

VICTUALLING OF MALTA BASED-NAVIES



Documentation of naval history often dwells upon the actions of various frigates, the famous sea battles, or the heroic actions of the various naval commanders in bygone days. The social aspects and day-to-day management of ship organisation is often neglected or considered unimportant. Naval victualling may appear at first sight a dull enough subject, but a moment's reflection shows its vital importance in promoting the health, morale, and therefore the efficiency of a ship's company. The geography of the Mediterranean with the relatively short distances between the various ports should have given little problems in ensuring that the ships stationed in the Mediterranean were well provisioned, however several serious problems were encountered on account of the large concentration of men out to sea for long cruises without touching land.

THE ORDER OF THE KNIGHTS OF ST. JOHN

The Order of the Knights of St. John took great care and attention to ensure the wholesomeness of the food on board ships. Enough provisions were carried by each galley of about 500 men to last two and a half months. The staple item of food for the ship crew and rowers, in common with other navies, consisted of the ship's biscuit, "hard tack" or "*biscotto*".



Hard tack biscuits with maggots

This food, an unappetising mixture of flour, salt and water rolled, baked and dried to a tooth-breaking hardness, often became after prolonged storage heavily contaminated by weevils. During the earlier years of their stay on the Islands, the ship's biscuit or *biscotto* was prepared in the Order's ovens in Valletta.¹ Built under the direction of Girolamo Cassar before the end of the sixteenth century, the Order's bakery at Valletta, like the orphan asylum, was a

functional structure without aesthetic aspirations. It consisted of rows of long rooms which buttressed each other like Venetian arsenals. They were braced by other long rooms set at right angles to them, a planning device to reduce the impact of bombardment or earthquake.² Production difficulties were eventually experienced because of the lack of firewood and the periodical shortages of grain in the Islands. After the mid-17th century, the Order acquired a vast complex of buildings in Augusta (Sicily), known as the *Recettoria*, with large store-houses, bakeries, fresh-water wells and flour-mills for the manufacture of bread and biscuits for the Order's fleet.³ These provisions were regularly collected by the ships of the Order prior to their naval exercises. If the Squadron happened to stay away at sea too long, the *Comun Tesoro* used to hire transport - usually a *tartana* - to despatch a fresher supply of ship-biscuit.⁴ The *Recettoria* in Augusta featured during the 1693 earthquake in Sicily. On the 3rd January, four galleys of the Order's fleet left Malta for Augusta to collect a load of ship-biscuits and other provisions and victuals for use of the fleet in a joint naval operation against the Turks in Crete planned for the following summer. On their arrival, the crews went ashore to collect the provisions as instructed. At this junction, the earthquake struck, demolishing the buildings and killing a large number of slaves and galley crew men. The loss of the bakeries and the crew members threatened the future Levant expedition. GrandMaster Adrien de Wignacourt instructed his ambassador to Rome to plead with the Pope to provide the order with an adequate number of *forzati* or convicts to replace the crews. In addition, the Order's representative to Augusta was instructed to assess the damage to the Order's bakeries and ascertain whether it was possible to re-instate the facilities for the manufacture of ship-biscuits in time for the expedition. If timely re-instatement was not possible, provisions were to be requested by the Order's Receiver in Venice. By March, plans for the reconstruction of the destroyed buildings and bakeries in Augusta and for the construction of new ones with funds provided by the *Comun Tesoro* were prepared, together with an estimate of costs. By June, one large magazine had been

¹ D. Cutajar, C. Cassar: *Malta's role in Mediterranean affairs: 1530-1699. Report and Accounts, 1984.* Mid-Med Bank Ltd, Malta, 1984, p.68

² L. Mahoney: *A history of Maltese Architecture from ancient times up to 1800.* Veritas Press: Malta, 1988, p.150; Q. Hughes: *The Architectural development of Hospitaller Malta. Hospitaller Malta 1530-1798* (ed. V. Mallia-Milanes). Mireva Publ: Malta, 1993, p.499

³ M. Ellul: *The Earthquake of 1693 - A historical survey. Mdina and the Earthquake of 1693* (ed. J. Azzopardi). Heritage Books: Malta, n.d. [1994], p.28

⁴ D. Cutajar, C. Cassar: *op. cit.* note 1

completely reconstructed, and the rebuilding of the bakery buildings was in progress, the construction having been held up by an acute shortage of skilled labour.⁵

