

**Observations on the superior efficacy of the red Peruvian bark, in the cure of agues and other fevers : interspersed with occasional remarks on the treatment of other diseases by the same remedy.**

### **Contributors**

Saunders, William, 1743-1817.

Hodge, Robert, 1746?-1813

Green, William, -1787

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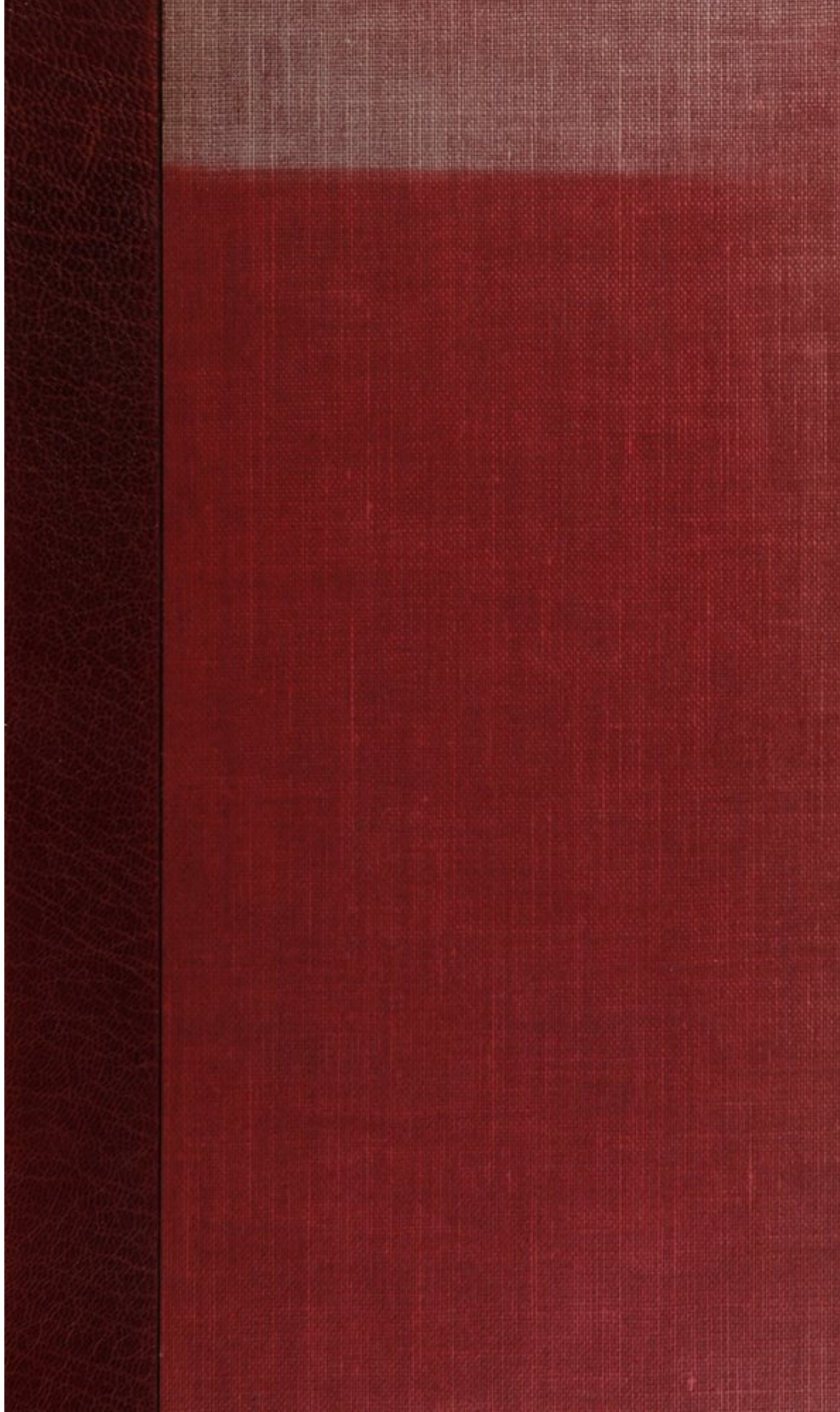
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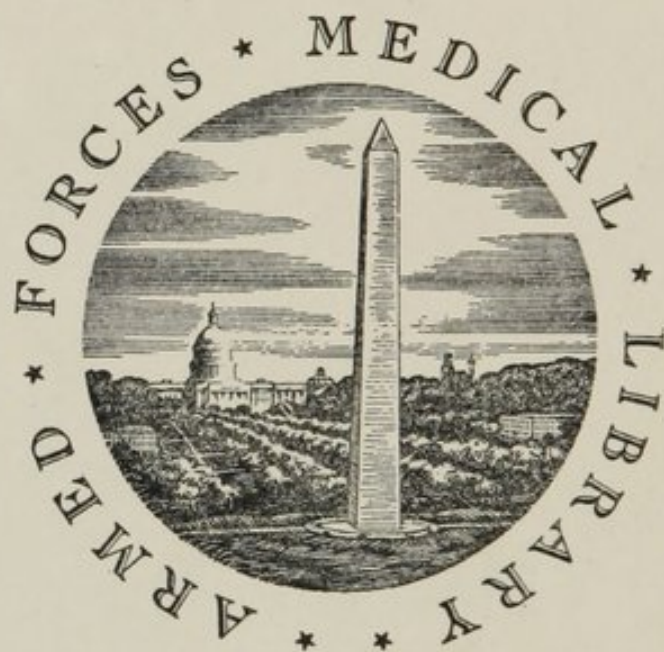
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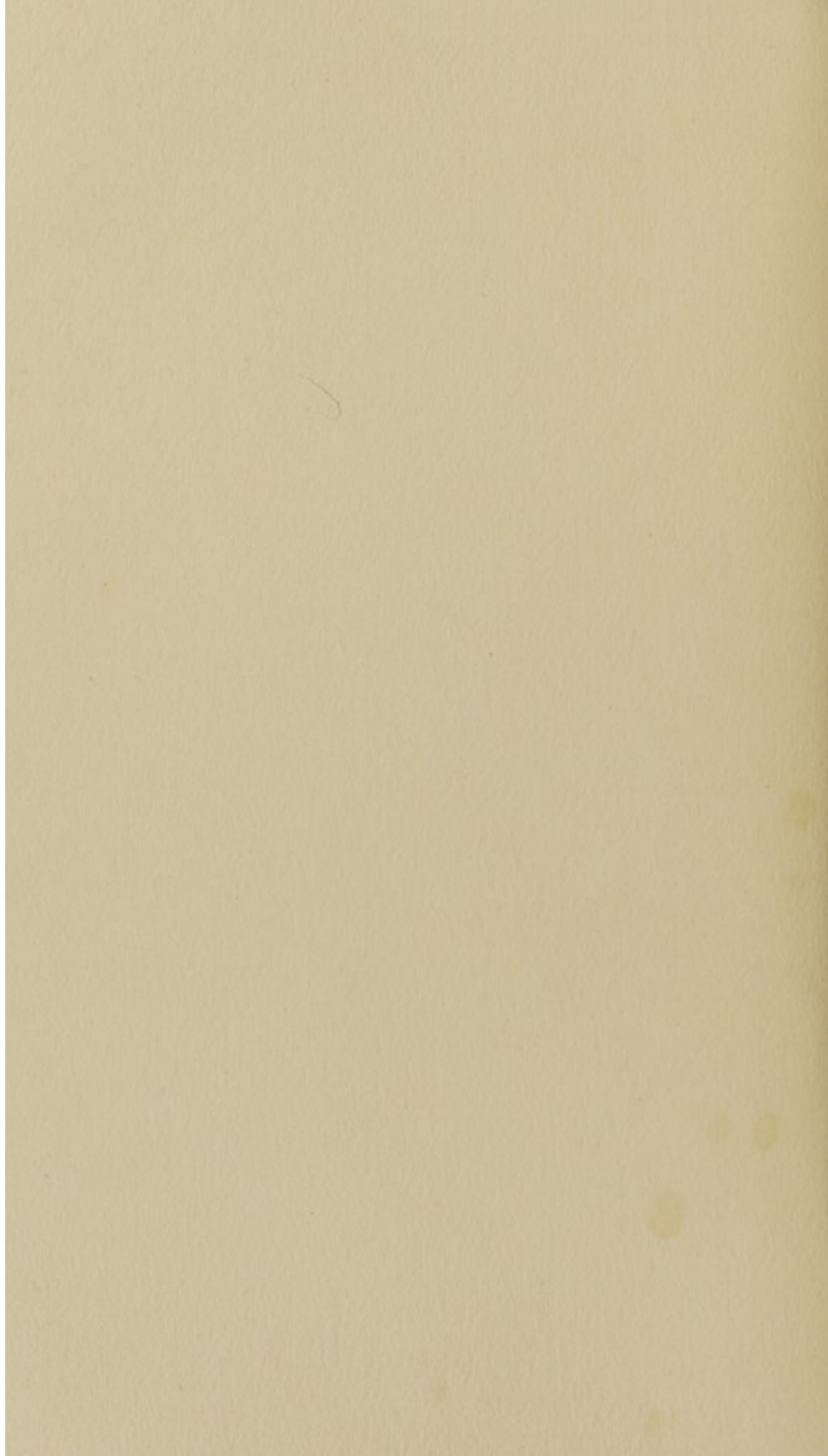
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# OBSERVATIONS

ON THE

SUPERIOR EFFICACY

OF THE

RED PERUVIAN BARK,

IN THE

CURE of AGUES and other FEVERS.

INTERSPERSED WITH

OCCASIONAL REMARKS on the TREATMENT of  
other DISEASES by the same REMEDY.

THIRD EDITION.

WITH CONSIDERABLE ADDITIONS.

And an Appendix, containing a more particular Account of its Natural History.

By WILLIAM SAUNDERS,  
M. D. F. R. S.

Member of the Royal College of Physicians in London, and Physician to Guy's Hospital.

