Some Pre-Lind Writers on Scurvy

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To-day a few tenuous sentimental attachments have become for me very real ties to the University of Edinburgh. One is long interest in the history of scurvy, whose conquest you are commemorating. The second tie goes back even further, almost half a century, to 1905 when our literature instructor insisted that no man could really lay claim to a knowledge of the English language unless he had read and re-read A Window in Thrums. I took his admonition to heart and fell under the spell of Barrie for ever after, so much so, in fact, that I treasure highly my copy of that thin little volume The Entrancing Life, the address Sir James delivered on the occasion of his installation as Chancellor of the University of Edinburgh on 25 October, 1930. I know it almost by heart. The other attachments are somewhat more realistic. Two of the graduates of the medical school are friends (one of them is my family physician). One is in California, the other elected to remain in Great Britain. Both of them are professors of medicine in great medical schools, and both of them are pupils of Dr C. P. Stewart. That is why I so readily and proudly accepted Dr Stewart's generous offer to read this paper for me when I found myself unable to attend, although, like Barrie, in his opening remarks here 23 years ago, 'I am riven with misgivings. What have I dared!'

Any commemoration of Dr James Lind's A Treatise of the Scurvy inevitably must focus attention upon those who helped to guide his thoughts.

It becomes a felicitous task for me, and one for which I am deeply grateful to The Nutrition Society who have permitted me to trot forth my hobby and remember a few of Lind's predecessors. By hanging out lanterns, feeble as the light of some of them may have been, they gave him direction. They do not detract from Lind's glory as a scientist. Living to-day and working with the tools of modern biochemistry Lind certainly would have occupied the high pedestal with Sir Frederick Gowland Hopkins.

Within our lifetime biochemistry has so changed perspectives that we may not appreciate fully the groping of our forefathers. Re-reading Lind's Treatise will reveal this clearly. He tried to lay aside 'all systems and theories of this malady which were found to be disavowed by nature and facts'. The amount of reading he did on the confused subject of scurvy was a formidable task in itself.

Before Lind the literature on scurvy was a welter of jumbled writings, many of them highly tinged with Sydenham's axiom that 'all disease could be described as natural history'. That is why Lind prudently segregated the medicinal from the
folklore knowledge in his attempt to be objective. He reviewed more than 200 authors, abstracting sixty-one, some briefly and some in extenso. Yet Lind overlooked Moellenbrok's isolation of a potent crystalline antiscorbutic from a syrup of scurvy-grass, in 1676, the penalty of the clinician's pardonable disregard for the weird 'scurvy recipts' of that day.

Of the sixty-one, only fourteen are English; twenty-one are German; twelve Dutch and five French. Denmark, Russia and Austria are represented by two each; and one reference each stems from the Hungarian, Swedish and Swiss literature on scurvy. In addition, Lind lists thirteen academic theses, all but four of them German, and sixteen academical disputations*. He appealed for help to obtain six 'academical disputations' or 'any other curious and useful observations made and published on the scurvy, or also such of the following academical performances as are distinguished by an asteric', (Koelesser, 1707; Crauford, 1707; Thiessen, 1735; Alberti, 1731; Burchard, 1735; and Hilscher, 1747) adding 'I desire and earnestly entreat all men of study and learning who are possessed of them not to conceal them from me'.

There were no Nutrition Abstracts and Reviews in Lind's day, no bibliofilm or photostats, which make for such quick exchange of scientific information to-day. Perhaps that is why this antiquarian interlude is placed here—to slow down the programme a bit—slow down the zeal and pace of research reports which engender still more ardour for realism and relegate memories of humble and romantic beginnings to a scientific attic to gather dust and cobwebs.

Brief evaluation of some of these pre-Lind texts which I have collected may scarcely seem justified if only those authors reviewed by Lind were cited. We shall, therefore, discuss only a few of his authors and dust off a few others he ignored or overlooked. Among these are: Robert Boyle, Doctors William Clowes, John Woodall, John Colbatch, David Macbride, and a curious anonymous text of 1682 with its detailed recipe for making Mum and a jolly commentary on this drink. Each time I read it I am tempted to brew it.

The great medical library formed at the end of the fifteenth century by Dr Nicholas Pol, Austrian-born court physician to Emperor Maximilian I, contains no books on scurvy. The reason for this is obvious. Pol's books dealt chiefly with Greek and Arabian medicine, with diseases of the Mediterranean regions where scurvy, as such, was virtually unknown.

The first actual bibliography of scurvy is that of Johannes Echthius (1541), the Dutch-born physician of Cologne, who referred to seven authors. Lipenius (1679), in his Biblioteca Reais Medica, only listed twenty-nine papers dealing with scurvy, and the great Mercklin's (1686) Cynosura Medica, only twenty-four.

'It has been no easy matter to obtain a knowledge of the many writings on this distemper', Lind (1753) remarks in the Appendix to the first edition of his Treatise, adding 'There have been collections made from time to time of the several authors

* Among the latter there occurs the first work on scurvy from an Italian University. This is the 1679 dissertation of Charles Patin, brother of the more famous Dr Guy Patin, Professor of Medicine at the University of Paris. Of Charles Patin, Lind, however, makes the laconic comment: 'Patin is more celebrated for his other writings than the Oratio de Scorbuto'.
on the plague, venereal disease, etc.: but no such have been compiled of writers on the scurvy. For example, Felix Plater (1656), of Basle, in 1608, believed that scurvy, like lues, had been brought from abroad by sailors.

This constant association of scurvy with venereal diseases, on the one hand, and with rheumatism, on the other, is evident also from Martin Lister’s (1694) introduction to the chapter on scurvy in his Sex Exercitationes Medicinales. Lister, the physician to Queen Anne, writes:*  

‘I have placed scurvy adjacent to the chapter on venereal disease, because of the newness of the disease, and because both are so closely related and have so many symptoms in common that they are not readily distinguished from each other, except by an experienced physician’.

