. Gosch Möller).

Plate 17.



Plate 17 Memorial tablet to Carsten Niebuhr at the church of his birthplace, Luedingsworth. (Courtesy: Pfr. Gosch Möller, Niebuhr-Archiv, Meldorf).