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*Æque pauperibus prodest, locupletibus æquet.* Hor.

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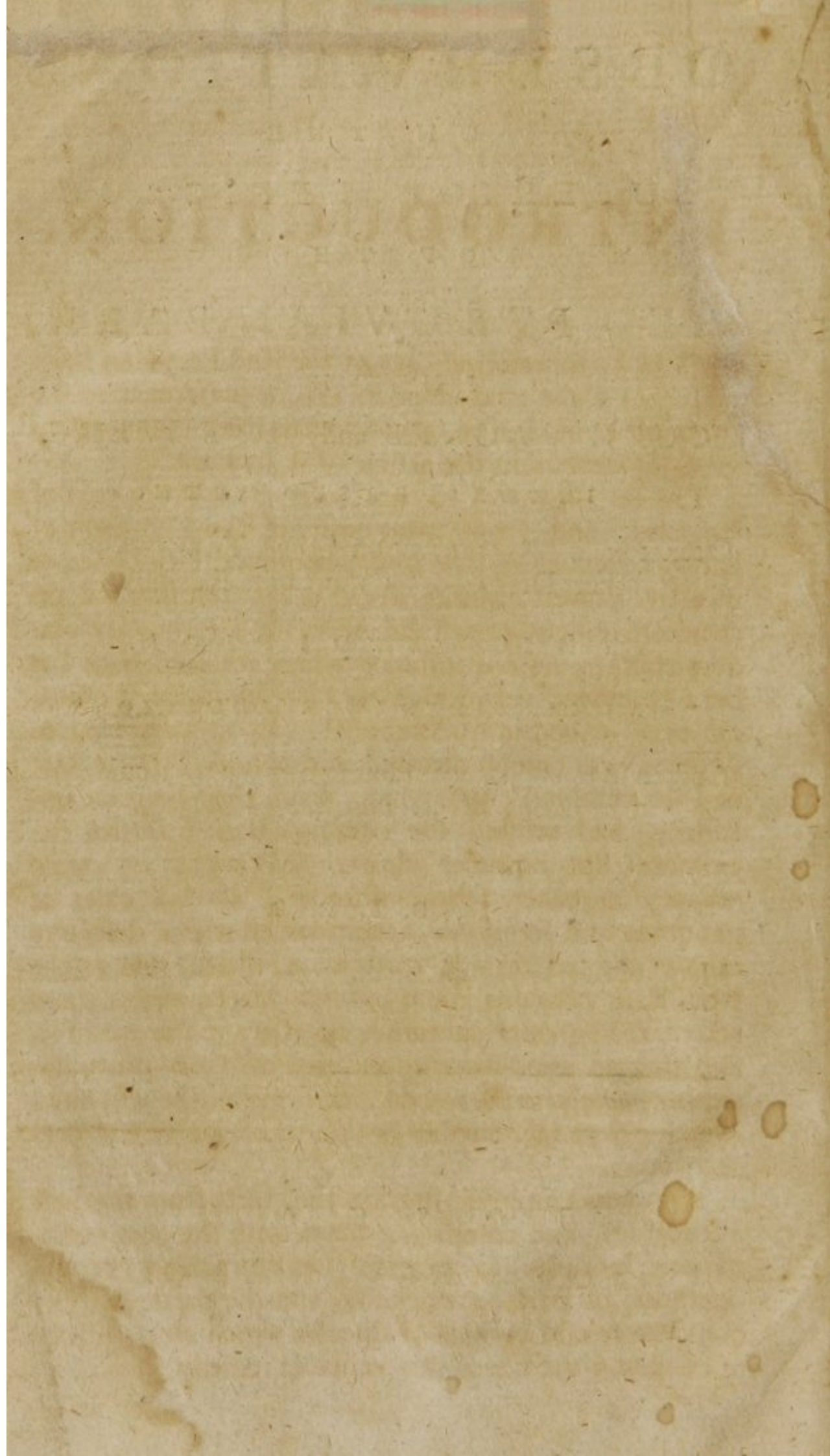
B O S T O N

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FOR WILLIAM GREEN.









# INTRODUCTION.

**T**H E superior efficacy of the Red Peruvian Bark has alone established its use, in preference to the common kind, and in opposition to the most interested views of dealers in the article of Pale Bark.

The intelligence I have received from every part of England, and from many parts of the Continent of Europe, conveying the most unequivocal evidence of its active powers, would exceed many volumes ; I am therefore obliged to rest satisfied with assuring my readers that in no one instance where the Red Bark has been employed with judgment, has its superior efficacy been called in question. Its use, on its first introduction, was chiefly directed and confined to the cure of Intermittent Fevers, which, from their singular obstinacy, had resisted the common Bark ; farther experience has however clearly ascertained its great efficacy in other febrile disorders, and in cases of gangrene and scrophula, accompanied with a defective tone in the system. It may be admitted, that as the Red Bark contains more resinous parts, and is more active, that greater caution is necessary in the use of it, and that an injudicious application of it may prove hazardous to the constitution ; this argument will however apply to all remedies in their most active and perfect forms.

I am now employed in collecting facts from the best authorities, and comparing them with my own observations in order to ascertain with precision the real operation of Bark on the habit, and the particular circumstances and periods of diseases which either justify or condemn the use of this valuable remedy.

Since



Since the publication of the second Edition of this Treatise, I have not been disappointed in any one instance of curing Agues, and even some of the most complicated and unfavourable nature, by the use of a cold infusion of the Red Bark in Water, a preparation of it which always sits easy and light upon the stomach, and which is sufficiently impregnated with the powers of this medicine, to answer every purpose to be obtained by Peruvian Bark.

I believe a cold infusion of the Pale Bark has never been considered as sufficient to cure Intermittent Fevers.

I have procured, by the favour of my learned friend Dr. Simmons, some important information regarding the natural history of the Red Bark, which I have inserted in this Edition of my Treatise; we are now sufficiently encouraged to hope for a liberal and regular supply of this kind of Bark from its growing in the province of Santa-Fe, through which a large river flows which empties itself into the harbour of Carthagena: for other particulars I refer you to the Doctor's Letter, which is replete with useful information.

My friend, Mr. Aikin, of Warrington, whose works in matters of taste, as well as science, have been so universally admired, and who is now preparing for the press a new edition of that excellent book on the *Materia Medica*, by Dr. Lewis, confirms the truth of my experiments on the Red Bark. I have thought proper, in this edition, to give an extract of this Letter, from an author in whose accuracy and candour so much confidence may be reposed. I lately saw a letter from a Physician in St. Domingo to his friend in London, informing him that a Peruvian Bark of a red colour, and in general of a larger size, was lately introduced into that island, and which had proved more efficacious than the pale Bark; he advised his friend to speculate largely in the article, and assured him that he might be supplied with it next year in any quantity;



quantity; he supposed it was from a new forest of trees which had been lately discovered.

My friend, Dr. Lister, now at Paris, has been able to procure me from the collection of M. Joseph de Jussieu, the different Specimens of Bark mentioned in Dr. Simmon's Letter, and particularly one Specimen, which, by the desire of the Spanish Minister for the American department, was presented to the Royal Medical Society at Paris, by Don Casimir Ortoga, Professor of Botany at Madrid. I was lately requested to procure a quantity of Red Bark of the best quality for Le Compte de Carburi, Physician to the Count D'Artois, so that the use of it will probably soon become general on the continent.

There is some danger, from the avarice of dealers, of its being adulterated, more especially, however, in the form of powder, a circumstance which may bring it into discredit, I have therefore taken some pains in collecting specimens of it, and arranging them in the order of their goodness, chiefly for the benefit of the young Gentlemen who attend my Lectures. The many applications to me on this subject, rendered this plan necessary, the Red Bark being hitherto little known by Apothecaries in the country. The efficacy of this remedy is so well established, that it is a matter of very little consequence, if Botanists should still suppose that there are not Data sufficient to determine whether it be from the same species or not, with the *Cinchona Officinalis* of Linnæus. My friend, Dr. Hope, Professor of Botany, in the University of Edinburgh, in a Letter to me, says, "If this Red Bark, which seems to be more efficacious than the Common Bark, can be had; that is the great point, and whether it be, or be not, the *Cinchona Officinalis* of Linnæus, is but a secondary, and much less important consideration; however, I think your opinion the most probable; your Treatise will, I think, have



“ have the effect of making the public attend to this  
 “ matter, and of rendering the use of it more general.”

Since the following pages went to the press, I have seen some exceeding good Red Bark, imported by a Spanish Merchant, a considerable part of which was as small as the Quilled Bark in common use, but it still preserved its Redness in that form, approaching, however, more to the colour of Cinnamon; it was evidently more compact and heavy than common Quill Bark, and appeared extremely resinous, its exterior coat, thin, whitish, and rough; it broke brittle, and gave evident proofs of its being the Quin of the larger Red Bark, which was in the same chest: this conveys the agreeable information of its being either a variety of the *Cinchona Officinalis* of Linnæus, or perhaps a distinct species, so that the trees may not be considered as in danger of being destroyed by the introduction of this Bark. A difference of colour in the same species is often influenced by age, soil, or exposure.



O F T H E  
G E N E R A L H I S T O R Y  
O F T H E  
R E D B A R K.

I H A D long suspected, that the Peruvian Bark in common use, was very inferior in power and efficacy to that recommended by the early writers on the subject; but more especially by our countrymen, MORTON and SYDENHAM, in whose works the medical virtue of this drug, in Intermittent and other Fevers are extolled as little short of infallibility. In their time the Quill Bark, (at least such as is now in use), was not mentioned; their cotemporary writers on the *Materia Medica*, evidently describe the Peruvian Bark of that period, as of a larger kind, of more compact pieces, and of the colour of the rust of iron, which marks are very expressive of the Red Bark; the innermost coat of which has an ochrey appearance, and its resinous or middle layer resembles very much the *Lapis Hæmatitis* \*. M. LA CONDAMINE expressed his surprise, when he was told by Mr. THOMAS BLACHYNDEN, Director of the English South Sea Company, at Panama, that the writers on Pharmacy and *Materia Medica* in England had preferred the Small and Quill Bark, while the inhabitants of New Spain, held

\* Cortex crassitie mediocri, foras scaber, paululum canescens, aliquando musco obductus, intus lævis, coloris ferruginei, saporis acris et intense amari. Autumno colligitur et cortex circumcirca delibratur, tam trunci quam ramorum.