When at sea, the knights were encouraged to exercise frugality in their food consumption. However, they were supplied with three meals a day, the bill of fare including vegetable soup, meat, salads, eggs and fish. The crew had a less varied diet. The officers' main dish consisted of salted meat, preserved fish, vegetable soup and cheese, while the galley crew were supplied with vegetables, biscuits, oil and vinegar. Bread was issued at the rate of forty ounces per day per head. Wine was distributed to the rowers whenever they showed signs of exhaustion, while cocoa was issued to them every afternoon.⁶ The bill of fare supplied to the ships' company suggests a markedly varied diet requiring a variety of provisions including a supply of fresh meat in the form of live cattle, sheep, rabbits and poultry. To this end each galley could carry four to eight heads of cattle, 40-50 rams, and one poultry coop of fifty hens. During the voyage, the hens enjoyed the freedom of the deck where they roamed among the rowers' benches.⁷ When these provisions were consumed, the Captain was to provide the ship with another consignment of livestock from nearby ports. A fair amount of cooking took place on the galleys since the rowers' daily rations included barley soup to which was added oil and vinegar. Fresh bread was also baked in the portable ovens; the rowers were to be issued bread and ship-biscuits on alternating days. In 1684 an injunction was issued against carrying both ice-boxes and portable ovens. These portable ovens were probably based on Brodie's apparatus copied from the French. Ice was imported from the slopes on Mount Etna.⁸ The victualling of the Order's naval squadron appears to have been very well organised. The standards of service on these ships were such as to allow the Order to continue to find sufficient crews and rowers willing to serve on them. This allowed the Order to fit out galleys for most of the 18th century when practically all other navies had given them up.

BRITISH NAVY

In contrast the British Navy's victualling organization was one of the causes of the naval mutinies of 1797. In the forefront of every one of the men's petitions stand complaints about food and lack of medical supplies. The chief problem confronting those responsible for the victualling was the preservation of food in casks. Whether the provisions remained sound depended on the state of the ship, the area in which she sailed and the honesty of the contractors. The French Navy victualled their ships more sensibly and provided better necessities for the sick. The British Naval mutinies initiated a number of reforms which aimed at improving the sailors' diet and medical care while at sea so that the Nelsonian era saw better victualling of the British Navy associated with a greatly improved health of the fleets.⁹ The following optimistic remarks were made in the first Annual Report on the Health of the Navy in 1840: "The most remarkable of the advances in the improvement of victualling took place about the close of the last century,

⁵ [A]rchives of the [O]rder of [M]alta: 1459, f.15v; ; A.O.M.: 263, f.137r, f.146r; A.O.M.: 1771, f.39v. In: M. Ellul: *op. cit.* note 3, p.28-29

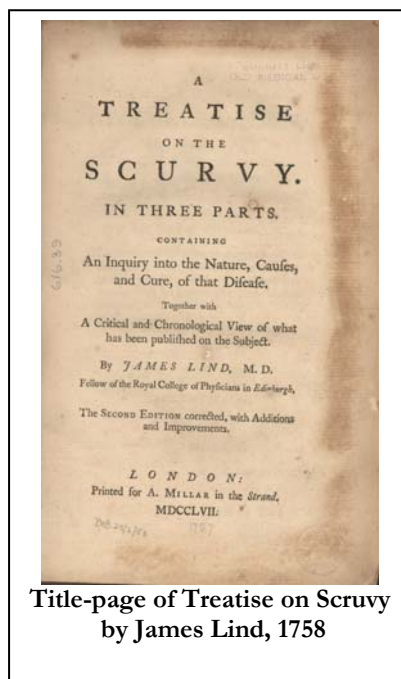
⁶ A.O.M.: 121, f.253a; A.O.M.: 161, f.113; A.O.M.: 1759, f.356,382,388. In: P. Cassar: *Medical History of Malta*. Wellcome Medical History Library: London, 1964, p.123-124

⁷ *Statuti della squadra dell' Ordine Gerosolimitano*. In: P. Cassar, 1964, *ibid*; D. Cutajar, C. Cassar: *op. cit.* note 1 "ciascun galera porti 8 testi di bestiami, 4 grosse e 4 vitelli, o 6 grosse e 10 montoni la Capitana, e 40 ciascuna galera siniglia"

⁸ D. Cutajar, C. Cassar: *ibid*; C. Lloyd, J.L.S. Coulter: *Medicine and the Navy 1200-1900. Vol. III - 1714-1815*. Livingstone: Edinburgh, 1961, p.86