With easy transition Lister follows his chapter on scurvy with one entitled de Arthritide, antiscorbutic remedies appearing throughout.

Johann Hartmann, whom Lind recognizes despite the Marburg physician’s acceptance also of the symptomatic clinical similarity between lues and scurvy, ‘commends for poor people in the scurvy the decoction of guaiacum wood with scurvy-grass’. This same Hartmann (1633), however, first reported the harmful effects of mercury in the treatment of scurvy, and the Hungarian army surgeon, Kramer (1737), claimed knowledge of 200 men ‘destroyed by mercury given as an antiscorbutic’.

Another adherent of the lues-scurvy tenet and perhaps the most widely read authority on scurvy before Lind, was Severinus Eugalenus, a Friesian physician, whom Lind accused of ‘extreme ignorance in physic’. Eugalenus, who in 1604, practised medicine in the cities of Emden and Amsterdam, quoted 200 such cases in his De Morbo Scorbuto liber (Eugalenus, 1623). He expressed surprise over the rapidity with which the venereal contagion spread, and gave as the only distinguishing diagnostic sign between lues and scurvy the pulsus inordinatus, the quick, small, uneven pulse of scurvy and the appearance of the urine.

Eugalenus was everywhere credited with speedy miraculous cures of scurvy, although Lind said: ‘Eugalenus had not talents sufficient to form any sort of theory’. Lind’s review of Eugalenus is one of the lengthiest in his book, extending over eighteen pages.

Lind makes the Dutch physician, Balduin Ronseus, facile princeps. Ronseus suggests that cold damp air of the sea and the seashore is the principal cause of scurvy. His is the first book written expressly on scurvy and was published in 1564. A later edition of Ronseus (1585) combined the epistolae of Echthius and Langius as well as the observatio of Wierus as a sort of compendium of the current views on scurvy. Ronseus also held to the theory of involvement of the spleen in scurvy. Both Ronseus and Echthius, writing separately, interpreted Pliny’s (70) description of the disease, which afflicted the Roman army under Germanicus, as scurvy.

* ‘Proximo autem Lui Venereae loco Scorbutum posui, & propter morbi novitatem, & quod illi tot tantisque signis communibus, valde affinis sit; imo unum ab altero dignoscere, nisi admodum exercitato medico, haud ita facile est’.
Wier (Wierus) (1567), copying Echthius, and Bruner (Brunerus) (1589), copying Wierus (adding only that leg pains preceded the actual onset of scurvy) well might have justified the subhead in Lind's preface *Dies Diem Docet*, and the words:

'To know a disease and to cure it being the utmost essential things to be learned, I have, therefore, transcribed the symptoms and the cure of the scurvy from those authors where they do not entirely copy from each other. I hope such motives (truth, and good of mankind) will to the candid and to the most judicious be a sufficient apology for the liberties I have assumed'.

In re-reading the principal pre-Lind authors *seriatim* one observes the transitions from land to sea scurvy, or *purpura nautica*. One also sees the transition of the concept of scurvy as a winter epidemic among urban populations and its entity as a deficiency disease when studied in the isolation of the sailing ship when voyages of discovery increased in duration sufficient to permit complete deprivation of anti-scorbutic stores.

It was Dr Thomas Willis (1684) and his copier, Dr Walter Charleton (1672), physician to King Charles II, who seem to have 'exceeded all others in multiplying divisions and classes of scurvys', as Lind remarks, adding that Aegidius Hoffmann's so-called 'Muriatick Scurvy' seemed to be merely 'a chimerical distinction' attributed to the drinking of sea water, then fashionable as a physic.

The general implication of salt in sea scurvy is too well known to merit discussion.

Though land scurvy was, in its epidemic era, regarded as the winter disease of the cities, localized sometimes as in 'The Disease of London' or the 'Dutch Distemper' (in Scotland it was descriptively called 'blacklegs' from its ecchymoses of the extremities), it was for the most part the disease of the poor. Its remedies were the lowlier herbs, the cresses, the scurvy-grasses, so fittingly named, although only one, *Cochlearia officinalis*, or spoongrass, rightfully bore this name. So deep was the folk-faith in scurvy-grass that Moellenbrok (Mollimbrochius) (1676), in his *Cochlearia Curiosa* said:

'It hath been declared above, that Scurvygrass doth not grow in all places, and chiefly not in the Eastern parts of the world, in which it is never found, nor will its seed sown in the Earth there produce it, for it will only grow in the Western parts, in which the Disease which it cureth, viz., the Scurvy is frequent'.

Hildanus Fabricius† (1629) in his *de Conservanda Valetudine*, however, questioned the claim by pointing out that 'Nature is backward in producing scurvy-grass in Switzerland, because through God's mercy this Country has hitherto been free from this grievous plague The Scurvy'.

Fabricius, according to Shipley (1929), states that scurvy appeared for the

* 'Englished from the German by Thomas Sherley, M.D., and Physician in Ordinary to His present Majesty'.

† In 1627 Fabricius (Hildanus), who has become one of the controversial figures in scurvy lore, attempted twice to grow Dutch scurvy-grass in his garden in Switzerland, having carefully sowed the seed which he procured out of Holland'. Failing in his first, he succeeded in his second attempt, adding his prayer 'that it might not prove an unlucky Omen to the Swissors, and a Forerunner of this Disease, of which it is a Remedy'.
first time in North Germany in 1486. He is also the recipient of the letter dated 15 October, 1622, from a Dr Ludovic Schmid, physician to the family of George Frederick, margrave of Baden. Dr Schmid (see Schmid, 1627) describes what he calls a case of scurvy in the 14-month-old son of the margrave. Lind, however, dismisses the Schmid letter-evidence with ‘not deserving of notice’, although he refers to ‘Hildanus’ as a ‘celebrated practitioner’.