*Dalei Pharmacologia, p. 201. Anno 1692.*



held the larger Bark in higher estimation. \* I can only explain such a preference from this circumstance, that the larger pieces of Bark, which were imported into this country along with the smaller Bark, were either of a fibrous, spongy, or ligneous texture; or probably, damaged by moisture, and taken from the decayed trees.

Druggists have sometimes suggested this as an argument against the use of the Red Bark, and many probably endeavour to oppose its introduction, until the quantity in the markets be greater, and more equally divided among them, or until they have been able to dispose of the large quantity of common Bark they have in their ware-houses.

The taste and flavour of the Red Bark is more difficultly evolved, and is therefore at first not so obvious from the closeness of its texture, and from the resinous coat being so well defended and inclosed between two other layers. It is evidently heavier than any other kind of Bark, and seems to have been prepared and dried with greater attention, its original appearance and form being better preserved.

I think it probable from a more attentive view of the subject, that it may be the Bark of the trunk, or  
larger

\* They commonly reckon three species of the Quinquina, though some make four; the white, the yellow, and the red; I was told at Loxa, that these three kinds differ in their virtue only; the white having scarce any virtue, and the red excelling the yellow.

The trees from whence the first Bark was taken, which were very large, are all dead, having been entirely stripped, which infallibly kills them when they come to be old. Experience has shewn, that stripping kills some of the young ones also, but the greatest part escape. For this operation they use a common knife, which they hold in both hands; the barker sticks it into the bark as high as he can reach, and so draws it downwards as low as he can. It does not appear that the trees which grow where the old ones stood, have less virtue than they, the situation and soil being the same; the difference, if there be any, may arise, perhaps, from the different ages of the trees. Few but young ones are now to be met with: I do not remember to have seen any much thicker than my arm, or above 12 or 15 feet high; those which are cut young, shoot forth new branches from the stumps.

I was



larger branches of the tree, and I am the more confirmed in this opinion by the ideas of my friends Dr. Withering and Dr. Fothergill, conveyed in their letters to me, in which they observe, that the essential and active parts of the Oak Bark are more entire, and in larger quantity in the trunk and larger branches, than in the twigs or smaller branches, which are comparatively of an imperfect growth; perhaps the Small and Quilled Bark may be procured from younger trees, not yet arrived at their full maturity, and therefore yielding a Bark of a weaker quality \*.

I am justified very much by the analogy of other Barks, and by the influence of soil and exposure, in changing the appearances, and even of affecting the virtues of the same species of vegetables, to conclude, that the diversity both in size and colour of the Red Bark from the common Peruvian Bark, may depend  
B either

I was informed at Loxa, that heretofore they preferred the coarsest Bark, and laid it by as a rarity, but now the finest is most esteemed: The merchants may possibly find their account in it, as it takes up less room in packing. But a Director of the English South Sea Company at Panama, through which all the Quinquina that comes to Europe must pass, assured me, that the preference given at present to the fine Bark, is in consequence of several chymical analyses and experiments which have been made on both sorts in England. It seems probable, that the difficulty of thoroughly drying the large coarse Bark, and the humidity it is naturally apt to contract and retain, has helped to bring it into disrepute. Vulgar prejudice will have it, that to lose nothing of its virtue, the tree should be barked in the moon's decrease, and on the east side. These circumstances, as also its being gathered on the mountain of Cajanuma, were certified by a Notary in 1735, where the Marquis de Castelfuerte procured a quantity of Quinquina from Loxa, to carry to Spain on his return.

*Memoir de l' Acad. d. S. 1738.*

• Mr. Arrot, a Scotch Surgeon, who had gathered the Bark in the place where it grows, says, that the small curled Bark so much esteemed in England, is the Bark of younger trees, which frequently recover the Barking, while the older trees never do. This affords a strong proof, that the early bark introduced into Europe was of the larger kind, and from the older trees, while the difficulty of procuring it, has been the means of introducing a small and younger Bark. Mr. Arrot, and every other Traveller agrees in preferring the Red Bark to any other.

*Encyclopædia. Cortex. Vol. I.*



either on the largeness of the branches, or on other circumstances not necessarily implying a specific difference in the tree.—On comparing the larger Bark of the Oak with its twig Bark even collected from the same tree, I find the former of a reddish colour, while the latter is much paler, the roughness of the coat of the larger Oak Bark and its general appearance may be compared to that of the Quill Oak Bark, as the Red Bark is to the common Peruvian Bark; and I have not only learned from consulting Tanners on this subject, that the larger Bark is superior in its powers as an astringent; but I have found by comparing infusions of both, and submitting them to the most decisive experiments regarding their astringency, by adding to them solutions of iron, that the precipitates were of a blacker colour and in greater quantity, from the larger and more compact pieces of Bark, than from the smaller twig Bark.—I have convinced many medical gentlemen, who have seen my specimens of the Oak Bark, that they tend very much to illustrate and confirm the opinion that the Red Bark is the *Cinchona Officinalis* of *Linnaeus*.

The following description of the Peruvian Bark taken from Pomet is likewise a further confirmation of this doctrine;—“The *Kinquina* is the bark of a  
 “ tree that grows in *Peru*, in the province of *Quitto*,  
 “ upon the mountains near the city of *Loxa*. This  
 “ tree is almost the size of a Cherry-tree, the leaves  
 “ round and indented; it bears a long reddish flower,  
 “ from whence arises a kind of pod, in which is  
 “ found a kernel like an almond, flat and white,  
 “ cloathed with a slight rind; that Bark which  
 “ comes from the trees at the bottom of the mountains  
 “ is thicker, because it receives in more nourishment  
 “ from the earth; it is smooth, of a whitish yellow  
 “ without, and of a pale brown within. That  
 “ which comes from trees on the top of the mountains  
 “ is abundantly more delicate; it is uneven,  
 “ browner



“ browner without, and of an higher colour within ;  
 “ but the trees which grow on the middle of the  
 “ mountains, have a Bark yet browner than the other  
 “ and more rugged. All these Barks are bitter, but  
 “ that from the trees at the bottom of the mountains,  
 “ less than the others.

“ It follows from hence, that the Bark of the least  
 “ virtue, is that which grows in the lowest places, be-  
 “ cause it abounds more with earthy and watry parts,  
 “ than that which grows high, and which for the  
 “ contrary reason is better ; but the best of all is that  
 “ which grows in the middle of the mountains, be-  
 “ cause it has not too much or too little nourishment.  
 “ There is another kind of Bark which comes from  
 “ the mountains of *Potosi*, and is browner, more aro-  
 “ matic, and bitterer than the former, but abundant-  
 “ ly scarcer than any of the rest.

“ The conditions or qualities we ought to observe  
 “ in the Bark, are, that it be heavy, of a firm sub-  
 “ stance, sound and dry. Beware of such as is rot-  
 “ ten, and will sink in water presently, and that flies  
 “ into dust in breaking, or is dirty and unclean, as it  
 “ happens to be sometimes ; but make choice of such  
 “ as is in little thin pieces, dark and blackish without,  
 “ with a little white moss, or some small fern-leaves  
 “ sticking to it, reddish within, of a bitter and disa-  
 “ greeable taste ; and refuse that which is full of  
 “ light chives when broke and of a russet colour, and  
 “ take care that there be not several pieces of wood  
 “ mixed with it, which you have more of sometimes  
 “ than the Bark.

“ This was brought first into France in the year  
 “ 1650, by the Cardinal Lago, a Jesuit, who having  
 “ brought this from Peru, it was had in such vogue  
 “ in France, as to be sold weight for weight at the  
 “ price of gold.”

I have since the publication of the first edition of  
 this treatise, extended my enquiries into other coun-  
 tries,



tries, from which I am convinced that there cannot a doubt be entertained of its being the *Cinchona Officinalis*. I have a specimen of the Red Bark which was given me by Mr. Babbington, the Apothecary of Guy's Hospital—it contains in it a branch of Quill Bark, exactly as it was imported.

I have seen some specimens of Red Bark so very large, that they contained a great proportion of woody part, and therefore less fit for use than those of a more moderate size ; indeed from having made such frequent experiments on this subject, I am able with great precision to ascertain the comparative quantity of resin in any two pieces of Bark from their external appearance.

It has been suggested by some, that the Red Bark resembled much the mahogany Bark ; but having examined that Bark, and having conversed with persons to whom it is extremely familiar, I am persuaded that there is no foundation for the opinion of its being the same. If future naturalists, by having better opportunities of investigating this part of our subject, should be persuaded that it is the Bark of a tree of a different *genus*, or *species*, from the *Cinchona Officinalis*, such a discovery cannot invalidate the proofs of its superior efficacy ; and I should have been happy had it been found to be the production of any of our colonies, instead of its being as yet known in Europe only as a native of South America. Several very intelligent men, who were disposed to think it the Bark of a different tree, immediately changed their opinion, from examining it in tincture, decoction, or infusion, in which forms it conveys the genuine taste and flavour of the common Peruvian Bark, under the appearance of a much stronger impregnation. I suspect that we have been long in error by judging chiefly of the goodness of Peruvian Bark, from the colour of its external coat. I have seen some specimens of Red Bark extremely rich in resinous parts with a very  
white



white coat, but whose inner layers were compact, and of a dark red or ochry colour. I have examined twenty chests of this Red Bark in the very state in which it was imported, and there is always found a very considerable proportion of Quill Bark amongst it.

If the execution of this work was equal to its importance, it would challenge the attention of the public, in a degree far above most medical subjects. This will be unquestionably admitted by those who have been eye witnesses to the malignancy and fatality of intermittent and remittent Fevers, in every part of the globe, but more especially in warm climates; this fatality is by no means owing to the ignorance or unskilfulness of the practitioners in those countries, but to the inefficacy of the common Bark in general use.