⁹ C. Lloyd, J.L.S. Coulter, *ibid*, p.72, 81-93

when the system was placed on a fixed and sufficient footing; when the nominal became the real ration of the sailor, and the fraud and iniquity perpetuated under the cover of purser's weights (or eights) were abolished. From that period to the termination of the war in 1815 the progress of improvement was not rapid. Peace, however, made many beneficial changes in the condition of the naval force, and with them came increase of health. Meat could be issued soon after it was salted, and biscuit after it was baked; and they were consequently more palatable and nutritious".¹⁰ The 19th century logistics of supporting the Mediterranean British fleet with the basic needs and provisions were great. The regular sea provisions were issued to both officers and men alike since, according to the regulations, "all are to be equal in point of victualling". The captain of the ship, however, usually took on board his own supply of wine, as well as goats, cows and hens to provide some luxuries which, on occasion, were given to the sick. The logistics of war depended on reliable supplies of provisions of food and water particularly from the area of conflict. During the Napoleonic Wars at the turn of the nineteenth century (1793-1815), the scale of victualling of the Mediterranean British Fleet is amply illustrated by the accounts of the Agent Victualler's purchases between February and September 1804: 505047 pieces of fresh beef, 379 sheep, 21300 oranges, 81685 lb. onions, 119015 gallons of Spanish wine and 30326 of brandy. The problems of supplying blockading ships with provisions are exemplified by a letter sent in July 1799 by Captain Alexander Ball to Nelson with the ship *HMS Benjamin* which was leaving Malta because its food supplies were nearly finished.¹¹ In 1811, the daily diet in the Royal Navy consisted of bread, beef or pork, flour, suet, butter, sugar, cheese and beer together with small quantities of peas, vinegar, raisins and oatmeal. On paper, this allowance was in quantity, if not quality, a superior one to that enjoyed by most members of the labouring classes on shore. The quantity was still very much less than that required of a man doing a hard day's work. By 1825 the daily allowance was augmented, and continued to improve through the century.¹²



**Title-page of *Treatise on Scruvy*
by James Lind, 1758**

The rise in vegetable allowance reflected the increasing awareness of the role of vegetables in the prevention of scurvy, especially in prolonged voyages. Scurvy was the most malignant of all sea disease in the eighteenth century. Painful and loathsome in its symptoms, often fatal in its consequences, it killed more men and paralysed more fleets than any series of naval actions. Scurvy was only abolished from the British Navy after 1804, though it recurred when lime juice replaced lemon juice during long voyages. Lime has only half the amount of ascorbic acid per 100g of raw fruit as lemon or orange. The first controlled experiment from which our present knowledge of ascorbic acid derives was made in 1753 by Dr. James Lind who showed that scurvy could be cured by giving the patients oranges and lemons. During his voyages round the world between 1772 and 1775, Captain Cook kept his ship's company free from scurvy by giving them abundant

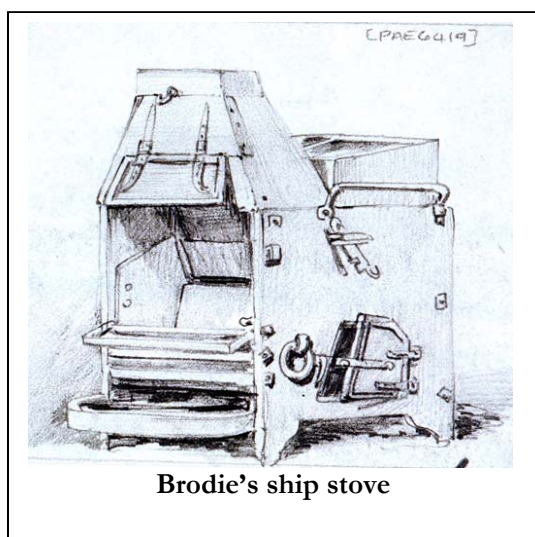
¹⁰ *Annual Report on the Health of the Navy*. London, 1840, p.199; C. Lloyd, J.L.S. Coulter: *Medicine and the Navy 1200-1900. Vol. IV - 1815-1900*. Livingstone: Edinburgh, 1963, p.94

¹¹ C. Lloyd, J.L.S. Coulter: *op. cit.* note 8, p.83,150; G. Muscat Azzopardi: *Nazju Ellul. Grajja ta Malta fi zmien il Francizji*. G. Muscat: Malta, 1909, p.258-259

¹² C. Lloyd, J.L.S. Coulter: *op. cit.* note 10, p.92-94

fresh food. Scurvy was produced experimentally in guinea-pigs in 1907, and ascorbic acid was isolated from lemons in 1932, with its structural formula being worked out in 1933 leading to its synthesis in the same year.