Thomas Sydenham (1685) who, Lind says, did ‘not quite believe in scurvy’ but whom he acknowledged as ‘The English Hippocrates’, employed ‘leaves of fresh scurvy-grass’ for his antiscorbutic electuaries and recipes. In two remedies Sydenham combined scurvy-grass with oranges. In one he used the juice of half an orange in a pint of the scurvy-grass beer; and in the other, the pulp of a whole orange combined with both the leaves and the seeds of scurvy-grass steeped in half a pint of white wine.

Sydenham’s contributions to medicine are too well known to warrant extensive comment here except for his relationship to Robert Boyle, and the latter’s array of fantastic remedies against scurvy and its manifestations. A study of the great chemist’s remedies, or receipts, as he calls them, can only lead to the conclusion that Boyle, like so many of us to-day, apparently failed to take his physician friend’s advice seriously and elected to experiment by compounding his own remedies.

Boyle’s (1696) Medicinal Experiments: or, a Collection of Choice and Safe Remedies, etc. contains eighteen recipes for antiscorbutic remedies; four of them for the disease itself, and thirteen ‘to fasten the loose teeth’, the result of scurvy. Still another, a true antiscorbutic decoction, while making no mention of scurvy, is prophetically entitled ‘To Promote the Healing of Wounds’. Boyle confesses to having suffered from the ‘scurbutic colic’*, for which he gave the following recipe:

‘Take English Barley, and having well wash’d it, boil it in a sufficient quantity of fresh Spring-water till it be just ready to burst: Then pour off the clear upon the yellow part of the Rhinds of Lemons, freshly cut off from the white part, and put them into a Bottle, which being carefully stopt, the Liquor is to be kept so for Use, which is, that the Patient make it his constant Drink’.

Boyle’s remedies, which Boyle concocted and advised, (some of them he admits were

* Boyle blames his delicate constitution on being ‘the thirteenth or fourteenth Child of a Mother, that was not above 42 or 43 Years old when she dyed of a Consumption, ’tis no wonder I have not inherited a robust, or healthy Constitution’.

‘For this Mischance happening in Ireland, and I being forc’d to take a long journey, before I was well recovered, the bad Weather I met with, and the as bad Accomodation in Irish Inns, and the mistake of an unskilful or drunken Guide, who made me wander almost all Night upon some Wild Mountains, put me into a Fever and a Dropsie.’

‘But this after the foregoing Relation may well be said, that it need be no great wonder, if after such a train of Mischief, which was succeeded by a Scorbutick Cholick that struck into my Limbs, and deprived me of the use of my Hands and Feet for many months, I have not enjoy’d much Health, notwithstanding my being acquainted with several Choice Medicines; especially since divers of these I dare not use, because by long sitting, when I had the Palsie, I got the Stone, voiding some large ones (as well as making bloody Water) and by that Disease so great a tenderness in my Kidneys, that I can bear no Diureticks, tho’ of the milder sort, and that I am forced to forbear several Remedies for my other Distempers, that I know to be good ones, and amongst them divers, that by God’s Blessing, I have successfully try’d on others’.
merely copied from other writers) show a predilection for ‘Terra Japonica in Claret
Wine’, sometimes with and sometimes without ‘allom’. Throughout, it can be
seen that Boyle’s concern was chiefly with the gingival involvement, the ‘laxity
of the gums’ as he paraphrases ‘scurbutic gume’ in his Recipe Number Ten of Book
Three.

In returning to Martin Lister (1694), Sydenham’s contemporary, one finds
espousal of the cold and salt theories of scurvy as propounded by Eugalenus. His
twelve case reports* of scurvy (Aegrotus I to XII) provide interesting reading for
the clinician to-day and reveal Lister’s various treatments of the disease. Medication
in the last three cases proved so effective that Lister concluded that ‘the greater
“ungrateful” degree of acidity of immature fruits’ alone does not seem to be the full
measure of their antiscorbutic value but that in the citrus fruits, lemons coming
first, followed by oranges and citrons, ‘reside a special exotic principle curative
of scurvy superior to bezoar stones and the like’, concluding with, ‘without boasting,
however, I have observed in all my medical practise that with no other remedies
were such successful results effected as with lemons’.

Lister, however, was not the first English physician to employ citrus fruits in the
treatment of scurvy. That distinction, as Shipley (1929) claims, should go to
John Woodall. Nor am I the first to be bothered by the failure of Lind to include
Woodall’s (1639) The Chirurgeon’s Mate, or Military and Domesticke Surgery among
his references. This thin folio volume published in 1639, with a dedication to
King Charles, seems to have escaped the notice of almost all medical writers of the
eighteenth century. Dr David Macbride, a Dublin contemporary and admirer
of Lind, writes in 1764:

‘The only places where I see it mentioned are in Wiseman’s preface, and in
the preface to Turner’s surgery; but it is not to be found in Haller’s catalogue,
neither in Heizser’s Bibliotheca Chirurgica; nor, which is still more to be wondered
at, in Lind’s Bibliotheca Scorbutica; notwithstanding that Woodall hath left a very

* CASE

No. 1. A robust soldier, returning from camp with a diarrhoea and oliguria, his whole body covered
with red spots, recovered after medication with an anise, fennel and ginger infusion in
white wine.

No. 2. Received nasturtium and scurvy grass juice in red wine.

Nos. 3. One obese and the other emaciated, both covered with red petechiae and showing signs
of hematuria, died ‘wasting away’.

No. 5. The 50-year-old Prebendary Cooke of York Cathedral, whom Lister diagnosed as scor-
butic, died ‘despite application of an emollient poultice of scurvygrass’.

No. 6. A ‘very obese’ man named Batavus was diagnosed as scorbutic by the gum and tongue
signs, died following violent nocturnal epistaxis.

No. 7. A youth, also suffering violent nose bleeds, together with purplish-black maculae, termi-
nated fatally. No note is made of medication.

No. 8. A 5-year-old boy, died of haemorrhage, to which Lister adds: ‘N.B. Blood flowed from the
maculae themselves’. He failed to recall what medication had been employed.