The numbers who fall a sacrifice to the epidemic and seasoning Fevers of warm climates, are admitted infinitely to exceed those who are destroyed by the enemy. In almost all the dangerous Fevers which occur in our East and West India settlements, the Bark is a principal remedy. I think it therefore an object of the greatest national importance, that our fleets and armies should be liberally supplied with this Bark, which will seldom or ever disappoint them.

I have been told by a druggist, that its great activity rendered it a dangerous remedy; my answer was, that wine mixed with water was much safer in the hands of an unskilful practitioner, than wine alone, but that did not prove that wine was not a better cordial than water. The same reasoning may be applied to prove, that weak and decayed remedies, by being much milder in their operations, are therefore preferable to such as are more perfect of their kind. I believe the general, and best founded complaint is against the want of power and efficacy of Bark, and not that it is too powerful and active. In proof of this, I refer my readers to the letters annexed, which demonstrate, that  
such



such was the stubbornness and obstinacy of the intermittent Fevers of the present year, even in this country, that they resisted common Bark, and only gave way to the Red Bark.

Notwithstanding I formed very early a favourable opinion of this Bark, yet it fell far short of that which I am justified in maintaining, from the collected evidence of so many gentlemen in distant and remote parts of the country. Many letters which I have received, are written with such zeal in favour of its superior efficacy, that they could only be dictated by the strongest conviction, arising from extensive and diligent observations.

I have persuaded many of my medical friends to use the Red Bark in our foreign settlements, and I shall take pleasure in communicating to the public the result of their observations as soon as I am favoured with them. A more powerful Bark is particularly desirable in those countries, where the violence and danger of the paroxysm is so great. In the following observations, I have confined myself very much to the use of the Red Bark in febrile diseases, but I am in possession of many facts in proof of its superior powers in other diseases, in which the common Peruvian Bark has been found useful.

The introduction of the Red Bark into this country was the effect of chance. In the year 1779, a Spanish ship from Lima, bound to Cadiz, was taken by the Hussar frigate, and carried into Lisbon; her cargo consisted chiefly of this Bark, some part of which was immediately imported into this country, and a considerable quantity was bought at a very low price at Ostend, by some of our London Druggists. The boxes in which it was brought to Europe were of the same kind as those in which the common Peruvian Bark was contained, and all sold by the general title of Quinquina. The Druggists in whose hands the Red Bark at first was, found it difficult to dispose of  
it,



it, its appearance was so very unlike that of common bark; at last they offered it by way of trial to such Apothecaries as reside in counties where agues are frequent; the success attending its use soon convinced them of its superior efficacy. It was early introduced into the hospitals, and its greater powers became universally acknowledged. It has continued ever since in general use in the Hospitals of St. Bartholomew, St. Thomas, Guy, and the London. The reputation, therefore, of the Red Bark stands better established, and is supported by the concurring testimony of more Physicians, than that of any other article of the *Materia Medica*. I am assured by every Druggist with whom I have conversed on the subject, that the demand for it in this country is pressing and general. I am likewise informed, that the markets may be well supplied with it; and, as it is no longer in the hands of a few dealers, the prejudices of the Druggists have subsided, and I have lately heard nothing of its destructive qualities, which were said to have arisen from its superior powers.

Being highly sensible of the difficulty of establishing such facts, either on the effects of remedies, or on any branch of medicine which regards the animal economy, I have solicited the opinion of many ingenious and attentive practitioners, who from their situation have had frequent opportunities of trying the Red Bark. This caution appeared the more necessary, because I am well persuaded that the love of novelty, and too great a credulity in admitting facts on very doubtful authorities, have corrupted medicine more than any other science, and proved more injurious than the most absurd and fanciful theories, the errors of which are easily detected.



## OF ITS SENSIBLE QUALITIES.

THE Red Bark is in much larger and thicker pieces than the common Peruvian Bark. It evidently consists of three distinct layers. The external, thin, rugged, and frequently covered with a mossy substance, and of a reddish brown colour\*. The middle, thicker, more compact, and of a darker colour. In this appears chiefly to reside its resinous part, being extremely brittle, and evidently containing a larger quantity of inflammable matter than any other kind of Bark.

The innermost has a more woody and fibrous appearance, and is of a brighter red than the former.

The intire piece breaks in that brittle manner described by writers on the *Materia Medica*, as a proof of the superior excellence of the Bark.

In reducing it to powder, the middle layer, which seems to contain the greatest proportion of resin, will not give way to the pestle so easily as the other layers; this should be particularly attended to when it is used in fine powder. Its flavour is chiefly discoverable either in powder or solution, is evidently more aromatic, and has a greater degree of bitterness than the common Bark.

## OF ITS CHYMICAL AND PHARMACEUTICAL HISTORY.

## EXPERIMENT I.

TO an ounce of Red Bark, reduced to a fine powder, were added sixteen ounces of distilled water; and

\* I have lately seen some very good Red Bark whose external coat had a white appearance, though its internal surface is of a deep red colour, extremely resinous, compact, and heavy.



and after remaining together twenty-four hours in a Florence flask, the liquid was carefully filtered. The same experiment was made with the Peruvian Bark commonly in use.

The colour of the two infusions was very different, that made with the Red Bark being much deeper. The taste and flavour of the infusion of the Red Bark were considerably more powerful than of the other. In the opinion of many gentlemen who tasted the infusions, the cold infusion of the Red Bark was more sensibly impregnated than even the strongest decoction of the common Bark.

## EXPERIMENT II.

TO two ounces of the cold infusion of Red Bark, were added twenty drops of the *Tinctura Florum Martialis*. It immediately became of a darker colour, soon lost its transparency, and after a short time precipitated a black powder.

## EXPERIMENT III.

TO two ounces of the cold infusion of the common Bark were added twenty drops of the *Tinctura Florum Martialis* in the same manner as to the other. It retained its transparency some time, and afterwards became of a dark colour, but there was no precipitation from it as from the last.

## EXPERIMENT IV.

TO an ounce of Red Bark, reduced to a coarse powder, were added sixteen ounces of distilled water, and after boiling until one half was evaporated, the liquid while hot was strained through a piece of linen. The same experiment, under similar circumstances, was made with the common Bark. The superior taste



and flavour of the decoction of the Red Bark was equally observable with that of the infusion. The decoction of the Red Bark, in cooling, precipitated a larger quantity of resinous matter than the decoction of the common Bark. The difference of colour was likewise very distinguishable.

### EXPERIMENT V.

To an ounce of Red Bark, reduced to a coarse powder, were added eight ounces of proof spirit, and, after standing a week together, the Tincture was filtered.

The same experiment, under similar circumstances, was made with the common Bark. The Tincture of the Red Bark, both when tasted by itself and under precipitation by water, had more flavour and taste than that of the common Bark.

The Tincture from the Red Bark is of a much deeper colour than the other.

### EXPERIMENT VI.

To each *residuum* of the above Tinctures were added eight ounces of proof spirit, which were infused in a moderate sand heat for the space of twenty-four hours, and afterwards allowed to remain together a week, occasionally agitating them. The Tinctures were then poured off, that of the Red Bark evidently appearing to be the strongest.

The Tinctures both of Experiments V. and VI. were by a gentle heat evaporated to the consistence of a resinous extract.

The extract from the Tincture of the Red Bark was of a smooth, homogeneous appearance, not unlike the Balsam of Peru, when thickened : The flavour and taste of the original Tincture were intirely preserved in it,

The



The extract from the Common Bark had a very different appearance. It seemed coarse and gritty, and by no means so characteristic of its original Tincture.

The quantity of extract procured from the Red Bark was considerably greater than from the same quantity of common Bark ; but as the *residuum* of neither was rendered entirely inert, the absolute quantity could not be ascertained. \*

## EXPERIMENT VII.

A tea spoonful of each of the Tinctures, prepared by Experiment V. was added to two ounces of water; the resinous precipitation from the Red Bark was not only more copious, but fell more quickly to the bottom of the glass than that from the other, and yet what remained still dissolved in the water, was infinitely more in the Red Bark than in the common Bark, so far as we could judge from the taste and flavour of both.

## EXPERIMENT

\* To 26 lb. of Red Bark were added 26 gallons of proof spirit, after remaining together for some time the Tincture was poured off, and submitted to a distillation in a water bath, the quantity of spiritous extract obtained was 12 lb. and a half ; a quantity of water being poured on the *residuum* of the Tincture, the watery extract obtained was 4 lb.

In another experiment with 30 lb. of Red Bark, of an inferior quality, treated in the same manner as the former, only 11 lb. and a half of spiritous extract was procured, and 4 lb. and a half of watery extract.

To the same quantity of the best Peruvian Bark hitherto in use gives from 6 lb. and a half to 7 lb. and a half of spiritous extract.

It may be proper to observe, that the facts here mentioned are on the authority of a very eminent druggist, who had accurately marked the quantity of extract obtained by the usual process from a given quantity of Red Bark at two different trials; the reader will likewise observe, that although the spirit employed for making the Tinctures may have been saturated with resin, yet a fresh quantity was not poured on the *residuum*, which by extracting the whole resin would have yielded a larger proportion of resinous extract, and consequently left little or nothing for the watery extract. Though these experiments were not made with any view to a philosophical purpose, yet I am sufficiently convinced of their accuracy; they are more conclusive than experiments conducted on a much smaller scale.



## E X P E R I M E N T VIII.

In imitation of the experiments of my ingenious friend Dr. Percival, I added to two ounces of the watery infusion of each Bark a few drops of the *Sp. Vitriol, ten*. The acid lost its taste more in the infusion of the Red, than in the common Bark, so that there were more obvious appearances of its being neutralized.

