

Official testimonies of the benefits arising from the essence or extract of malt : as used in the British Navy, for making wort at sea consisting of short extracts from the best writers; from medical journals kept on board the King's ships; and from the testimony of surgeons ... / prepared and sold by Holdsworth & Barnard ... under the encouragement and protection of His Majesty's letters patent, granted to the late Mr. Thornton.

Contributors

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OFFICIAL TESTIMONIES
Of the Benefits arising from the
Effence or Extract of Malt,
AS USED IN THE
BRITISH NAVY,
For making WORT at SEA:

CONSISTING OF
Short Extracts from the best Writers; from Medical Journals kept on Board the King's Ships; and from the Testimony of Surgeons appointed by the Lords of the Admiralty to examine and report its Virtues, in the Prevention and Cure of the SCURVY and other putrid Diseases.

PREPARED AND SOLD BY
HOLDSWORTH & BARNARD,
(N^o 80)

EAST-SMITHFIELD,
Under the Encouragement and Protection of
HIS MAJESTY'S LETTERS PATENT,
GRANTED TO THE LATE
Mr. THORNTON.

L O N D O N:

Printed by FRYS and COUCHMAN, Worship-Street, Upper-Moorfields,

M.DCC.LXXXIII.

THEY also keep ready prepared, a similar Extract
of MALT and HOPS, for making Beer of any
Degree of Strength, and in any Climate, with prepared
YEAST for its Fermentation at Sea.

U S E
OF THE
ESSENCE of MALT

In the Prevention and Cure of the
S E A - S C U R V Y,
AND OTHER
P U T R I D D I S E A S E S.

THE following pages are not intended to give any new information to MEDICAL gentlemen; but merely to draw together into one point of view, such testimonies as have already been given by men of the first medical abilities, respecting the use of Wort in the Sea-Scurvy, and other diseases of a putrid nature. This short account, it was presumed, would not be wholly unacceptable to gentlemen engaged in the active scenes of a marine life, and who have a more immediate concern in attending to the subject, on account of its great importance in the naval department.

The

The ingenious and celebrated Dr. Macbride, and after him, our most eminent physicians, chemists, surgeons, and experimental philosophers, are perfectly agreed, that whatever be the peculiar NATURE of this malignant disease, the frequent use of vegetables is the most certain and efficacious means hitherto discovered, both for its PREVENTION and CURE. It has also been fully proved by abundant experience in the royal navy, &c. that fresh WORT is a liquor similar to the recent juices of sweet vegetables, and is equally effectual, being mild, saponaceous, and of an aperient nature; that, when mixed with the animal juices, it will readily ferment, and is capable of producing a sufficient quantity of the antiseptic vapour, the only proper agent for restoring soundness and vigour to the whole system.

The following quotations are made from Dr. Macbride's Essays, first published in 1767. After a series of experiments and just reasonings on the respective powers of antiseptics, he concludes thus, page 160,—“What proves almost to a demonstration the antiseptic power of the fermentable substances, is the cure of the Sea-Scurvy. This disease, wherein the whole mass of fluids is dissolved and corrupted, cannot be cured by any other means than by throwing in a large quantity of New Air, and this must be done in the way of diet; it must be furnished from things that can be
taken

taken into the body by pounds, and not in ounces or drachms; and therefore such vegetables are found to be the most powerful antiscorbutics, of which the patient can take the largest quantity without occasioning sickness or other disturbance. In the Scurvy the digestive organs luckily retain their full powers, and therefore they can turn the fermentable substances taken into the body to their own proper advantage; and hence this disease scarce ever fails of being cured, provided the requisite materials be supplied."

Page 162,—“As the cure of the Scurvy then, seems to depend so much on the fermentative qualities in the remedies made use of, it is not impossible but other things, as well as PERFECTLY FRESH VEGETABLES, may be found to answer this salutary purpose.”

“I imagine that I have found out such a substance. I have had no opportunity indeed of putting it to the trial*; but as I am firmly persuaded that it will be found of great service, not only in the Scurvy, but in other putrid diseases, at sea where fresh vegetables are not to be had, I cannot refrain from throwing out a proposal, for trying NEW METHODS of preventing, and possibly of curing those destructive diseases, that take their rise from putrefaction, in situations where the unhappy patients are destitute of the proper means of help.”

* This was written in 1764.