No. 9. A 10-year-old son of a merchant named Waller died after a typical gingival involvement,
that finally affected the tongue and throat as an ulceration which prohibited the admin-
istration of either medicine or food.

Nos. 10. A 6-year-old boy and an 8-year-old girl as well as another girl, recovered upon treatment
11. with his later prescriptions of (‘succi limonum, succi cochleariae, aurantiorumve succi’) —
12. ‘the juice of lemons, scurvygrass or orange’.
excellent discourse on the scurvy, his description of which appears to have been drawn from his own observation, and his method of cure founded on experience, for he served both at sea and in the army' (Macbride, 1764).

Woodall (1639) laments that none of his 'countremeren had, out of their experience, taken in hand sincerely to set down to posteritie the true causes, signes, and cure thereof; neither left any caveats, instructions, or experiences, for the prevention or cure of the same'. Modestly Woodall acknowledges the causes to be 'so infinite and unsearchable, as they far exceed my capacity to find them out'.

Woodall's autopsy reports may well interest the pathologist, and his dietetic advice for treatment of patients with scurvy is quite specific:

'An oatmeal caudle, with a little beer or wine, the yoke of an egge, and some sugar; or a broth, made with currants or other fruits, with spices and sugar; and, for drink, barley water, with some juice of lemons, if it may be had, if not, with oyl of vitriol and sugar. The juice of lemons is a precious medicine, and well tried, being sound and good: let it have the chief place, for it will well deserve it. It is to be taken twice a-day, a spoonful or two with sugar'.

Woodall’s protagonist, Macbride (1767), wrote an entire book filled with illustrations of apparatus in which he performed his ‘fixed air’ experiments on the digestion of mutton, in an attempt to keep it sweet, or if already putrid, to sweeten it. The Dublin surgeon’s dabbling was designed to prove the superiority of his malt or wort over Lind’s citrus cure for introduction into the Royal Navy. Confidently, however, without having treated a single case of scurvy he sent out a quantity of his malt for clinical tests. Macbride based his ideas, second-hand, on ‘the theory, which makes the cure of the sea scurvy to depend chiefly, if not altogether on the fermentative quality of the fresh vegetables’, to which he says ‘the ingenious Dr Lind ascribes somewhat’, adding ‘yet his theory rests chiefly on the saponaceous, attenuating and resolving virtue, which, according to him “is the chief and most essentially requisite quality in the antiscorbutic mixture”’. (Lind, p. 304).

If Macbride’s ‘fermentative’ might be misinterpreted in the sense of biochemical nomenclature for enzymic, the Dublin surgeon might be regarded as a prophetic genius instead of the proponent of an untried theory that scurvy is a ‘putrefactive diathesis brought on by excessive moisture’ amenable to the wearing of dry clothing and a draught of his wort. On the other hand, Macbride may seem to have had a rather modern and fundamental concept of scurvy, in that he believed its putrefaction resulted from the loss of a ‘principle, forming the cement, or bond of union’, upon which the ‘firmness, soundness, and perfect cohesion of bodies, chiefly depend’. He therefore conducted elaborate in vitro experiments to trace ‘the progress of digestion, and showing that the principle above hinted at is received into animal bodies by way of the chyliferous canals’. Perhaps we are tempted to read too much into Macbride’s verbiage without a sufficiently critical examination of his actual experiments. Words, however, tempt the reader as well as the writer.

With Macbride's untried wort and Sydenham’s (1685) antiscorbutic ‘twelve bottles of small beer, acidulated with Spirit of Vitriol, every twenty-four hours’,
A PROFITABLE AND NECESSARIE
Booke ofOblcuations, for all thole that are burned with
the flame of Gun powder, &c. and also for curing of
wounds made with Musket and Caliuer shot, and other
weapons of war commonly vsed at this day both
by sea and land, as heereafter shall
be declared:

With an addition of most approoued remedies,
gathered for the good and comfort of many,
out of diuers learned men both old
and new Writers:

Latst of all is adioined a short Treatise, for the cure of
Lues Venereae, by vnitons and other approoued waies
of curing, heerefore by me collected: and
now againe newly corrected and
augmented in the yeere
of our Lorde
1596.

By WILLIAM CLOWES
one of hir Maiesties
Chirurgion.

Imprinted at London by Edm. Bolliant,
for Thomas Dawson.
1596

Fig. 1. Facsimile of title page of Clowes's (1596) book
Obseruations for curing Gun shot.

The cure of two Seafaring men which fell sick at the sea of the Scourby.

Cap. 12.