## E X P E R I M E N T IX.

A decoction of both Red and Common Peruvian Bark was prepared by taking an ounce of each and boiling them in a pint and a half of water, to one pint ; the former had greatly the superiority in strength and power, as mentioned in a preceding Experiment. A pint of fresh water was added to each decoction ; the boiling still continued till that quantity was evaporated. The decoction of the common Peruvian Bark seemed gradually to lose its sensible qualities, while that of the Red Bark still retained its own.

The same quantity of water was added as before to each, and the decoction repeated until a gallon of water was exhausted ; at the expiration of which time, the common Peruvian Bark was rendered almost tasteless ; the Red Bark still retained nearly its former sensible qualities. This experiment proves that the common practice of boiling the Bark is hurtful to its powers.

By my desire Mr. Skeete, a very ingenious and attentive young gentleman from Barbadoes, and a student of medicine in Guy's Hospital, made several Experiments in order to ascertain the comparative antiseptic power of Red Bark, with the common Peruvian Bark ; and he found that the infusion of Red Bark preserved animal matter much better, and for a longer



ger time, than the infusion, or even decoction of the common Bark, indeed, the decoction of common Bark, after its powdery part had subsided, was less bitter, and preserved animal matter for a shorter time than the infusion of the same Bark. His experiments were conducted with great accuracy, and the result of them were submitted to the examination of many gentlemen at Guy's Hospital.

The conclusions to which the above experiments evidently lead, are,

First, That the Red Bark is more soluble than the Peruvian Bark, both in water and spirit.

Secondly, That it contains a much larger proportion of active and resinous parts.

Thirdly, That its active parts, even when greatly diluted, retain their sensible qualities in a higher degree than the most saturated solutions of common Bark.

Fourthly, That it does not undergo the same decomposition of its parts by boiling, as the common Peruvian Bark.

Fifthly, That the Red Bark is more astringent than the common Peruvian Bark.

Sixthly, That its antiseptic powers are greater; as an additional proof of this it may be proper to observe here, that both its cold infusion and decoction preserved entire their bitter and other medicated powers in the month of June, in the Laboratory of Guy's Hospital for five weeks, and perhaps for a much longer time, while a decoction of common Bark gave evident marks of a change in a few days. In the decoction of Red Bark, the powder, which is separated during the cooling of it, remains intimately diffused through the liquor, which therefore continues loaded and turbid when at rest. In the decoction of common Bark, the powder quickly subsides to the bottom, the Red Bark therefore contains in it a large proportion of mucilaginous parts, such as have been proposed



posed by the late Dr. Fothergill, to be added to the decoction of the common Peruvian Bark, in order that it may remain turbid when at rest, and thereby that its resinous parts be more perfectly suspended in the body of the liquor. It is obvious, that this circumstance will favour exceedingly the action of the stomach upon it.

The advantages therefore to be expected from the Red Bark cannot be obtained from any quantity of common Bark, the best common Bark, compared with the Red Bark appears inerte and effete.

All the above experiments were executed in the presence of several Gentlemen.

I was led more particularly to prosecute this subject, from an opinion that the Red Bark might so impregnate cold water by infusion, as to cure Intermittent Fevers with more certainty than could be done even by the decoction or powder of common Bark: The sensible qualities which appear from the above Experiments, being so much greater, in the cold infusion of the one than in the decoction of the other.

It cannot I think be denied, that the Experiments above related, and which have been executed and frequently repeated with great accuracy, sufficiently prove, that the Red Peruvian Bark, exceeds the other in its sensible qualities, and that it contains a much larger proportion of those resinous and active parts on which the power and efficacy of Bark have been by all writers on the practice of medicine and *Materia Medica* believed to depend.

## OF THE GENERAL OPERATION OF BARK ON THE HUMAN BODY.

THE following remarks are intended to apply to the Peruvian Bark, generally in use; but I am certain  
that



that the effects enumerated are found to be produced in a much higher degree by the Red Bark.

The cold infusion of Bark seems evidently to promote both appetite and digestion, it increases the tone and action of the stomach, by which the gastric liquor, the great *Menstruum* of our solid aliment, is more perfectly prepared.

In most cases, the Bark rather promotes costiveness, the common effect of strong and vigorous intestines. In very large doses, however, it generally proves purgative, but this effect ceases after a short time.

It renders the pulse stronger and fuller in health, and in most diseases unaccompanied with Fever.

In Low and Malignant Fevers, and more especially under remission, it renders the pulse stronger and even slower.

In particular circumstances of Fever marked with debility and a tendency to remission, though of a very irregular type, it diminishes febrile heat.

It encreases the animal heat and aggravates every symptom, in Fevers accompanied either with much local inflammation, or a general inflammatory diathesis, which is strongly indicated by the pulse, the manner of the original attack, the want of due freedom in the secretions, and the painful and oppressive exercise of every function.

It checks profuse and colliquative discharges, especially those by the skin, while it does not seem to diminish insensible perspiration, or other natural evacuations.

It checks every tendency to putrefaction or gangrene, occurring under circumstances of debility, but it may promote both, if injudiciously employed, while the action of the system is too violent, or the inflammatory diathesis is too prevalent. It seems more reasonable to refer its action, as an antiseptic, to its tonic power



power on the moving system, than to any primary action on the animal fluids.

Perhaps this doctrine will apply in explaining the history of remedies used in the Scurvy, a disease invited and favoured by every means which can induce debility, and evidently preceded by symptoms of a diminished *vis vitæ* which necessarily lead to others that in a secondary manner only take place in the animal fluids\*.

It promotes under many circumstances a favourable suppuration, and improves the nature of sanious and ichorous discharges.

Its action here can only be explained from its general tonic power, for either general or local debility retards suppuration, and favours the obstinacy of ill-conditioned ulcers.

Upon the same principle its power of promoting the generation of true *pus* in the small-pox may be explained.

The period of debility is that only in which the Bark should be employed.

I have seen patients under the most confluent Small Pox require Bark in the progress of suppuration, and yet, in the more advanced state of the disease, the same persons have been saved by the seasonable and repeated use of the Lancet in the secondary Fever, which attacked with fresh rigors and inflammatory symptoms of a true Peripneumony.

In delicate and irritable habits, which seem more especially to favour scrophulous affections, and which produce inflammation of a peculiar nature, that gives way sooner to tonics than evacuants, the Bark has been found the best remedy: this may probably admit of the explanation already given on the subject of Scurvy.

OF

\* An Enquiry into the source from whence the Symptoms of Scurvy and of putrid Diseases arise, by Dr. Milman.



## OF ITS USE IN THE CURE OF INTERMIT- TENT FEVERS.

WHAT I have to offer on this subject is the result of careful, and diligent observation, totally unconnected with prejudice of any kind, in favour of any particular theory, or a blind attachment to system.

Notwithstanding the cautious and timid practitioner has very generally forbid the use of Bark until evacuations should have been made ; I am very well persuaded from observation, that in Intermittent Fevers, such as rage and are endemic, particularly in low and marshy situations, and such as frequently occur on the banks of the Thames, and the lower parts of this metropolis, the Bark cannot be given too early ; the use of emetics or purgatives, as preparatory, is not only unnecessary, but in some cases productive of greater debility, and therefore to be avoided.

The doctrine of concoction, however just it may be in continued Fevers, and in some cases of inflammation, does not apply in Intermittents produced by the *Miasmata* of low and swampy grounds, and which afford the principal source of agues in the environs of this city.

In this opinion I am confirmed by the testimony of Dr. Cleghorn and others ; who frequently found it necessary to give it on the first accession of the disease, in order effectually to obviate, or weaken the return of a second paroxysm, which in many cases would inevitably have proved fatal ; and Dr. Lind has very properly observed that such symptoms which have been attributed to Bark, are rather the effects of the paroxysm being allowed to return, from the neglect of that medicine.

There are many symptoms which would forbid the use of Bark, did they occur distinct and independent of Intermittent Fever, such as Cough, difficulty of  
D breathing



breathing and pain in the side : they are frequently brought on by the paroxysm of Intermittent, and only give way to the use of the Bark by which that paroxysm may be prevented. Such symptoms do not admit of a distinct and separate treatment, but are always aggravated by the use of evacuants, more especially bleeding, the most probable means of relief in common Depuratory Fevers.

I have sometimes found a complication of Intermittent and Hectic Fever in the same person and could distinguish between the paroxysms of each ; the Bark, while it cured the Intermittent, has even moderated the Hectic ; though Hectic Fever of itself, especially as a symptom of *Phthisis Pulmonalis* does not appear to give way at any time under the use of the Bark ; I think it probable, therefore, that although in the treatment of intermittents, complicated with other diseases, our chief attention should be first directed to the cure of the intermittent, yet it may be necessary to pursue an indication that may have in view the other disorders, not incompatible with the treatment of the Intermittent. In Dropsies, which accompany Intermittents, I have found more benefit from the use of Bark, joined to the neutral salts, and other mild diuretics, than from active purgatives, which always tend to protract the Intermittent. Every returning paroxysm of an ague confirms more and more the cause of that disease which it has produced.

It is not intended to insinuate, that no cases do occur, in which it may not be prudent to administer a vomit, especially to persons subject to bilious accumulations in the stomach ; but this is more with a view of removing an obstacle to the operation of Bark, than as necessary to render it safe ; and I have frequently seen nausea and vomiting so much a symptom of the paroxysm, that they gave way only to the free use of Bark itself.

A practice



A practice more absurd than that of preceding evacuations has been adopted and recommended, *viz.* That of evacuating by purgatives after the cure had been compleated by the Bark, this seldom fails of bringing back the Intermittent, as one cause of inducing debility, the most favourable state of the body for the attack of Intermittent Fevers.

In persons who are rendered costive by the use of the Bark, I would recommend the common practice of giving a few grains of Rhubarb, or *Pilul Rusi*. If on the other hand it should prove purgative, a few drops of the *Thebaic Tincture* is the usual and best means of checking that operation.

Intermittent Fevers are frequently so very anomalous in their appearances, and assume so much the character of other diseases, that an unskilful, or inattentive practitioner may be deceived; they, however, under any form or any type, generally give way to the Bark; sometimes aided and assisted by other means.