Page 169,—“ In consequence of this persuasion it occurred to me, that as there are vegetable substances, which though not perfectly recent, are yet capable of fermentation, such in particular as COMMON MALT; that this, if taken in the way of medicine, would in all probability produce effects similar to those produced from green vegetables, and consequently cure the Scurvy; and as MALT can be preserved sound for a considerable length of time, it might be carried to sea, and there kept in order to make WORT occasionally as it might be wanted; and thus prove a remedy always in readiness against that fatal disease. The more I thought of it, the more I became convinced of the likelihood of its succeeding.” Accordingly the doctor was very solicitous to have it fairly tried.

The following extracts are merely from narratives of voyages, in king's ships, or on stations in which the WORT was put to a fair trial; and the result reported with the utmost candour and fidelity by gentlemen, whose names will always do honour to their profession.

After many unsuccessful attempts to obtain a fair trial of the efficacy of the Wort on scorbutic patients in the royal hospitals and in the navy, MALT was at last admitted on board his majesty's ship the *Jason*, Capt. John Macbride, in its voyage to Falkland's Island, which commenced

in October 1765, and ended in March 1767. Mr. Alexander Young, surgeon of the above ship, remarks in his journal, that this voyage was performed with the loss of three men only, and that none of the three had any scorbutic symptoms. Previous to his account of the use of the Wort, Mr. Young observes, "That seamen in general are so very averse to every thing in the way of experiment, that he could not have prevailed on the men to take the Wort, if they had not observed the officers drink it repeatedly without inconvenience by way of preservative." Capt. Cook and other commanders have made the same complaint, and it is feared there will always be too much occasion for it.

Extracts from Mr. YOUNG's Journal.

"In the four following cases the patients had no aid from fresh vegetable diet.—The four all began the WORT at the same time.—The Wort was made fresh every day in the proportion of three measures of boiling water to one measure of ground Malt; it was allowed to stand close covered till cold, and then strained off."——"William Lardner, aged twenty-nine, formerly of a good habit of body, complains of great lassitude:—his face pale and yellowish, his gums are a little swelled and spongy, his breath is very offensive, his legs swell and pit when pressed with the finger; they are covered
with

with blue spots of different sizes like bruises, with two ulcers which discharge a thin bloody ichor, and have a black mortified appearance; his legs are more swelled at night than in the morning; he is generally costive; his appetite is good, and his pulse pretty regular.—February 1, gave him half a pint of the Wort morning and evening.—3, Gave a pint in the morning and half a pint in the evening.—7, Gave a pint morning and evening.—8, The Wort purged him last night, but he took the same quantity to day without having any such effect. Finds himself something better.—12, Gave him a pint in the morning, another at noon, and a third at night.—20, He looks healthier, his legs are not so much swelled, the ulcers seem inclinable to heal, having lost that black bloody appearance. Gave him a quart of Wort in the morning, a pint at noon, and another at night.—28, He finds himself greatly better, the ulcers being almost healed, and the swelling gone, except a little in the evening; the skin is peeling off his legs. Gave him a quart in the morning, another at noon, and another at night.—March 6, Has no complaints, and returns to his duty, but continues to drink the Wort, the quantity of which is to be lessened by degrees, until he leaves it off entirely.”

“ John Carrol, aged thirty-five, formerly healthy, brought a Pox with him from England, which has eluded the force of all the medicines given him,
owing

owing perhaps to the man's own negligence and intemperance, joined to the scorbutic habit which he acquired during the winter; but got better by drinking the Wort, eating wild celery, and using exercise on shore: the calves of his legs were quite indurated and black at that time.—February 1, He has now several ulcers upon him in his legs and arms, which are very offensive; a large hard swelling on his cheek; his testicles are swelled, hard, and quite insensible; his gums are rotten, black, and bleed frequently; his breath stinks horribly; he is quite emaciated and ready to faint every step he takes; he has no appetite, is greatly dejected, and his pulse very low. The ulcers were dressed dry. Gave him half a pint of the Wort in the morning, which directly brought on a looseness, with fainting, which however soon stopped, on his taking some doses of the electuarius escordis, dissolved in cinnamon water, together with mulled wine. Gave him twenty drops of the acid elixir of vitriol along with his Wort, and three times a day a glass of the following bitter wine.