Observe well these following observations of the curing two Seafaring men, which travelled a long time upon the seas, and there fell sick of the Scourby, which infection as I gathered by inquiry, was reputed principally unto their rotten and unwholesome victuals, for their food their bread was mould and mouldy biscuit, their worse unripe and unberried like ginger, their water corrupt and stinking, the bell drinks they had, they called Seyurche, half boiling and half putrid water mingled together, and yet a very small and short allowance, their bees and wine was likewise, by reason of the corruption thereof, of a most lothsome and filthy taste and savor, insomuch that they were constrained to stop their noses, when they did eat and drink thereof: moreover their bacon was rickish, their fish, butter and chase wonderfull bad, and so consequently all the rest of their victuals: by reason whereof, and likewise lacke of convenient exercise, clean keeping and quiet of apparel, and age, being in an ill disposed climate, and want of good victual: these causes and such like were the only means that fell into the Scourby, for their gums were rotten even to the very roots of their teeth, and their cheses hard and stovened, their teeth were loose and ready to fall out, their laces tattered painfully, their breath of a filthy savor, that at what time I first saw them, and was asked for their names, the savor was so odious, that I was scarce able to sit and abide it: in like manner their legs were fable, and so weak, that they were scarce able to carry their bodies: moreover, they were full of ashes and pains, with many bloody swellings and flames of spots, some head and some small like the blisters, on the graine of a Home-Grain, like wise their legs were colde, hard, and swollen, which caused me to fear Gangrene, fasculous in such extremities being in corrupt bodies full of stilt urine, both challenge putridation, which indicate of sickness, although it be in some safely cured, yet experienced daily sweller that a number also stile. Now the first thing that required help by surgeons was their gums, and their legs, being the contained canes, but so that I will proceed as orderly as I can in my writing, I will begin with the antecedent task in weight, which was done and performed by the spouse and counsellor of learned Physicins, who being constantly let me know their opinions for their cure order of purging, with other remedies, as hereafter followeth: First as I said, enunntating on going before, to buminish the humors false abounding, it was thought must meete to begin with blood letting in the middle vein on the left arm, § 3 did the same from each of them hit by hit, which first they were also well purged with this purgation, to Dialysis 3. 6. Sirr. Fumaria 3. 6. Aquæ cabiole 3. 6. Milk and hereafter they were purged. Also cuoricus seventy a eight day they were likewise purged with the pills of Fumitoxie 3. made into small pills, so as I say, after they were well purged, then in the mean space, there was prepared for them a redines this drink where following, which continually they did drink at their meals, and also as often as they were desirous to drink: The water and making thereof is thus: First there must be prepared a clean distill of eight gallons, which was full of new ale, and then was added to it of Coecataer or Scourby grasse a pearl, being purely picked, and clean washed, and also burned in a stone mortar, and after put into the distill, with that was added there to of long Pepper § 3. Cinnamon and Ginger of each half an ounce, of Saffron § 3. all these spices were put into a fine linen cloth or bag, and so hanged in the ale, with the herbs before said, and then it set two days before they did drink it of. And further it is to be remembered, that every morning they did cete a measure of this Almond milk being newly made, and it did them very much good. To two spoules of French barly, and sift it in a reasonable quantity of running water till it be soft, then add to it of Almonds blanched § 3. ounces, then take of this liquer a pound, and put to it of Cockalore 3. Scourby grasse, Fumitoxie, and water Cresses, of each half as a half, and lastly with the Almonds in the distill of this liquer, so beare the Almonds will turne to an oil, then boil all together to the consumption of the third part, then add to the distill of the Sugar 3. 6. of Roke water § 3. let all these be a little, and then referre it to your taste: In like sort every evening towards supper of the cokkes they did drink a good draught of polet ale, whereunto was added of the wine of Scourby grasse a spoonfull, with a little of the powder of Cinnamon and one Sugar, and now and then in the evening a good draught of Almonном wine. Their meat was that they did eat well Susan boiled, and sometimes Veale and chickens, eacuised with divers sorts of grapes, and thickened with ote meals, or the crumbs of white bread, with a flem Carrons, and slices of the same. However, there was added of Scourby grasse, Fumitoxie, water Cresses, and Almancells. Their bread was made of the best wheate, and of a day old. Now here note you well, that every day a second day, one bowler after they had receiv'd a certain sume, the description hereafter.

Fig. 1 cont. Facsimile of excerpts from text of Clowes's (1596) book.
Obseruations for

A very sculpturall gar*\textsuperscript{a}l giraffe.

I was Chirurger of Saint Bartholomewes hospital in Smithfield, and also of Christes hospital for

42 Obseruations for

...then they did presently drink of the above named Almonde milke.

...and after their flowering was ended, I did immediately burn their legs, which done, I anointed them, and lastly I applied a plaster, which hereafter shall be also nominated. Hoc quoque that their gums were so extending flinking and rotten, I did at the very beginning lacerate their gums with a lance, then presently I did as it were touch, or wipe their gums gently over with a certaine beet with water, which the godfathers have used for refining their gold, and dene themselves ne bie for it, the sore and strength being by them greatly consumed and walled: for the which cause it is called the break water. After the bis hereof, I did cause them certaine times in day and in night, to gargle or wash their gums and mouthes with my lotion published in my booke for the curynge of 
Luis Deveres, Cap. 6. Whereunto many times I made the sir. of sphagheteries, q.s. Also I did at favours time a 3 of the above name bethyl with water, and did take thereof 3.5. Inheruntes I did put of plantaine water 3. big. and hurt with I did inordinate and cleanse their gums. Also it is known most certainly that great good is done in curing of such rotten gums and soe mouthes, once with this gargarine, which is published by Ioh. Palumerus, it is also set forth of matter Besnier in a booke, which he calleth his Antidotum Chirurgicall. R. Hordei nigri p.i. &c.

...blew there in Aquar. lib. iiij. till the one part be consumed, then add thereto Mellis rota, Sirrofa rum occanum an. 3.iiij. Alummis vita, Calcani vita, an. 3. &c. blow all these with a boile or two, so let it cool, and then keep it to your use. Also I have found great good by the boile of that pouder, which is published by that reverend learned man Wyrus, who hath written most properly for the cure of the Scurby, take of salt and burne it in a crucible, whereunto ye shall add of the powder of Pomegranate flowers, and so muche together, & therefore I did many times rub well their gums. Moreover, I have in times past also Vnguentum Egiptiacum, & also a powder called of some Puluis Achimificus, or Caput mortuum, it is the dead head, of Aqua fortis. I also after washed their mouthes with bister and salt toater, q.s. and by these meane I have cured many sallow mouthes specially in children, when I was Chirurger in London, children in Christes Hospital, where I have had twenty or thirty infected with the Scurby at a time. After had I well moned and cleansed the mouthes and gums of these two men, then I did administer a certaine fume, by the advice and counsel of D.D. which fume was receivd in at their mouthes by a funnel after this manner, I did take of Merhe, Olbani, Alte fuadza an. 3.iiij. Acri viuaci lib. iij. which gums were

43 curing Gun shot.