The problem of scurvy was little felt in the Mediterranean station since citrus fruits were readily available. The problem of procuring fresh fruit to prevent scurvy remained however a persistent problem even in the Mediterranean. In June 1804, the Physician to the Mediterranean Fleet Dr. John Snipe asked for permission to visit Sicily to supervise the contract for 30000 lemons, while in January he wished to add 30000 gallons of juice at 1^s 6^d a gallon which the contractor declined. Snipe then ordered 20000 gallons at 1^s 6^d a gallon for the fleet and a further 50000 gallons to be sent to England when these become available. His concern towards regular supply of citrus fruit can also be seen in his letter to Nelson regarding the Naval Hospital site in Malta, wherein he comments that Bighi Villa had "sufficient ground belonging to it, in a high state of cultivation, to produce abundance of vegetables for the use of the sick, and if Lemon and orange trees were planted, the Fleet, on this station, might be amply supplied with those antiscorbutic fruit".¹³ The relative immunity from scurvy of sailors frequenting the Mediterranean is reflected by Section 13 of the Mercantile Marine Act of 1850. This lays down that "every ship, except those bound to European ports, or to ports in the Mediterranean Sea, shall have on board a sufficient quantity of lime or lemon juice, sugar and vinegar" to be served after ten days on salt provisions under penalty of a fine of £20.¹⁴



The biscuit or hard-tack was the staple item of food for seamen, since the baking of fresh bread at sea was considered impracticable by the British naval authorities until the middle of the nineteenth century, even though British naval surgeons had been recommending the installation of an oven on board, such a Brodie's apparatus copied from the French. The daily ration of hard tack per day for each vessel was one pound in weight per man. Alexander Brodie, was born in 1732 in Edinburgh, Scotland. He served as an apprentice blacksmith before setting out to London to seek his fortune in 1759. In London, Brodie began

to produce household items such as fire gates and dampers. In 1767, Brodie and a partner named Richard Williams applied for and received a Royal patent for a fire stove. On the 8th December 1780, Brodie was issued a Royal Patent for a Ship's stove described as "*A New Ship Stove, Kitchen, Or Hearth, With A Smoak [sic] Jack And Iron Boilers, Which Was Preferable To Any Hitherto Discovered Or Made And Would Be Of Public Utility*".¹⁵ The stove is constructed of wrought iron with the fireboxes consisting of cast iron. There was a ventilator and associated copper hood and the entire stove was held together with nuts and screws. This design made it easy to disassemble for cleaning or to replace broken or damaged components. The stove had spaces for two separate fires. The stove came equipped with two spits that were long enough to roast a medium-sized animal such as a

¹³ N.H. Nicholas: *Dispatches and Letters of Lord Nelson*. Colburn: London, 1846, vol. VI, p.141-142; C. Lloyd, J.L.S. Coulter, *ibid*, p.247-252

¹⁴ C. Llyod, J.L.S. Coulter: *ibid*, p.115

¹⁵ *Alexander Brodie's Patent Stove*. <http://www.flpublicarchaeology.org/mardigras/artifacts/brodie/>

pig, a side of beef, lamb, or poultry. In addition, there were hotplates to keep small pots warm as well as a series of "cranes" or hinged arms that swung across the top of the stove and could handle larger pots. There were additional rails and stewing stoves. Finally, the stove had a closed ventilator under the fire box "for carrying off foul air" and was intended to go through the deck below the stove where it could "be conveyed to any part of the ship or where the sick people are kept". Other components of the stove include a water distiller used in the sick bay. The stove was fixed on short legs in order to raise it above brick or flagstones used to protect the deck timbers.



The Naval Bakery, Vittoriosa

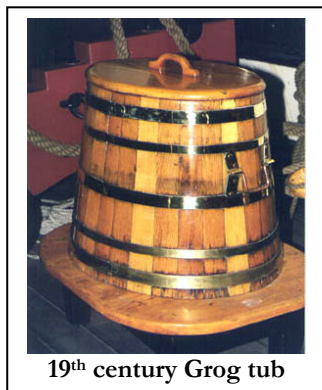
Malta's Naval Bakery at Vittoriosa designed to supply soft bread and hard tack to all the British Mediterranean Fleet, opened in 1848, was designed by William Scamp, an English Victorian architect and engineer, who became deputy director of works at the Admiralty in 1852, a post he maintained until his retirement in 1867. The building consists of three floors and is about 320 feet in length