R. Cort. Peruvian. crasse pulv. uncias duas—
Limonum secunciam vini Madeirens. lib. duas. M.

3, He is better; gave him half a pint of Wort twice a day.—10, He finds himself stronger and not so liable to faint. The swelling on his cheek

looks red and inflamed. Applied a poultice of oatmeal with a little oil.—20, Stronger, has a better appetite; ulcers look better; the tumor on his cheek broke of itself; the quantity of matter but small, blackish, and very offensive. Gave him a pint of Wort twice a day.—March 1, Continues mending; his cheek has degenerated into a foul looking ulcer like the rest. Gave him three pints of Wort in the day.—10, Has almost quite recovered his strength; eats heartily. The ulcers begin to discharge a thicker matter, and have not so bad an appearance.—16, Continues to mend. Gave him two quarts of Wort in the day.—20, Arrived in the Downs, he is greatly mended in his appearance, and health in general.”

“William Rogers, marine, aged twenty-four, of a thin weakly habit of body, has been sickly all winter.—February 1, Complains of great weakness, pain, and swelling of his knees, his legs are drawn up so that he cannot stretch them without pain; his face is of a dark yellowish colour; he is quite emaciated, being scarce any thing but skin and bone; his pulse low and rather quick; he is generally loose. His knees were fomented twice a day with the common fomentation, to which was added an eighth part of vinegar; and rubbed with a camphorated liniment. He likewise took the bitter wine, and half a pint of Wort twice a day.—6, Gave him half a pint thrice a day.—

day.—10, Gave him a pint twice a day.—11, The Wort purged him last night, but ceased immediately on taking twenty drops of tinctura thebaica in two spoonfuls of cinnamon water.—12, Gave him half a pint three times a day.—18, He is much better, can stretch out his legs, and walk pretty well. Gave him two pints and a half in the day.—26, Continues mending. Gave him a pint three times a day.—March 9, Now finds himself pretty well, and is returned to his duty, but still continues to take the Wort in a smaller quantity.”

“ William Waters, aged thirty-six, a strong man, and formerly very healthy, was afflicted with scorbutic complaints all winter. February 1, Complains of weakness, falling away in his flesh, and ulcers on his legs; dressed the ulcers dry, and gave him three half pints of the Wort in the day.—6, Gave him a pint thrice in the day.—10, Gave him two quarts in the day.—20, Gave him three quarts in the day. March 10, Ulcers healed up, has no complaints, and looks remarkably fat and fair.”

Thus far the journal of Mr. Young, Surgeon of his Majesty's ship the Jason.

The next fair trial of the Wort was made, as we may say, in the face of the whole maritime world, by Capt. Cook, that most able and humane navigator, in his second voyage round the world,
in

in his majesty's ship the Resolution, which commenced in 1772, and was protracted to three years and eighteen days, without losing so much as one man by the Scurvy, or even any instance of such a degree of it as is described in the preceding journal, doubtless greatly owing to the earlier use of the Wort by way of prevention. The following account is in the words of Capt. Cook, and of Mr. Patten his most excellent surgeon:

Cook's voyage, vol. 1, p. 6.—“ I now made three puncheons of beer of the inspissated juice of Malt—by the heat of the weather and the agitation of the ship, both that with hops, and that without, were in the highest state of fermentation, and had hitherto evaded all our endeavours to stop it. If this juice could be kept from fermenting, it certainly would be a most valuable article at sea.”*

Page 29,—“ Some of our people beginning to have symptoms of the Scurvy, the surgeons began to give them fresh Wort every day, made from the Malt we had on board for that purpose. One man in particular was highly scorbutic, and yet he had been taking of the rob of lemons and oranges for some time, without being benefited thereby.

Page 68. May 26, 1773, “ After having been one hundred and seventeen days at sea, in which

* The Essence of Malt now in use is perfectly secure from this inconveniency.

time we had sailed three thousand six hundred and sixty leagues without having once seen land : after such a long continuance at sea, in a high southern latitude, it is but reasonable to think that many of my people must be ill of the Scurvy. The contrary however happened. Mention hath already been made of sweet Wort being given to such as were scorbutic. This had so far the desired effect, that we had only one man on board that could be called very ill of this disease ; occasioned chiefly by a bad habit of body, and a complication of other disorders. We did not attribute the general good state of health of the crew wholly to the sweet Wort, but to the frequent airing and sweetening the ship by fires, &c.* we must also allow portable broth and four krout to have had some share in it."