Much experience is required to detect the paroxysm disguised under different forms, and although the Bark is our best remedy, yet the violence of some symptoms which accompany the disease, and interrupt its natural and usual form, render it necessary that other remedies be occasionally employed, as adapted to the particular circumstances of the case; not always so much with a view of rendering the Bark a safe remedy, as of rendering it an effectual one.

Such anomalous appearances are greatly influenced by the nature of the prevailing epidemic of the season, they more particularly interrupt the progress of the cold fit, and are generally much aggravated during the paroxysm of the Intermittent.

The disorders which I have seen complicated with Intermittent Fevers have been chiefly those of a bilious kind, occuring in the autumnal season, such as violent and excessive vomiting, *Diarrhæa*, with pain in  
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the bowels, Cholera Morbus, periodical Head-Achs, Pain in the Side, and frequent inflammatory disorders, such as Pleurisy, Peripneumony, and the acute Rheumatism, and even sometimes spasmodic diseases, terminating in apoplexy and death.

Such diseases have been supposed to be only varieties of the Intermittent Paroxysm, and have been believed to give way to the same remedy which cures an ague.

I think, however, we have no analogy in nature to support this doctrine, and it seems highly unreasonable to suppose, that the same cause can produce such a diversity of appearances. Indeed the influence of the prevailing epidemic diseases on sporadic complaints evidently shew, that the human body is subject to be acted upon by more than one cause at a time, and that the remedies to be employed should have a view to such a diversity of circumstances. It therefore becomes the object of the physician to know which of two or more diseases are most deserving of his early attention, which the human body may labour under at the same time. He will generally find, that as the paroxysm of an Intermittent Fever excites such violent action in the system, and generally aggravates the symptoms of other diseases, it ought to be early removed.

In some cases however I have seen such active appearances of inflammation prevailing in a person labouring under an Intermittent Fever, and so much increased in the hot fit, that unless a quantity of blood had been taken, which was always fizy, the patient most probably would have died. Such symptoms of inflammation retard the cure of the Intermittent, and therefore are in the first instance to be removed.

This may probably explain the reason why inflammatory Fevers in their decline often assume the appearance of Intermittent diseases.



In the same manner it may be necessary to remove Symptomatic Vomiting, Cholera Morbus, and the like, by remedies peculiarly adapted to these diseases, before the stomach will so far favour the action of Bark as to enable it to cure the Intermittent Fever.

Peruvian Bark is chiefly adapted to the cure of genuine and idiopathic Intermittent Fevers, and not those of a symptomatic nature, which frequently require remedies of a different kind.

It is impossible in a treatise of this nature to point out more minutely the circumstances which ought to regulate and direct the conduct of practitioners in the treatment of complicated intermittents, and the condition of the habit, which may render necessary the previous use of other remedies, or the combination of them with Bark, in order to render its operation either safe or effectual.

It appears to me, that the advantages at any time derived from the use of other remedies, depend upon their having removed some other disease, which may have protracted the ague, or interrupted the action of Bark in the cure of the Intermittent, and not on their obviating future effects which have been falsely attributed to Bark, while they are chiefly produced by the obstinacy and imperfect treatment of the Intermittent Fever.

Both the Vernal and Autumnal Intermittents of Dr. Sydenham yield to it, the latter however sometimes with more obstinacy than the former.

In several cases I have experienced the efficacy of the Red Bark in removing Tertians and Quartans which had resisted the common Bark, this however is not to be wondered at, when we consider the diversity in the power even of different kinds of the common Bark in general use.

I hope I shall be excused in digressing so far, as to mention the useful effects I have frequently experienced from the exhibition of Opium in Intermittent Fevers.



vers. We are chiefly indebted for this practice to Dr. Lind. It moderates so effectually the force of the paroxysm, by shortening the duration of the cold fit, as well as by diminishing the violence of the hot fit, that I had often flattered myself, it was capable of curing Intermittents. In this however I was disappointed.

From the experience of it in many hundred cases, I conclude with Dr. Lind, " That an Opiate given  
" soon after the commencement of the hot fit, by a-  
" bating the violence and lessening the duration of the  
" Fever, preserves the constitution so entirely unin-  
" jured, that since I used Opium in Agues neither a  
" Dropsy nor Jaundice has attacked any of my pa-  
" tients in these diseases." The manner in which I employ it, is either by giving a grain of the Thebaic extract upon the accession of the cold fit, or twenty drops of the Thebaic Tincture upon the accession of the hot fit, the action of the former being later from its slower solubility.

The Red Bark is so much warmer than the other, that it would seem to answer all the purposes derived from the union of Cordials, Aromatics, Serpentaria, and the like, so much recommended in the obstinate Quartan Intermittents of elderly people.

Some difference in opinion has prevailed regarding the manner of giving the Bark. Most practitioners concur in thinking, that it cures intermittents more readily when taken in substance than in any other form. In this state, it is both a bulky and nauseous dose in the quantity necessary to cure an Intermittent; at any rate, it ought rather to be diffused in some liquid, than given in the form of an electuary or pills, which are sometimes difficultly soluble.

I have found milk cover the taste of Bark, and make it more acceptable to children than any other vehicle. The extract of Liquorice dissolved in water, may be likewise employed to cover the taste of Bark.



Bark. Its taste is also corrected by wine, especially by Old Hock.

It would appear from the general preference given to Bark in substance, that its decoction, infusion, or tincture, are found too weak in any quantity for the purpose of curing Intermittents, otherwise as they are much lighter to the stomach and act more quickly, they should be preferred.

I hope to make it appear, that in this respect the Red Bark has the advantage of any other kind now in use, since either its infusion or decoction will cure Intermittents, and its powder in a much smaller dose than that of common Bark will produce similar effects.

The best time for giving the Bark is in the intermission between the paroxysms and when the stomach is empty. In Quartan Fevers, where there are two days of Apyrexia, we should be particularly desirous of getting down a larger quantity on the day immediately preceding the approaching paroxysm, and in other Intermittents as near the period of the returning paroxysm as the stomach will bear it.

A very prevailing argument in favour of the Red Bark has been suggested to me both by apothecaries and their patients, viz. that it will cure when taken in half the quantity which has been found necessary of other Bark. I am likewise persuaded from a great variety of trials, that while other Bark only gradually weakens the force of the Intermittent Fever, the Red Peruvian Bark will frequently obviate the return of a second paroxysm. It is seldom I have found it necessary to give more than half a dram every two hours in the interval of the fit, and in no one Intermittent, even of a Quartan type, have I found it necessary to give more than six drams between the paroxysms. I have frequently known double that quantity of common Bark fail to produce the desired effect.

It is however unnecessary to limit the dose. One dram may be given every hour, if the stomach will retain



tain it, and will perhaps in some cases remove the disease more quickly than a smaller quantity given at longer periods \*.

*The following facts will best determine how far I am justified in favouring the opinion of the superior excellence of the Red Bark.*

EDWARD VIRGOB, aged 21, had laboured under an Intermittent Fever five months. It was first a Tertian and afterwards became a regular Quotidian, accompanied with Cough, Dyspnœa, and Hoarseness, particularly in the paroxysm. The common Peruvian Bark, given in the dose of one dram every hour, prevented the return of the paroxysm for a few days; the patient however relapsed notwithstanding the Bark was continued, he was at last cured by taking one dram of the Red Bark every second hour for the space of ten days.

It appears from the above case of Edward Virgoe, and several others which have occurred to me, that Intermittent Fevers, which had resisted common Bark and other remedies, have yielded to the Red Bark, even under very complicated and unfavourable appearances.

In this opinion I am likewise justified by the experience and testimony of many eminent practitioners, and so decided are they in its favour, that the demand for it every day increases, especially in some of the neighbouring counties where Intermittents are not only more frequent, but more obstinate.

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\* I have likewise frequently adopted the practice recommended by Dr. Home, of giving the Bark as soon as the sweating fit of the Fever has sufficiently carried off the hot fit; this is particularly proper when the interval is short between the paroxysms.



I began now to suspect that its powers were even sufficient in cold infusion in most cases to cure Intermittent Fevers, and in all other cases to answer every purpose which might be expected from common Peruvian Bark, in any form in which it had hitherto been employed.

*The following facts are sufficient to authorise this opinion.*

JAMES YOUNGMAN, aged sixteen, had laboured under a Tertian Intermittent many months; it was accompanied with a severe cough, and his strength was considerably impaired. He was ordered to take four ounces of the cold infusion of the Red Bark every third hour; after taking it for two days, the paroxysm did not return. Its use was persevered in fourteen days, and he continued perfectly well.

THOMAS PUGH, aged twenty-two, from Woolwich in Kent, had an Intermittent Fever of five weeks standing of the Tertian type, accompanied with a considerable degree of cough, occurring especially in the cold fit; he took the cold infusion, as recommended in the former case, after which time he had only one slight return of the paroxysm, his cough is likewise totally removed.

JOHN WELDING, aged twenty-five, had an Intermittent Fever at Sheerness, for near a year, he took large quantities of common Peruvian Bark, without effect. It was of the Quotidian type. After taking a cold infusion of the Red Bark in the quantity of a quart in twenty-four hours for three days, the paroxysm disappeared and has never since returned. It proved at first purgative, but soon lost that effect. His strength and appetite were greatly improved under the use of the infusion.



Since the first edition of this work, I have had frequent experience of the efficacy of the cold infusion in the cure of Intermittent Fevers, but it requires to be continued for a greater length of time than is necessary, when the Bark is taken in substance with wine. I have however seen cases where the stomach had rejected the Bark in substance, which yielded readily to the cold infusion when taken in the dose of four ounces, every two hours in the interval of the paroxysm. I have likewise met with cases of Intermittent Fevers so complicated with other disorders, as to make it necessary to act more gradually and cautiously on the constitution, by the use of the cold infusion, than by giving the Bark in substance in the doses necessary for instantly removing the Intermittent Fever.