and 130 feet in breath. Its building cost £30000, while the machinery cost a further £10000. The Bakery used steam power from two 25 horse-power engines fuelled by coal to wash, dry and grind the grain into flour. The engines were also used to power machinery to mix, roll and stamp out the biscuit. The prepared dough was passed under sheet rollers by which it was rolled into sheets 6 feet by 3 feet and about three-eighths of an inch thick. These sheets were then passed on the tables over rollers to the docking, or stamping machines, which marked the size of the biscuits and stamped them with the broad arrow. The machines further cut the sheets of dough into three. The sheets were then transferred to the 12 ovens, heated by side stoves. After baking the sheets are broken into biscuits as marked by the docking machine. The product was then sifted, weighed and sacked, each sack holding 112 lbs of biscuit. The siftings were sold every quarter for making puddings etc to Government Hospitals. Working around the clock, the bakery could achieve a maximum production of 30000 lbs of bread and biscuit a day. While hard tack was the stable diet on board ships, soft bread was issued to ships docked in the Grand Harbour.¹⁶

Malta also featured indirectly in the history of fresh baking of bread abroad. In the year 1845 Henry Jones, proprietor of the Western Biscuit Bakery at Bristol, took out a patent for making self raising flour. The blessings of this innovation were described by the medical journal *Lancet*. "The mariner, provided with a stock of Patent Flour, when thousands of miles of ocean cut him off from all intercourse with the abodes of man, can in an hour produce a loaf of fresh, wholesome bread, equal in appearance, texture and flavour to any manufactured by a West-end baker. This must be to him a delicacy of inestimable value: no longer will he be compelled to breakfast upon maggots, weevils and mouldy biscuits; but a hot load or a smoking twist will in future make him forget the privations attendant upon a mariner's life."

¹⁶ The Naval Bakery, Malta. *The Malta Times*, 21 January 1851, p.2-3; M. Bishop: Baking the bread of the early years. *The Malta Independent - First Sunday*, July 1994, 9:p.40-41; C. Lloyd, J.L.S. Coulter: *ibid*, p.102-105

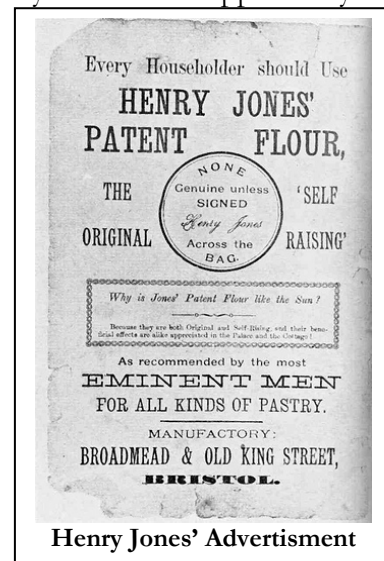
Jones subsequently sent 30 sacks of this flour as sample to the Victualling Office for trial abroad, but there appeared to be little response. He then invented a simple machine for preparing flour on board. This was put on the *HMS Porcupine* for trial and a favourable report was made two years later. However the Admiralty decline to opportunity to purchase this machine. Jones in 1849 asked for the machine to be returned back to him, and was informed, six years after he had originally sent the machine, that this had been traced to Malta where it had been destroyed. Compensation of £17 8^s was only made seven years after the trial after continuous pressure by Jones. The Henry Jones' Patent Flour – The Original Self Raising was only adopted by the Admiralty Victualling Office after the Crimean War.¹⁷



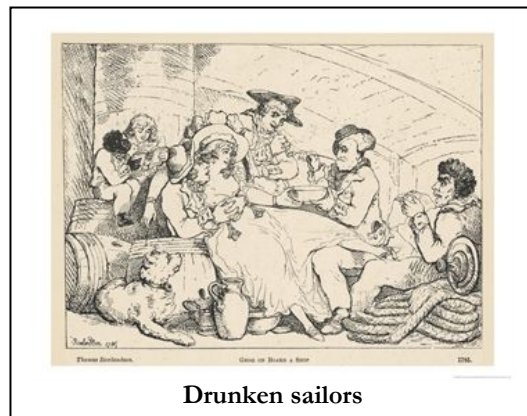
19th century Grog tub

Rum had always been a naval drink since beer and water did not keep well at sea, while gin was largely confined to the land or to the wardroom. This free item of naval diet gave rise to the vice of drunkenness, so that attempts were repeatedly made to decrease the spirit ration. In 1740 the rum ration was diluted with water, a mixture known as grog. The popularity of grog was slowly superseded by that of tea, cocoa or chocolate, though it never lost its traditional importance. As long as the war continued, it was considered unsafe to tamper with the spirit ration for fear of mutiny, but after the war good sense prevailed. In 1825, the daily ration of half pint rum was split into two rations served at dinner and supper. In addition 1 gallon of beer was distributed daily, with wine being substituted on foreign stations. In 1850 the quarter pint ration was itself halved and the supper issue abolished.