...were great beaten, then they were tied loosely in a fine linen cloth, and so put into the burner, then there was prepared an extern pot fit for the purpose, well glazed as needted, and at these times when it was to be used, there was prepared a fumell made fit in bethenes and compasse unto the mouth of the said pot, so it was well placed on said together, with the late called of Schlandwer, and many other gaz distillers and Almassiis Lucaum sequencie, and it is proved very necessary to joine and conglutinate two fumells together for to distillations; or otherwise as afore said. R. Clay and Fillers harel, with white of eggs and sand, thus I joined the pot to the surl together, and then I let it up a chatting of coales, and I let it Boyle gentle, that then caused the patients to lie down in their beds one after another, so that they recurred into their mouthes the fume of smoke, that passed forth of the said fumell, this was also done in the mornings before they did take their Alumbe milkes, and also certaine times in the evening, and did porce of half an hour after it in their beds: which fume was administered most chunfly to open their obstructions inward, and so being well coales and used with warme clothes, they did rise out of their beds, and went to the bathing of their legs, and amoniments as followeth. R. the flowers of Chamomelle, Acilliato et Ummatm, the leaves of Colecas, Water Creepes, and Baskelime, of each a handfull, of the berries of Juniper two handfulls, of Pomysler a quart, running water q. s. sweet butter a pound, these were boiled together, to the consumption of the third part, which bilt did bring out in a short time a number of spots, which before lay hid in the fume, and there being very warme, they were a long time together batch'd with double smallen clothes of white cotton or bies, & then dyed them very well, both hot tinnes clothes: and so as I have before mentioned, they were presently annointed fomtines with Vnguentum Agriper, & formtines with Vnguentum Brionio, 3. Diathese cam gum. Vagumen & and also their legs were all wrapped round with this platter, R. Emplastrum Demino lib. iij. Gummi Armoniaci lib. iiij. being diathesed in Wamsley, then put them together, adding thereto Aubans humani 3.iiij. B. Boile this together to the forme of a platter, I found also very much benefit by the Cuminum platter published in this booke. And thus by the help of God and careful diligence, they were both perfectly cured, and diverse other persons of good account since that time, only by this manner and order securing also said, &c.

Fig. 1 cont. Facsimile of excerpts from text of Clowes's (1596) book.
it is small wonder that Edinburgh's own Dr John Comrie (1932) remarked that: 'The 17th Century sailor must have been a sturdy fellow!'.

Almost a century before Macbride, and not unlike him in many respects, the cantankerous, Dr John Colbatch (1700) published his *Collection of Tracts, Chirurgical and Medical*. The first of these *A New Light of Chirurgery* dealt with Colbatch's 'discovery of a more safe and speedy way of curing wounds than heretofore usually practised, with several experiments'.

Having served in the war in Flanders as a military surgeon, where he was in charge of a field hospital at the siege of Namur, Colbatch records case report after case report in which he cured most seriously wounded soldiers. His remedies were two-fold, one of them his secret vulnerary powder, with which he not only dressed the wounds but which was injected with a syringe, and the other internal, namely 'treatment with a nutritious diet'. The possibility of scurvy supervening seemed ever in his mind. Colbatch claimed to have made upwards of one hundred 'experiments upon Dogs and other animals, woundings them in the most desperate manner I could contrive'. Colbatch was knighted on 5 June 1716 some 12 years before his death.

Colbatch's boasting about miraculous cures, and his secret vulnerary powder, irked his medical colleagues no end, yet he was frank in prescribing citrus fruits as the acids of choice for almost every distemper, from the healing of wounds to smallpox and viper stings, as well as in scurvy and what he regarded as its concomitants, gout, arthritis and rheumatism.

Selfishly, Colbatch retains a warm spot in my heart, not merely for his enthusiastic approval of citrus fruits, but for his elegant and eloquent recipe for 'lemonade, the most grateful liquor in the World'. My Bavarian vintner forebears...

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* 'I now com to treat of the disuse of Alkalies in the Scurvy, that reigning Distemper, from which few are altogether free; and is by most accounted incurable, or at least for the most part proves so. But here I expect the cry of all Mankind against me; what! say there is no Acidity in the Blood in the Scurvy? What but an Acidity in the Blood causes the breaking out of Scabs, Pimples, Blotches, etc. on the Skin?'

† 'Why should we fly to Acids chymically prepared, when, as I said before, Nature has provided Oranges, Lemons, Citrons, Limes, and a great many more not necessary to mention, which for the most part answer our intentions, if skilfully given by an experienced hand?'

‡ 'But however, nothing is more grateful or delightful to an Hydropical Person, than a slice of Lemon or some such thing. Common Salt I allow will excite Thirst, but not *quatenus* Acid, for Spirit of Salt will take it off as soon as anything. Again, if acids were so pernicious to Mankind, as some would make us believe, I wonder the College of Physicians don't unanimously petition the Parliament to prohibit the Importation of Orange and Lemons in such vast quantities as we now have 'em' (Remarks upon Dr Tuthill's vindication of his Objections against my Hypothesis, p. 551).

§ 'As for what I have mention'd concerning the Efficacy of Juice of Lemons, in immediately abating and taking off the violent Symptoms that attended a Person who had bin bit with a Viper, after the Volatil Salt of Vipers, and other Antidotes had in vain bin given; I find the very same thing taken notice of by Hoffman in his Clavis Pharmaceutica Schroderiana, pag. 444. 445'.

** 'If they are at any time very thirsty, they may drink Lemonade; and if what they eat dos not digest well, they may about an hour after dinner eat the Pulp of a Lemon cut into slices, with some double-refined Sugar, it greatly helping Digestion, and strengthening the Stomach'.

The moderate use of all acid Fruits is very convenient, but such as are very luscious and sweet are to be avoided'.

** 'Take of clear Spring-Water one quart; then pare off the outward thin Rine of two Lemmons, and put into it; afterwards squeeze in the Juice of the Lemmons, and then sweeten it with about two Ounces of fine Sugar'.