As I consider a perseverance in the use of the Bark proper for some time after the paroxysm has been removed, I think that it is only necessary to have recourse to the cold infusion for that purpose, and it will be found a much more agreeable preparation than any other. I have found great benefit from continuing its use in the convalescent state of persons after Intermittent and other Fevers.

I could here enumerate a great variety of cases which have occurred to me, both in public and private practice, in confirmation of the general doctrines I have now laid down, but I think it better to mention the general result of a successful practice.

The cold infusion employed in the above cases was prepared by pouring a quart of cold water on two ounces of the Red Bark in fine powder, frequently agitating them for the space of twenty-four hours\*.

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\* Though the cases above mentioned, evidently prove that the cold infusion will cure Agues, yet they are not intended to divert the attention from other more effectual means of giving this medicine.



## OF ITS USE IN THE CURE OF OTHER FEVERS.

Remittent Fevers are frequently equally steady in their periods of remission and accession with those of the intermittent kind, but the *Apyrexia* being less perfect and complete, has given rise to many doubts regarding the safety of giving Bark. As remittent Fevers are more particularly marked by appearances indicating the prevalence of bile in the stomach; the propriety of giving an emetic, prior to the use of the Bark, seems well founded, and the remission is frequently rendered more complete by such a practice.

In the remitting fevers, however, of warm climates, the accession of the paroxysm is so extremely violent, and the strength of the patient so quickly exhausted, that it becomes absolutely necessary to catch the first opportunity of the most trifling remission, and to give the Bark with the same freedom that you would do in common Intermittents.

In Remitting Fevers, the concomitant symptoms are more to be regarded than in Intermittents, because they more especially disturb, interrupt and shorten the periods of remission; even in the warmest climates, and under the severest prejudices, it has been found necessary to take away a few ounces of blood to relieve pain in the head, oppression in breathing, an intense dry heat on the skin, and other symptoms protracting the paroxysm; by such means the remission has been brought on, and the Bark given with greater effect.

The Fevers of this country seldom have regular remissions, until they have been properly treated by evacuations; the inflammatory by bleeding, and the bilious by vomiting and purging.

When Fevers are brought into a state of obvious remission; that is, when the pulse becomes from ten



to twenty flower at some particular time in the twenty-four hours; when the restlessness, anxiety, and tendency to delirium abate; when the mouth and fauces are moist; when the organs of secretion, and especially the skin are more open and pervious, such symptoms of remission admit the use of Bark with the same freedom as in Intermitting Fevers.

The Acute Rheumatism, notwithstanding its inflammatory attack, and the appearance of the blood, and though the joints often continue inflamed several weeks, very early assumes the form of a Remitting Fever.

Under such circumstances, a perseverance in the *Antiphlogistic* plan is generally found to be ineffectual. I have in several cases of this kind, employed a cold infusion of the Red Bark, and the disease seemed to give way only to this treatment.

The Acute Rheumatism in its remissions assumes the form of a double Tertian, and the patient is frequently greatly exhausted by the profuse sweatings which terminate the paroxysm.

It is in such cases that I would particularly recommend the use of Bark. I have found this practice more successful, and it must be allowed to be more rational, than the use of *Volatiles* and *Guaiac*.

The tediousness, as well as the inefficacy of the antiphlogistic practice in the cure of the Acute Rheumatism, has frequently directed my attention to that disease in a particular manner, and after being repeatedly disappointed and dissatisfied by pursuing the usual mode of treatment recommended by the best writers, either ancient or modern, on the subject, I was determined to adopt other means, which I think have proved more successful. The Rheumatic Fever appears to me, notwithstanding the violence of its inflammatory symptoms, to be an Intermitting Fever in a state of disguise, and its periods are evidently, as I have already mentioned, those of a double Tertian.

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Its inflammatory symptoms, however, ought in a certain degree to be reduced by moderate bleeding, occasional purging, and great dilution, before it can be treated as an Intermittent Fever; it does not however appear to me incompatible with the ideas of its being inflammatory, to have recourse to the moderate use of the Bark, to obviate the weakness which may be induced by the necessary use of the lancet, nor does it appear repugnant to the idea of its being intermittent, that the inflammatory symptoms which render the intermittent anomolous and irregular, should be moderated and checked by an antiphlogistic treatment accompanying the use of Bark. I have found in many cases by this practice, the Rheumatic Fever greatly shortened, and the debility and torpor in the joints, which is frequently the effect of that disease, together with the disposition to the Chronic Rheumatism, generally prevented. The Acute Rheumatism appears from the state of the pulse, the tendency to profuse sweating, the deposition in the urine, the frequent accession of chilly paroxysm to be an Intermittent Fever, which is probably prevented from assuming the more usual and natural form of that disease by the inflammatory action on the joints, which I have sometimes seen merely local, (*i. e.*) unaccompanied with any general Inflammatory Fever in the habit: in such cases, while leeches have been applied to the joints, and the hemorrhage from them encouraged by fomentations, I have given Bark freely, which I have never known to increase the inflammatory symptoms while the usual means of promoting inflammation were guarded against. General and vague maxims, applied in reasoning on the action of Bark, and its tendency in all cases to promote inflammation are therefore ill founded, and had they not been corrected by experience and observation, would have deprived us the advantages we have derived from the use of this medicine in the cure of Rheumatic Fevers, Scarophulous Inflammation,



flammation, and perhaps a great variety of other diseases. I have seen in delicate and irritable habits Rheumatic Inflammation on the joints, accompanied with a low Nervous Fever, which gave way only to Bark and Sedatives.

In the Rheumatic Fever I generally begin about the seventh day from the attack with the cold infusion of the Red Bark, in the dose of three ounces every two or three hours, until the evening paroxysm comes on; nor am I, by this practice, in any degree, diverted either from, general or local bleeding, or evacuations by stool, when the circumstances occur which may render them necessary.

In that *low Fever*, which Huxham has so well described under the title of nervous, I have prescribed the cold infusion of the Red Bark with advantage, where the skin hath been soft, and the pulse under one hundred and ten.

In such Fevers, it chiefly acts as a Cordial in supporting the *Vis Vitæ*, and for which reason I think it may be given with advantage in the decline of all Fevers, even where the symptoms on the attack of the disease were evidently inflammatory.

Almost every Fever remits in its decline.

Fevers originally putrid and malignant, as arising from *Miasmata* and putrid vapour, very seldom occur in this City, they are most generally to be found in Fleets and in Camps, and in situations where air stagnates or where animal bodies are confined in a close place.

In such Fevers, the cure is effected by vomiting and warm Cordials; of the last is the Red Bark in an eminent degree.

It may be infused in wine, which will render its operation more antiseptic.

It intimately unites with the several acids, from which a very favourable operation in such cases may be expected.



In the Putrid Fever, attended with a gangrenous Sore Throat, I have in many instances experienced the efficacy of Bark, but care should be taken not to confound this disease with the *Angina Mucosa* of Dr. Huxham, or the *Angina Erysipelatosa* of Dr. Grant, diseases, though contagious, and accompanied with eruptions on the skin, evidently of the most inflammatory nature, and requiring the use of evacuations.

In *Petechial Fevers*, with symptoms of great prostration of strength, I have frequently seen the pulse not much quickened, and the animal heat very little encreased. In such cases I would recommend the use of the Red Bark infused in Old Hock.

I have seen a *Fail Fever* with no other distinguishing symptoms than Petechiæ and Debility; the tongue clean, the pulse moderate though small, and the secretions apparently not disturbed. In that case, blisters on the extremities, Bark and Wine, are the best remedies.

In general, we find that Fevers marked with symptoms of debility are chiefly found to remit, and therefore they admit of the use of Bark; by increasing the tone and vigor of the system, it opposes a returning paroxysm.

Fevers of more violent action, such as we denominate inflammatory, do not remit at least so obviously, until that action is moderated by Evacuations, so that they chiefly remit only in their decline.

The primary attack of most Fevers in this country, is attended with violent action, which is best moderated sometimes by the prudent use of the lancet, but most frequently, by the Tart. Emetic, with the infusion of Sena and some of the neutral salts. All Fevers beginning with a violent Rigor, and followed with great heat, require early evacuations, while such as creep on slowly and imperceptibly in the beginning, with giddiness in the head, rather than acute pain, much anxiety and watchfulness, tremor and debility,  
give



give way to Opiates, Bark, Serpentaria and Wine? Blisters applied to the arms are extremely useful in keeping up the pulse, especially if the skin be soft, the tongue and fauces sufficiently moist; much more may be learned by attending to this last appearance than is generally known.

It is necessary, however, to distinguish between the dryness of the tongue and mouth, as a symptom of the Fever, and as arising from the circumstance of a patient sleeping with his mouth open.

I hope the observations here offered to the public, on the subject of this invaluable remedy, will remove all prejudices against a Peruvian Bark of a large and coarser appearance, than is generally employed.

It is at present in very great demand, the difficulty of procuring it will not, I hope, instigate Druggists and Dealers in the article, to substitute at any time a spurious kind in its room.

*Extract of a Letter from Mr. EDWARD JACOB, jun. an eminent Surgeon, at Faversham, in Kent.*

I H A V E had such repeated opportunities of trying the Red Bark, that I hope to be able to give you every satisfaction you can wish, of its superior efficacy over the Bark in common use.

Our situation being in a country not far distant from the marshes, renders the inhabitants more exposed to intermittent complaints than those of cities and more inland counties; and I assure you, before the use of the Red Bark was known, the Ague, from its particular stubbornness (as we thought, or what we have since observed from the want of efficacy in the other Bark) might be truly called the *opprobrium Medicorum*; but now I think that stain is entirely removed, for I have not met with one single case, where (when I could per-

suade



suade the patient to adhere steadily to my advice) I have ever found the Red Bark to fail.

The Peruvian Bark, with which I was formerly provided, was of the best kind, and always had in the quill; yet, it was even much inferior in its effects to what ought reasonably to be expected from it.