Page 173,—“ I sent on board the Adventure to inquire into the state of her crew, having heard that they were sickly ; and this I now found was but too true. Her cook was dead, and about twenty of her best men were down in the Scurvy and Flux. At this time we had only three men on the sick list, and only one of them attacked with the Scurvy. Several more however began to shew symptoms of it, and were accordingly put upon

* It may however be observed, that Com. Anson's ship, the Centurion, was not neglected in point of cleanliness, &c. and yet the dreadful effects of the Scurvy on his people in that voyage is generally known.

the Wort, marmalade of carrots, and rob of lemons and oranges.—I believe there was hardly a man in the ship that did not attribute our being so free of the Scurvy, to the beer and vegetables we made use of at New Zealand.”

Page 152,—“When we put in here (at Otaheite) the Resolution had but one scorbutic man on board, and a marine who had long been sick, and who died the second day after our arrival of a complication of disorders, without the least mixture of the Scurvy.”

Page 305,—“After having been nineteen weeks at sea, and living all the time upon salt diet, we could not but want some refreshment, although I must own, and that with pleasure, that on our arrival here (at the Marquesas Islands) it could hardly be said we had one sick man, and but a few that had the least complaint. This was undoubtedly owing to the many antiscorbutic articles we had on board, and to the great attention of the surgeon, who was remarkably careful to apply them in time.”

At the conclusion of vol. 2, he says,—“Having been absent from England three years and eighteen days, in which time, and under all changes of climate, I lost but four men out of one hundred and eighteen, and only one of them by sickness. It may

not be amiss at the conclusion of this journal, to enumerate the several causes to which, under the care of Providence, I conceive this uncommon good state of health experienced by my people was owing. Extraordinary attention was paid by the admiralty in causing such articles to be put on board, as either by experience or suggestion it was judged would tend to preserve the health of the seamen."

"We were furnished with a quantity of Malt, of which was made SWEET WORT. To such of the men as shewed the least symptoms of the Scurvy; and also to such as were thought to be threatened with that disorder, this was given from one to two or three pints a day each man; or in such proportion as the surgeon found necessary, which sometimes amounted to three quarts. This is without doubt one of the best antiscorbutic sea medicines yet discovered, and if used in time, will, with proper attention to other things, I am persuaded, prevent the Scurvy from making any great progress for a considerable while. But I am not altogether of opinion that it will cure it at sea."*

Sir John Pringle, in a discourse on some late improvement of the means of preserving the health of mariners, delivered at the anniversary meeting

* That the Scurvy has been cured by Wort at sea, appears by the foregoing medical journal of Mr. Young in the *Jafon*.

of the Royal Society, November 30, 1776, speaking largely of the amazing healthfulness of Capt. Cook's people in so long a voyage, says "Here (in Capt. Cook's narrative) are no vain boastings of the empiric nor ingenious, and delusive theories of the dogmatist, but a concise, an artless, and an incontestable relation of the means by which, under the Divine favour, Capt. Cook, with a company of one hundred and eighteen men, performed a voyage of three years and eighteen days throughout all the climates, from fifty-two degrees North, to seventy-one degrees South, with the loss of only one man by a distemper, and that without the least symptom of the Sea-Scurvy." With this Sir John contrasts the expedition of Com. Anson, of which he says, "It is well known that soon after passing the Straits of Le Maire, the Scurvy began to appear in his squadron; that by the time the Centurion had advanced but a little way into the South-Sea, forty-seven had died of it in his ship; and that there were very few on board who had not in some degree been affected with this distemper, though they had not then been eight months from England. That in the ninth month, when standing for the island of Juan Fernandes, the Centurion lost double that number, and that the mortality went on at so great a rate in the Centurion, that before they arrived there, she had buried two hundred, and at last could muster no more than six of the common men in a watch capable of doing duty.

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This was the condition of one of the three ships which reached that island; the other two suffered in proportion. Nor did the tragedy end here; for after a few months respite, the same fatal disease broke out afresh, and made such havock, that before the Centurion (which now contained the whole surviving crew of the three ships) had got to the island of Tinian, there died sometimes eight or ten of a day, insomuch that when they had been only two years on their voyage, they had lost a larger proportion than of four in five of their original number, and by the account of the historian, all of them, after their entering the South-Sea, of the Scurvy. Yet nothing appears to have been neglected for preserving the health of the men, that was then known and practised in the navy."