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The WAY of Making

M U M,

WITH SOME

REMARKS

UPON THAT

LIQUOR.

In the first place, I will give some instructions how to make Mum, as it is Recorded in the House of Brunswick, and was sent thence to General Monk.

To make a Vessel of 63 Gallons, the Water must be first boil’d to the Consumption of a third part, let it then be Brew’d according to Art with 7 Bushels of Wheat-Malt, one Bushel of Oat-Malt, and one Bushel of Ground Beans, and when it is Tun’d, let not the Hogshad be too much fill’d at first; when it begins to work, put to it of the inner Rind of the Firr three pounds, of the tops of Firr, and Birch, of each one pound, of Cardus Benedi-ctus dried, three handfuls, Flowers of Rosa Solis, two handfuls,

Fig. 2. Way of making Mum (Anonymous, 1682).
Remarks upon Mum.

handfuls, of Burnet, Betony, Marjoram, Avens, Penny-royal, Flowers of Elder, Wild Thyme, of each one handful and a half, Seeds of Cardamum bruised, three ounces, Bayberries bruised, one ounce, put the Seeds into the Vessel; when the Liquor hath wrought a while with the Herbs, and after they are added, let the Liquor work over the Vessel as little as may be, fill it up at last, and when it is stopped, put into the Hoghead ten new laid Eggs, the Shells not cracked, or broken: stop all close, and drink it at two years old, if carried by Water it is better. Dr. Aegidius Hoffman added Water Cresses, Brooklime, and Wild Parsley, of each six handfuls, with six handfuls of Horse Radish rasped in every Hoghead: it was observ'd that the Horse Radish made the Mum drink more quick than that which had none.

By the composition of Mum we may guess at the qualities, and properties of it, you find great quantities of the Rind, and tops of Fir in it; therefore if the Mum-makers at London are to careful, and honest, as to prepare this Liquor after the Brunswick fashion, which is the genuine and original way; it cannot but be very powerful against the breeding of Stones, and against all Scorbittick Distempers. When the Suedes carried on a War against the Muscovites, the Scurvy did so dominate amongst them, that their Army did languish, and moulder away to nothing, till once encamping near a great number of Fir Trees, they began to boil the tops of them in their Drink, which recover'd the Army even to a miracle; from whence the Suedes call the Firr the Scorbittick Tree at this very day.

Fig. 2 cont. Way of making Mum (Anonymous, 1682).
As for Eggs in the Composition of *Mum* they may contribute much to prevent its growing fower, their shells sweetening Vinegar, and destroying Acids, for which reason they may be proper in restoring some decay’d Liquors, if put whole into the Vessel. Dr. *Stubbs* in some curious Observations made in his Voyage to *Jamaica*, assures us, that Eggs put whole into the Vessel will preserve many Drinks even to admiration in long Voyages: the Shells, and Whites will be devour’d and lost, but the Yolks left untouched.

Dr. *Willis* prescribes *Mum* in several Chronical Distempers, as Scurvy, Dropsies, and some sort of Consumptions. The Germans, especially the Inhabitants of Saxony, have so great a Veneration for this Liquor, that they fancy their Bodies can never decay, or pine away, as long as they are Lin’d, and Embalm’d with so powerful a preserver; and indeed, if we consider the frame, and complexions, of the Germans in general, they may appear to be living Mummies. But to conclude all in a few words, if this Drink call’d *Mum*, be exactly made according to the foregoing instructions, it must needs be a most excellent alterative Medicine, the ingredients of it being very rare and choice simples, there being scarce any one Disease in Nature, against which some of them are not prevalent, as *Betony, Marjoram, Thyme*. In Diseases of the Head; *Birch, Burnet, Water-Cresses, Brooklime, Horse-Rhadieth* in the most inveterate Scurvy, Gravels, Coughs, Consumptions, and all obstructions.

Fig. 2 cont. Way of making *Mum* (Anonymous, 1682).

and my California oenologist friends, I feel certain, also subscribe to Colbatch’s happy afterthought ‘but if it be too cold for anyone’s stomach, it may be made a little warmer with half a pint of Old Hock’!

Somewhat more alarming, however, were some of the ideas of Boerhaave (1728, 1742, 1783), the Dutch authority on scurvy, and another contemporary of Lind. The French edition of Lind’s *Treatise*, published in Paris in 1783, has Boerhaave’s *Treatise* appended as part 3, in commentary form by Van Swieten. ‘Scurvy is particularly violent in those who do not exercise’, writes Boerhaave and ‘a lazy and sedentary life must therefore dispose one toward this malady’, leading to a thickening of the blood or ‘crassamentum’.

The ‘crassamentum’ seems to have been a sort of forerunner of ‘sludged’ blood
and increased sedimentation rates. How easy it becomes to reinterpret the foggy language of old writers and make them out geniuses, after all!

Misunderstood and forgotten great men are deserving of more than sentimental sympathy. California’s Huntington Library has such an excellent copy of the elder Dr William Clowes’ (1596) Profitable and Necessarie Booke of Observations, with its The cure of two Seafaring men which fell sicke at the sea of the Scorby (see Fig. 1*). Why Lind failed to include this in his bibliography will always remain a mystery to me, since the widely read Clowes fulfilled all of Lind’s requirements of first-hand clinical observation. Clowes, who was Queen Elizabeth’s physician, and ‘one of hir maiesties chirurgions’, was one of the first to abandon Latin and dare to write his medical observations in the vernacular. His remedy was an 8-gallon batch of new ale into which a ‘peck of “coclearia or scorby grasse” purely picked, and cleane washed, and also brused in a stone morter’ was hanged along with cinnamon and ginger. To paraphrase any of it, or to put it into modern English, would destroy its clear, narrative flavour.

Clowe’s recipe for making the antiscorbutic ale popularly known as Mum is not as precise as the one I found many years ago in The Natural History of Coffee, Thee, Chocolate, Tobacco, Etc., and also the way of making MUM, with Some Remarks upon that LIQUOR.