Heavy drinking, especially on shore, continued to be the habit of the sailor, though it diminished towards the end of the century when tea, coffee or soft drinks were fast supplementing grog. The drunken sailors did not receive any sympathy from the local populace. In a letter to the press in 1841, an old English resident complained of the treatment a sailor of a man-of-war had received from the police. He described these as man-handling the drunken sailor dragging him by his legs while on his back through the streets of Valletta. While suggesting the availability of a stretcher to carry the drunken individuals picked up by the police, he also made a plea for the control of the infamous



Henry Jones' Advertisement



Drunken sailors

¹⁷ K. Chivers: Henry Jones and the Admiralty. *History today*, 1960, 10:p.247-254; C. Lloyd, J.L.S. Coulter: *ibid*, p.104-105

shops whose proprietors often placed persons at the doorway to entice, encourage and force sailors to enter however unwillingly.¹⁸



The importance of wine to the Royal Navy in the Mediterranean is reflected by the contract signed by Lord Nelson in March 1800 with the Woodhouse firm to supply Marsala wine to the British Fleet in the Mediterranean. The Woodhouse business was set up by John Woodhouse in 1773 at Marsala on the western coast of Sicily. Woodhouse subsequently captured the wine-markets of England and America, but received a marked boost after signing the contract

to supply the British Fleet. When Sicily became threatened by French invasion, the Woodhouse wine-stores were transferred to Malta, where extensive storage facilities were made available at the *Lazzaretto*, Cospicua, Floriana, the *Sacra Infermeria* and the Valletta Old Slaves prison (1859). While the business subsequently was re-transferred to Sicily, the Woodhouse business still existed in Malta at least until 1923.¹⁹

A number of grog shops were licensed to serve spirits in Malta during the turn of the nineteenth century. The spirits sold by these shops were regularly checked by the Department of Health. The spirits sold in the second and third rate grog shops for nominal prices were generally manufactured in Malta and water was their chief constituent so that their percentage of alcohol was generally low. The small quantity of alcohol that was added to make up the liquor was generally of good quality. Water was also added to the wine sold resulting in marked dilution. No foreign colour was apparently added since the intense colour of the Sicilian wines could bear dilution. No standards relating to the alcohol content were established prior to the Third Sanitary Law of 1904. During that year, 9 of the 125 spirits sampled by the Department of Health were below the established levels and legal proceedings were instituted.²⁰



The advent of better food-preserving techniques and refrigeration, together with the installation of ship-ovens, allowed for the supply of a more varied wholesome diet to the sailors. Canning of meat in bottled form was invented by Nicholas Appert for the French navy in 1806, and trials with meat in tins were carried out by Messrs Donkin and Hall in the Channel Fleet in 1813. Because of its French origin, the early tins produced by Donkin and Hall were marked with the word "*bouilli*", hence the name "bully beef". After these trials, the British took the lead in the canning industry, after the French had shown the way; but in the second half of the nineteenth century it became virtually an American industry. By 1831

preserved food became a regulation item in the medical comforts of a ship, but it was not

¹⁸ C. Lloyd, J.L.S. Coulter: *ibid*, p.93, 95-96; Anon.: The Hell-Shops. *The Malta Times*, 5 December 1841, p.2

¹⁹ *The Malta Times*, 23 March 1900; *The Malta Times*, 22 September 1859; M. Ellul: The Sacra Infermeria since 1800: A historical survey. *Maltese Medical Journal*, 1989, 1(3):21

²⁰ T. Zammit: The Laboratory. Public Health Department. *Report for 1897*. Malta Chronicle: Malta, 1898, Appendix P, p.3; T. Zammit: The Laboratory, Public Health Department. *General Health Report for 1904-5*. *Malta Government Gazette supplement*. 20 October 1905, 4854:xliv

until 1847 that canned food became a part of the ordinary ship's diet. Food-freezing is more recent in origin than the canning industry. The freezing process was used commercially for the first time in 1842, but large scale food preservation by freezing began in the late 19th century with the advent of mechanical refrigeration.