Captain Cook begins his list of stores with MALT, of this, he says, *was made SWEET WORT, and given not only to those men who had manifest symptoms of the Scurvy, but to such also as were judged to be most liable to it.* Dr. Macbride, who first suggested this preparation, was led, as he says, to the discovery by some experiments that had been laid before the Royal Society; by which it appeared that the air produced by alimentary fermentation was endowed with a power of correcting putrefaction. The fact he confirmed by numerous trials, and finding this fluid to be *fixed air*, he justly concluded that whatever substance proper

for food abounded with it, and which could conveniently be carried to sea, would make one of the best provisions against the Scurvy, which he then considered as a putrid disease, and as such to be prevented or cured by that powerful kind of Antiseptic. Beer, for instance, had always been esteemed one of the best Antiscorbutics; but as that derived all its fixed air from the Malt of which it is made, he inferred, that Malt itself was preferable in long voyages, as it took up less room than the brewed liquor, and would keep longer sound. Experience has since verified this ingenious theory, and the Malt hath now gained so much credit in the navy, that there only wanted so long, so healthful, and so celebrated a voyage as this, to rank it amongst the most indispensable articles of provision. For though Capt. Cook remarks that a proper attention to other things must be joined, and that he is not altogether of opinion that the Wort will be able to cure the Scurvy in an advanced state at sea; yet he is persuaded that it is sufficient to prevent that distemper from making any great progress for a considerable time, and therefore he does not hesitate to pronounce it one of the best Antiscorbutic medicines yet found out.

Mr. Patten, Surgeon of the Resolution, has the following confirmation of this truth, in his medical journal of the voyage. "I have found the Wort of the utmost service in all scorbutic cases

cases during the voyage. As many took it by way of prevention, few cases occurred where it had a fair trial ; but these, however, I flatter myself will be sufficient to convince every impartial person, that it is the best remedy hitherto found out, for the cure of the Sea-Scurvy : and I am well convinced, from what I have seen the Wort perform, and from its mode of operation, that if aided by portable soup, four krout, sugar, &c. the Scurvy, that maritime pestilence, will seldom or never make its alarming appearance amongst a Ship's crew, on the longest voyage, proper care with regard to cleanliness and provisions being observed."

"Capt. Cook told me (Sir John Pringle) that the Malt held out sufficiently good for the two first years ; that in the third, having lost much of its taste, he doubted whether it retained any of its virtues. Mr. Patten however observed, that though the Malt at that time appeared much decayed, yet nevertheless he had still found it useful, when he employed a larger proportion of it to make the infusion."

R E M A R K S

On the foregoing JOURNALS, &c.

AS these narratives establish it as an unquestionable fact, that Wort made from Malt is a most powerful Antiseptic, and as such both a preventive and cure of the Sea-Scurvy ; it only remains to shew by the like evidence of *Experience* that the Extract of Malt used in the royal navy, is of equal power for the same important purpose, while it obviates every inconveniency that attended either the inspissated juice, or the Malt itself with which Capt. Cook was furnished.

The inspissated juice Capt. Cook observes, could not be kept from fermentation, consequently from perishing, for any considerable time in a warm climate : even the MALT, though it continued sound a much longer time, yet before the end of the voyage was greatly impaired and needed a much larger proportion to produce a Wort of any strength from it. To this may be added the difficulty of preserving it from the rats, the great stowage wanted for a quantity sufficient for the service of a large ship's company, together with a vessel or vessels to serve as a mash-tun for the infusion, and that in all weathers. These in-

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conveniencies might discourage the use of Wort as a common beverage in the navy.

It was from such considerations as these, joined with a desire to serve mankind, that the late Mr. Thornton attempted an improvement on Dr. Macbride's idea, by concentrating the virtues of Malt into a solid hard substance, taking incomparably less stowage than Malt, and that would receive no injury from any length of time in any climate ; but be capable of being made into Wort in any quantity in a few minutes, by only a solution of it in hot water.

When Mr. Thornton was satisfied that he had succeeded in his attempt, and, by a new and elegant mode of preparation, produced a pure Extract replete with all the vegetable qualities of the Malt, he transmitted to Dr. Macbride two casks, one Malt and Hops, the other Malt only, for his inspection, with a request he would communicate it to his medical friends in Dublin.

The first letter to Dr. Macbride, was written by Mr. Crawford, Surgeon, in London, informing him of the two kegs of Essence.

Dr. Macbride's answer, dated Dublin, April 29, 1778.