The recipe for Mum (Anonymous, 1682) is that of the House of Brunswick, from whom a General Monk seems to have obtained it. Chemists may be interested in the novel yet quite scientific way in which ‘ten new laid eggs, the shells not cracked’ were used to buffer the drink as it gradually acidified (see Fig. 2).

It was this recipe that set me on the trail of Dr Andreas Valentinus Moellenbrok (Molimbrochius) who clearly described what might well have been the isolation of ascorbic-acid crystals (Moellenbrok, 1676). The Leipzig physician-pharmacist-chemist, in his 195-page book on scurvy-grass entitled Cochlearia Curiosa experimented on ways to obtain various concentrates and finally to isolate the ‘volatile spirit’ of scurvy-grass. He indicates clearly that he was aware of the lability of the antiscorbutic principle to atmospheric oxidation. Even in Sherley’s English translation this seems apparent (see Fig. 3).

The true scurvy-grass of history is the Cochlearia officinalis, Linn., ‘spoonwort’, belonging to the lepidiums or pepperworts of the larger family of cruciferae, or cresses. All of them are marked by pungency and antiscorbutic properties of their fresh leaves now well established also by chemical determination of their ascorbic-acid content. The apothecary of Lind’s day had for his guide in compounding of cochlearia prescriptions, a Latin verse by Johannes Joachim Bechorus on p.

* Our facsimile is made available through the kindness of Mr Leslie E. Bliss, Librarian of the Huntington Library.
Cochlearia CURIOSA: OR THE Examinations of Scurvygrass.

Being an exact Scrutiny and careful Description of the Nature and Specifical Structure of Scurvygrass.

In which is exhibited to Publick Use the most and best Preparations of Medicines, both Chemical and Physickal, either for Internal or External Use, in which that Plant, or any Part thereof is employed.

Written in Latin by Dr. Andreae Valentinus, Mathematicus of Linan.

Fig. 3. Facsimile of title page and excerpts from Moellenbrok’s (1676) book.
Since the Salt is the chief part, by means of which, Scurvygrasi is so prevalent in the Scurvy, according to the Philosophers Axiom: *Per quod quid est tale, illud est magis tale*: That by which a thing is what it is, that thing is more such. There is therefore a necessity, that we treat of this Salt. And because of its volatility, but little of it can be gotten, it is sufficient that we use its Spirit, in which this Salt is hid and contained. This Salt is made (after the same manner that many others are, *viz.*.) Let the thick leaves of Scurvygrasi, and full of juice, be boiled a little while in water, and afterwards press out the juice, or which is better, if only the juice pressed out of the fresh gathered leaves be purified, and a little evaporated till it be somewhat thickened, and so set by, till of its own accord the Salt shoot in the juice. The chief efficacy of Scurvygrasi (as hath been declared just now, and also above in the fifth Chapter) is from the volatile Salt. For experience teacheth,
In cookery it was employed in the making of sauces, or as the Germans called them *Tunken* (vulgarly 'dips'), sometimes combined with the pulp of apples 'with cappers or with the pulp and juice of lemmons and wine or soure oranges'; or as a salad mixed with water cress. Such sauces, according to older authors, were particularly popular in Norway, just as rosehip conserves were used with winter dishes by my grandparents.

Conserves, decoctions and infusions of scurvy-grass leaves together with wine of scurvy-grass somehow bridged the gap between the household remedies and the apothecary's preparations, of which the 'spirit of Scurvygrass' was regarded the most efficacious. Several methods for its preparation are given, including the original technique of Johann Buttner, a German apothecary of Goerlitz, and that of the famous Danish naturalist, Simon Pauli. The alcoholic extract ('Spirit of Wheat or Rye, not the rectified Spirit of Wine') of the leaves was concentrated and the dosage was from ten to thirty drops in wine.

Electuaries, 'The medicine of a substance thicker than a syrup hardly liquid or fluid', were most often employed in filling the physician's prescription for a scurvy-grass medicament. They were made from macerated freshly-gathered leaves, whereas the less popular and less effective elixirs or essences were made from the dried leaves.

'Certainly the volatile salt of scurvy-grass is lost in drying the leaves', says Moellenbrok (1676).

The final and most potent medicament from scurvy-grass, according to Moellenbrok, was his purified 'Volatile Salt of Scurvygrass'. He is explicit in his directions for making it, having, in directing the preparation of the previous compound, warned against prolonged exposure to air or heat. To introduce his idea of being able to concentrate the effective principle of scurvy-grass into a salt, when popularly salt was thought to cause scurvy, Moellenbrok cites the 'Philosopher's Axiom: "Per quod quid est tale, illud est magis tale"', which Moellenbrok's translator, Sherley, renders into Gertrude Stein-like English literally as follows: 'That by which a thing is what it is, that thing is more such'.

Moellenbrok clearly indicates that the production of his 'Salt of Scurvygrass', because of its small yield and its lability ('volatility') is not practicable for the apothecary and that therefore 'it is sufficient that we use its spirit, in which this salt is hid and contained'.

The chemical procedure is described as follows by Moellenbrok (1676, pp. 112-113):

'Let the thick leaves of *Scurvygrass*, and full of juice, be boiled a little while in water, and afterwards press out the juice, or which is better, if only the juice pressed out of the fresh gathered leaves be purified, and a little evaporated till it be somewhat thickened, and so set by, till of its own accord the Salt shoot in the juice. The chief efficacy of *Scurvygrass* (as hath been declared just now, and also above in the fifth Chapter) is from the volatile Salt' (see Fig. 3).

I shall gladly leave it to the chemists to decide from the above whether or not Andrew Valentine Moellenbrok, the Leipzig pharmacist-chemist, in the middle
of the seventeenth century actually isolated ascorbic acid and thus close the covers on the yellowed pages where

'Simply and gravely the facts are told
In the wonderful books of our fathers of old'.

REFERENCES


