

Naval Medicine

'A vitamin-deficient diet, lack of hygiene, and the environmental stress and tropical infections of long voyages were soon manifested in characteristic sea diseases which, together with the injuries of naval voyages demanded a permanent naval medical service manned by doctors training in both surgery and physic.' (James Watt 'Some forgotten contributions of naval surgeons' Journal of the Royal Society of Medicine Volume 38 September 1985 pp. 753-762 from which the following is extracted). Several major advances in medicine were made by surgeons and doctors based at Haslar Hospital. Lancelot Haire in 1785 ended the convention of leaving ligatures long and thus terminated a potential source of infection. "James Lind was perhaps the greatest of all naval surgeons, and his death in comparative obscurity illustrates the fate of highly original thinkers dependent on powerful and unreceptive patrons.....The controlled clinical trial is usually considered to be a comparatively modern idea, yet it has been used in the navy for over 200 years." The pattern was established in 1747, when he took to sea in HMS Salisbury twelve precisely matched cases of scurvy, placed them on a scorbutic diet and gave each pair of patients a popular remedy. The only pair to recover had been given oranges and lemons (Lind 1753 A Treatise of the Scurvy Edinburgh p.191). He evolved a method of reducing lemon juice to small bulk suitable for carrying in ships' boats and devised a durable survival ration of animal and vegetable concentrates. It is probable that his research on nutrition was responsible for 'portable soup' made from animal offal and containing a high concentrate of vitamin A (Lind 1762 An Essay on the Most Effectual Means of Preserving the Health of Seaman London pp29). Night blindness, often responsible for wrecks at sea, seems to have disappeared from the Navy after this and did not reappear until the Admiralty, failing to see the implications, withdrew it from ships in the mid nineteenth century. It was 48 years after Lind had conclusively demonstrated that lemon and orange juice could cure and prevent scurvy before a reluctant Admiralty could be persuaded to make a general issue to the fleet. That was only because the more socially acceptable Sir Gilbert Blane endorsed Lind's work. Within two years scurvy had virtually disappeared, and Carré (1976 La Revue Maritime 310 pp.27-4), the French medical historian, believes that Lind, by providing British admirals with fit men, contributed decisively to Napoleon's defeat.



James Lind 1716-1794

Typhus was similarly eliminated by Lind's measures and the incidence of malaria and yellow fever drastically reduced by his preventative proposals. Cockburn – the Stuart physician of the fleet in 1696 - Lind, Blane, Trotter and Roberson all recognized that Typhus fever was brought on board in the infected clothing of new recruits, and they advised segregation, personal hygiene and a naval uniform. The Admiralty turned a deaf ear and preferred the economic catastrophe of a huge annual loss of trained manpower to modest financial outlay on the uniform suggested by its surgeons. Despite the backing of Lord Barham, Nelson's First Lord of the Admiralty, it was 1857 before a uniform was decreed necessary, and then not so much on health grounds as to prove the Navy with a better image. The differences between 'wet' beriberi and the 'dry' type found only in the Pacific had been observed by naval surgeons for centuries, causing Lind to point out some inconsistencies in scurvy's

course and behaviour (1753 A Treatise of the Scurvy Edinburgh p. 191). Lind noticed the connection between mosquito bites and malaria and yellow fever in 1754. He was a powerful advocate of the use of quinine, then in the form of cinchona bark, for the prevention and cure of malaria, at a time when others suggested that quinine was a dangerous drug only to be used when purging and bleeding had caused a remission. Lind's advice was heeded by his powerful disciples Blane and Trotter, and their propaganda saved thousands of lives, particularly during the anti-slavery patrols of the West Coast of Africa during the nineteenth century which cost Britain the flower of her seamen. A naval captain, W F W Owen (1833) observed that 'the first attacked with the fever were always those who had suffered most with mosquitoes'. He believed that to bleed was to kill that only cinchona bark could cure. Lind's interest in lifesaving led him to experiment with methods for the distillation of sea water in emergency.

Many of Lind's observations were nevertheless overlooked: his recognition of the role of formites and apparently carriers in hospital infections, his emphasis on upon a high energy-protein diet with a variety of vitamin-rich foods and a high fibre content in the form of wholemeal and bran (Lind 1777 Holograph Pharmacopoeia of Haslar Hospital: Regulations Respecting the Physical Patients. Pharmaceutical Society of Great Britain, London pp. 63-105). The role of dietary fibre in maintaining health has only now been recognized through the observations of a modern naval surgeon T L Cleave (1974 The Saccharine Disease John Wright Bristol) disregarded by contemporaries until his theories were universally accepted.

Lind was also the first to point out the clinical signs of hypothermia following exposure and immersion, the importance of rapid rewarming and fatal consequences of giving alcohol. He proposed intermittent chest compression and mouth-to-mouth resuscitation for the apparently drowned, and lightening conductors for ships in order to reduce the high mortality from electrical burns (Lind 1762 An essay on the Most Effectual Means of Preserving the Health of Seamen London pp.18, 29, 41). He was a pioneer in hospital reform, with standards of cleanliness, patient care, dispensing safeguards and control of infection to rival modern ideals (Lind 1777 op.cit). In 1742 John Atkins anticipated the modern postgraduate medical centre when he proposed that a wing of the Naval Academy at Portsmouth be taken over to provide a training facility for the naval surgeon, with a pathological museum, dissecting room, a theatre for monthly lectures, 'a small kitchen, with a little Parlour or two to withdraw...after business'. Such meetings first appear to have been held in British hospital ships under Cockburn's influence, but in 1747, after the medical disasters of Anson's voyage, an 'Association of the Navy Surgeons of the Royal Navy of Great Britain' was founded in an attempt to raise the standards of medical practice (G C Peachey 1924 'A Memoir of William and John Hunter. William Brendon, Plymouth pp. 79-89). It anticipated Britain's first postgraduate medical society, the Medical Society of London, by 26 years. These initiatives were all shortlived. Yet few of these observations and achievements influenced contemporary medical practice, while the danger of giving alcohol to cases of hypothermia has only been recognized in the 1970s.

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