“ The Two kegs of Effence were brought me lately. Being exceedingly hurried with business at this time, I have handed them over to my friend Dr. Patten (who was surgeon to Capt. Cook's ship last voyage) and he has made trial both of that with hops, and that only with Malt. The simple Extract of Malt answers every thing that you said of it, and makes excellent Wort, perfectly well flavoured, and of the true saccharine sweetness, free from all smoky or burnt taste, which I expected, as all extracts hitherto made are so liable to be burnt. In short I was most agreeably surpris'd and charmed with it, and so is Dr. Patten, who says that a solution of this Extract, of only two ounces to a quart of water, makes Wort as strong as any that he ever prepared on the voyage where it was found of such use. I think the inventor of this method of preparing extracts of such purity and so free from empyreuma deserves every possible encouragement, and I most sincerely wish him success. As to the beer made with the Effence of Malt and Hops, though we have brewed, yet it is not fit for drinking, though from its flavour during its state of fermentation, I have no doubt of its turning out exceeding good. I yesterday dined with some of the first people of the faculty, and dissolved some of the
simple

simple Extract in their presence. They were all delighted with the Wort which it produced, and Dr. Hutcheson, the present president of our College of Physicians, promised to write to commissioner Bate on this subject. I am also commissioned to order half a dozen Kegs of the simple Extract, as they mean to introduce the Wort into the hospitals or perhaps private practice."

From the same, May 6, 1778.

"I was very happy in being able to say so much in favour of the Effence of Malt, and I do not see any reason why it should not produce all the good effects that have been found to proceed from the use of the fresh infusion. The only thing to be dreaded, is when this Extract comes into common use, those who prepare it will be tempted to do it either in a careless or unfair way."

From the same to Mr. Thornton. Dublin, July 4, 1778.

"I said no more in my letters to Mr. Crawford than what I thought your method of preparing extracts deserved, and if you think any sanction can be derived from making use of my name, you are heartily welcome. As to the Extract of Malt, I have very little doubt of its keeping sound for
any

any length of time that can ever be required. —I had two sorts of beer brewed, the one in the proportion of two pounds of Extract to three gallons of water, the other four pounds of Extract to the same quantity of water. The smaller sort has turned out extremely well, and makes a very pleasant beverage. I have bottled it to try how long it may be kept. The strong I have not yet tasted since I bunged it up after the fermentation ceased ; intending to let it lie three months from the time it was brewed.

Dr. Hutcheson to J. Bate, Esq;

“Some time ago Dr. Macbride shewed me a specimen of Extract of Malt prepared by Mr. Thornton. The excellent manner of preparation surpris'd me and every gentleman who saw it. We tasted it in solution, and also had some of it fermented and made into beer. As I am thoroughly convinced that Wort is superior to any other portable substance yet discovered, both as a preservative against, and as a medicine in the Sea-Scurvy, I think Mr. Thornton's preparation exceedingly valuable, and that he is highly deserving of public notice. Dr. Macbride has requested me to write you a few lines on this subject, thinking it might be of use to have his sentiments corroborated by others. The principal gentlemen of our profession here have seen and examined

it as we did, and unanimously joyn with us in opinion concerning it.

In a following letter to the same gentleman, dated Dublin, July 30, 1778, he says,

“ Mr. Thornton is at full liberty to make use of my name if he can suppose it will be in any way serviceable to him. I think every man of science must feel a sensible pleasure in promoting so valuable and important a discovery.”

In consequence of the approbation given by the above gentlemen, as also of some others of the greatest eminence in the medical profession, the Effence of Malt was introduced into the navy, with strict orders from the Lords of the Admiralty to the surgeons of the several ships, to give it a fair trial, and report to them the result.

Herbert Sawyer Esq; Commander of his Majesty's ship the Boyne, testified his high satisfaction with the Effence, by enclosing the two following letters to the Lords Commissioners of the Admiralty, and at the same time referring the honourable Commissioners for victualling his Majesty's navy to those two letters containing an exact account of the experiments made by their order.

D

Boyne,

Boyne, at Sea, June, 5, 1779.

“As to the Effence of Malt, as far as relates to medical cases, I refer you to the copies of two letters enclosed to my Lords Commissioners of the Admiralty, from the surgeons of the Prince of Wales and the Boyne.”

Copy of a letter from Mr. John Fidge, surgeon of the Prince of Wales. St. Lucia, April 11, 1779.

“Sir,

The great benefit I have seen result from using the Wort made from the Extract of Malt, leads me to speak in its praise, and to recommend it not only as particularly adapted to the cure of scorbutic cases, but also of the greatest utility in almost every convalescent state at sea, where fresh vegetable juices cannot be procured. The few scorbutics in the Prince of Wales having recovered very fast, soon after you was so obliging as to put it into my hands for trial: at the same time, as there were many convalescents in the ship with various complaints, it occurred to me (having for some time drunk freely of it myself) to give it both to the physical and surgical patients. I could have no doubt of its preference to spirits, though diluted with water: indeed a moment's reflexion on the nature of the seamen's common food is sufficient. I found the success to answer my expectations. Wounds and ulcers healed kindly, and the sick in general gained by it a drink palatable, medicinal,

medicinal, and nourishing. Its immediate operation was the producing a gentle laxity of the bowels, ever salutary here, and therefore in many cases it totally superseded the use of nauseous medicines, perhaps otherwise indispensable, but ill agreeing with a stomach already weakened, and scarce able to bear nourishment. Costiveness in seamen is frequently the foundation and generally the forerunner of three-fourths of the diseases they are liable to, particularly the Scurvy, their most direful enemy. The Wort early made use of, will obviously check and abate the approach and violence of the disease: and if the circumstances under which the patients labour, are not in a very high degree disadvantageous, I am firmly persuaded it will complete a cure. In those cases where it cannot, I am inclined to believe (from an experience of more than twenty years in which I have been immediately conversant with the diseases of seamen) that the medicine chest of the navy will afford no aid. Bilious attacks endemial in the West-Indies, and not the least amongst diseases, very obstinate, are generally preceded by costiveness, and give long warning; here the Wort freely taken is admirable in its effects.

“ In the Flux produced by obstructed perspiration, the drinking bad water, and more commonly of ardent spirits, the cure must be effected by first giving laxative medicines, which will dislodge and
carry

carry down the acrid matter which lies irritating and corroding the intestines, producing the most excruciating pains. In the early stage of the disease, the Wort is an excellent assistant, lubricating and defending the abraded sides of the intestinal canal in its passage. I should dwell much longer on its virtues, was I not afraid of trespassing too much upon your time. I really consider it as the SEAMAN'S PANACEA, and wish to see it introduced, not only as a medicine, but also to be daily given to those still in health who choose so salutary a beverage. I have always added some brown sugar to the infusion, in the proportion of one pound to three gallons; this quickens it, and renders it pleasanter, besides coming into every intention of the Wort. With this addition it comes as near that which is made with fresh Malt as possible.

I am, &c.

JOHN FIDGE."

To Herbert Sawyer, Esq; Commander
of his Majesty's ship the Boyne.

[A true copy, I. Watts.]

Copy from Mr. J. Sprunt, Surgeon of the
Boyne. St. Lucia, May 18, 1779.

Sir,

"From the time of the Essence of Malt being
put on board this ship for your trial of its efficacy
in

in the Scurvy, there has occurred near thirty instances of that disorder, most of them attended with livid spongy gums, Œdematous swellings of the legs, livid blotches, and in a few, rigid joints with pectoral complaints. In all of them the Wort has been used with the greatest success. It was administered in the quantity of one pint morning and evening, which usually procured them two or three stools in twenty-four hours, and also increased the flow of urine. And although other medicines, as bitter infusions, with elixir of vitriol, &c. were made use of at the same time, I would attribute their perfect recovery chiefly to the use of the Wort.

“ Its use likewise was attended with the most visible good effects in several trials I made with it, on some of the people afflicted with obstinate ulcers, which discharged a thin fetid mater; as it always rendered the discharge thick and mild, and thereby occasioned their healing kindly.

“ It also proved successful in preventing this disorder, in several trials I made with it, where from a pale and bloated countenance, inactivity and lassitude, with heaviness of the inferior extremities, there was reason to fear the indisposition was beginning; therefore I am inclined to believe it will not only prevent this disease at sea, but from the experience I have had of its effects in the first
stage

stage of this disorder, as described above, that it will in most cases effect a recovery; unless where it is deeply rooted in the constitution, and that then it will prevent it from rising to any great height. It may be necessary to observe that the Effence appears now to be as good, and of the same consistence, as it was when first put on board.

I am, &c.

J. SPRUNT."

To Herbert Sawyer, Esq;

In consequence of these and many like testimonies, the Lords Commissioners of the Admiralty ordered the Effence of Malt to be served not only to ships on foreign service, or stations of considerable duration, but to *all* ships of war, whether in the channel, or any where on the coasts, so long as they were at sea.

The happy effects of this order, on the health of the British seamen, has been amazingly conspicuous in the last three years of the last war; insomuch that without any unusual severity in the impress service, more men have been mustered in the royal navy, than it ever could obtain in any former war; notwithstanding that in the late war, the nation was bereaved of the numerous
supplies

supplies of *American seamen*, which had in all former wars so greatly augmented our naval power. This surprising fact can only be accounted for, by their having had less sickness and mortality amongst them.

To shew that the good effects of the Essence of Malt, on the British seamen, have been coeval with the war, and that its reputation has not declined, we conclude with the following short extract.—“ I used the Essence of Malt freely upon our returning from the relief of Gibraltar last year, to some scorbutics, and all the wounded.—I hold it in the highest estimation as a salutary part of diet, a pleasant and efficacious medicine to seamen; but it must not be cramped in its use. I wrote to Mr. Hanway on our return, freely and fully on the subject.—Mr. White, then, and I believe still, in the *Goliath*, I know used it largely.—I know its good effects at sea, consequently wish to see it in general use.”

I am, &c.

JOHN FIDGE.

Carnatic, at Woolwich,

May 2, 1783.

[A true copy, I. Watts.]

After so many very honourable and respectable testimonies to its sanative virtues, from such as could not possibly have any interest therein but that of our common humanity, the proprietors would think it impertinent in them to add any assurance thereof as from themselves : and shall therefore only add the following transcript of the printed directions, given by the honourable Commissioners for victualling his Majesty's navy.

INSTRUCTIONS

May 21. 1788.

[A true copy, I. Wares.]

I N S T R U C T I O N S

F O R U S I N G T H E

E S S E N C E O F M A L T :

Issued by the Commissioners for Victualling His Majesty's Navy, in Consequence of Orders from the Lords Commissioners of the Admiralty ; to be used under the Discretion of the Surgeons of His Majesty's Ships, as a Preservative against the Scurvy, and also as a Cure of it : the same having been tried and approved, and the highest Encomiums of it made, by the most able Physicians and Surgeons.

B R E A K the E S S E N C E into small pieces, and pour upon it boiling water ; stir it about till dissolved, and drink it as soon as made.

When only a few pounds of the Effence are required to be used, it may be cut out of the cask with a chisel.

Small casks are the most convenient, as the Effence is apt to grow soft on the surface when exposed to the air.

When the whole of the Effence, contained in a cask, is used at once, it may be separated from the cask in a solid body, the head being taken out, and the hoops sufficiently loosened: it may then be broken into pieces with a hatchet, and be put into clean casks, with such a proportion of water as the surgeon of the ship shall think proper.

The Effence unmelted, is very pleasant as a pectoral; and probably other modes of taking it may be thought of, and be equally agreeable and salutary.

The Effence has been found of great use in the cure of Sea-Scurvy, Fluxes, &c. common to seamen; and if used by the part of the crew in health, is an excellent Antiscorbutic, and will prove a great preservative against complaints so destructive to seamen.

At all times when the Wort is given, either as a remedy, or palliative, the quantity and strength of it, and whether it should be drank warm, or cool, is left to the judgment and direction of the surgeon.

Sugar

Sugar also renders the Wort more pleasing to the taste; and is to be used according to the discretion of the surgeon; the Muscavado or brown sugar is the best.

Proportions of ESSENCE of MALT ordered.

Rate	Men	For Six Months, Foreign Service.				For four Months, Channel Service.			
		Tons	Cwt.	qr.	lb.	Tons	Cwt.	qr.	lb.
1st	850	3	9	3	8	1	12	0	14
2d	750	3	1	2	12	1	8	1	11
3d	600	2	9	1	4	1	2	2	20
4th	350	1	8	3	0	0	13	0	26
5th	300	1	4	2	16	0	11	1	10
6th	200	0	16	1	20	0	7	2	7
Sloops	100	0	8	0	24	0	3	3	4

To which may be added,

That one pound of the Essence of Malt, dissolved in a gallon of hot water makes a very good Wort, equal to that of small ale: a pint of which drank every morning, prevents the mischievous effects

effects of a costive habit, and may be used to advantage in many other diseases beside the Scurvy. But when Scorbutic symptoms appear, the quantity should be increased to two or three pints a day, or more according to the condition of the patient, and the exigency of the case.