The first knowledge that ever we had of the Red Bark was in March, 1781, when a few pounds were sent us to try its effects; our Druggist informed us, that it was then in use at St. Bartholomew's Hospital, and was there found effectual. It remained in our house till May following, when I was attacked with an Ague; I did not at first think of trying the new Bark, for I guessed, by taking of the old in great quantity, which would not be disagreeable to me, that my Ague would soon leave me; but, to my great disappointment, it succeeded fit, without shewing the least good effect of the remedy applied. I was then determined to try the new Bark; but finding my Ague stubborn, I emptied the *Primæ Viæ* by an emetic and carthatic, and immediately, on the fever going off, I took one dram of the Red Bark in fine powder, mixed with three ounces of the decoction, and a small quantity of the tincture, which being a draught well loaded with Bark, at first seemed to sit uneasy on the stomach (which I have several times on being first taken, found the case with some of my patients, but which never took from its effect) but, after resting for some time I found myself in a state to continue its use. My Ague from that time kept off; till, from omitting the Bark too soon, and finding myself quite well, in a few weeks after, slight symptoms appeared again; but which never formed a direct fit; the Bark being again repeated, eradicated the disorder.

My father, now in the 70th year of his age, has since that time been attacked with an Ague; but, from his having been before seized with a chilliness



without subsequent fever, suffered himself to have three fits without trying any remedy ; being then convinced of the reality of the Ague, applied to this Bark in decoction, with some tincture made of the same ; he found it so effectual, that after taking it, the fit did not once return ; he omitted the Bark too soon, and had one slight fit ; but, after repeating the same remedy a few days, it has not since returned, and he is now perfectly well.

The patients who have received immediate relief from the new Bark, are so numerous, that I cannot, with any degree of certainty, guess the number.

The quantity that we have used from July 1781, to the present time, is upwards of sixty pounds. The manner in which we have used it, with a view to prevent the return of an approaching paroxysm, is by giving half a dram or one dram of the powder, mixed with two ounces of the decoction, and a small quantity of the tincture. The decoction we have used, has been prepared by boiling three ounces of the gross powder boiled in two quarts of water to one quart.

When the patient has been of a more delicate frame, or when it has been used as a corroborant, we have given the decoction and tincture without the powder. When the Ague has been but recently contracted, we have seldom trusted to any thing but the Bark, but when stubborn, evacuants have been first given ; half an ounce of the powder has very frequently cured an Ague without evacuants, or more Bark, when the fit was a recent one ; we have now entirely left off giving the old Bark in any form since we have found so good effects from the Red Bark, and we used the resin of Red Bark with good success in many cases, where the patient could take it only in the form of pills. I heartily hope the above account will prove satisfactory to you, if not I shall think myself very  
happy



happy in answering at any time any future enquiries.

I am, Sir,  
with great respect,  
your most obedient  
and humble servant,  
EDWARD JACOB, Jun.

Feverisham, June 23, 1782.

*A Letter from Mr. Boys, an eminent Surgeon and Apothecary at Sandwich, in Kent.*

S I R,

I AM sorry it is not in my power to send you particular cases of the effects of the Red Bark : having made no memorandums, I can only say, in general, that it is a much better kind of Bark, than any I have been able to procure hitherto. Whether the Intermittents have been worse than common, or the Grey Bark has been of inferior quality, I will not take upon me to determine ; but we were unusually foiled in our attempts to cure that complaint, till we were furnished with the new Bark.

I can have no inducement to give a higher character of this drug, than it deserves : but I do assure you, that since I began to use it, it has not once failed me, when the patient has taken it in a proper manner. Hence, I have a firm persuasion of its superior efficacy, and I am the more confirmed in my opinion, by knowing that my sentiments correspond with yours, and with those of all my medical acquaintance, in this neighbourhood, who have made trial of it. My best wishes attend your publication ; not only because I am persuaded it will operate to the advantage of mankind, by extending the knowledge and use of this valuable medicine, but likewise, because I am in hopes  
it



it will hasten a fresh importation of the article, of which I have very little left, and I know not where to go for a supply.

I have the honour to be,

Sir,

Your most obedient servant,

W. B O Y S.

*Sandwich, June 19, 1782.*

*In addition to the character given of the Red Bark, by several Practitioners in the country, is a Letter I received a few days ago from Sir WILLIAM BISHOP, an eminent Surgeon, at Maidstone, in Kent, dated June 16th.*

IN which he shews, by a variety of cases, that in the cure of Intermittents, in that part of the world, the Red Bark had not only been infinitely more effectual than the common Peruvian Bark or any other remedy usually employed, but that it had radically cured where Cold Bathing, Emetics, Opiates, Bitters, and Friction failed, and where the best Pale Bark, both by itself, and with a variety of other medicines, was exhibited without effect, even to the quantity of sixteen ounces. The form he gives it in, is that of an electuary, with the addition of a small quantity of the essential Oil of Pepper-mint and Carraway-seed; and he seldom has occasion, he says, to use more than from four to six ounces. One case he mentions, where a Sphacelus had taken place in a Malignant Fever, accompanied with delirium and every other bad symptom, the patient was recovered by the use of the Red Bark, Anodynes, and Wine; the Sphacelus separating kindly, the Fever and every bad symptom speedily gave way.

*I am*



*I am likewise favoured with another Letter from Sir WILLIAM BISHOP, dated June 23, which contains many sensible and judicious hints upon this subject.*

HE recommends the grinding Red Bark into the finest powder by a mill, and afterwards sifting it through the finest cypress sieve, in order that it may sit lightly on the stomach, and that its parts may be uniformly blended together: he observes, that if, after breaking the Bark, you examine the broken pieces, by means of a glass in the sun-shine, you will see the resin like spangles of gold between the internal woody fibres and the outward grey coat; by comparing this appearance with the best Pale Bark, you will discover the Red Bark contains a much larger quantity of resinous parts.

Two scruples of Bark, as coarsely powdered as is commonly sold by the apothecaries, will be as disagreeable to take, as a dram or four scruples finely ground. One dram is the dose he generally gave to an adult, although he sometimes met with patients, who would choose to take two or three drams at a dose, and those doses, at longer intervals; and from experience he found that, when this last practice agreed with the stomach, it was the most effectual way of curing the Intermittent. One patient took three ounces in twelve hours, and had no return of an obstinate *Quartan*.

Many Intermittents, which could not be cured by small doses, were removed by larger doses, more frequently employed.

He mentions that a period of five or six hours, before the expected return of a *Quotidian* or *Tertian* Intermittent, is all that is necessary for the taking a sufficient quantity of the Red Bark, in order to obviate the approaching paroxysm. Some have been cured by taking two ounces, as quick as possible after the fit,



fit, but such as persevered in the use of it, until four or six ounces were taken, acted most prudently, their health was soonest and most perfectly restored. He likewise observes, that such persons ought to take the greatest quantity of Bark, whose blood is in the most dissolved state, and where the fibres have been relaxed by the most profuse sweating, which frequently takes place in obstinate *Quartans*.

*Quotidians* require but a small quantity, *Tertians* will yield to fewer doses than our *Kentish Quartans*.

He found it better to get down five or six ounces of Bark, in eight or ten days, than to allow a larger time for the same quantity. Labouring people, who work out of doors in cold foggy mornings, either in marshy grounds or wet lands, from sun-rise till the dew of the evening, and who sweat profusely, and suffer their wet linen to dry on their backs, will not be safe from a return of the *Quartan* Fever, with less than five ounces taken after the last fit, as the good effects of all they had taken before, are very probably carried off and dissipated in the ensuing paroxysm.

He likewise observes, that the Bark in large doses will not cure the irregular fits of an ague and fever, which so often afflict persons, when matter is forming in the lungs, in the *Phthisis Pulmonalis*.

The letters from Sir William Bishop, which convey these observations, likewise contain much valuable information on other medical subjects, and I hope the ingenious author will, on some future occasion, favour the public with them.



*A Letter from Dr. Withering, an eminent Physician, at  
Birmingham, June 29, 1782.*

DEAR SIR,

I AM much pleased that you have undertaken to give us an account of the Red Peruvian Bark. A publication upon that subject, cannot fail to produce good effects, by removing the prejudices of some, the ignorance of others, and ultimately by exciting our merchants to obtain liberal supplies of a medicine so truly valuable. The universal prevalence of Intermittent Fevers this spring gave us a large experience of its effects. We have not many Intermittents in the town of Birmingham; but in other parts of the county of Warwick, in Staffordshire, Shropshire, Worcestershire, and Oxfordshire, so far as my rides extend, they have been more general than ever known before in the memory of the oldest practitioners I have conversed with.

After taking pains to recommend the Red Bark to all the Apothecaries I met with, and consequently not less anxious to learn their observations relative to its effects, I can say, that they unanimously concur in asserting, “that they have never been disappointed in  
“their expectations, when they exhibited it to patients  
“labouring under Intermittents.”

Now the Intermittents which I have seen, have pretty generally assumed the *Tertian* Type in light soils, and the *Quartan* Type in clayey countries. Of the latter, I have the care of some which were from six to eighteen months duration, originating in Kent and Essex. I have known two instances only of *Quartans* in which the Red Bark did not prevent a recurrence of the Fits; I saw one of these patients afterwards; he laboured under hepatic and anasarcaous symptoms, these were removed in a fortnight by the  
usual



usual methods, and then the Bark affected a cure. The other case was at a considerable distance from this place, and I have not yet learnt its termination.

It will require some farther experience to ascertain the necessary doses. I know some practitioners who have given one or two drams every four hours betwixt the fits, but I have never had occasion to give more than thirty or forty grains at similar intervals of time.

As to its preparations I can say but little, preferring always in my own practice the simple powder; but, I am told, that it makes a very rich tincture, and I have seen decoctions of it very high coloured and turbid.

But it may be asked—Would not the common or Quill Bark, have produced similar good effects in the Intermittents of the present year? From the reports of other practitioners, I believe it would not. From my own experience, I can give no other answer to such a question, than, by saying, that after frequent and almost continual disappointments, from the use of common Quill Bark, I have not tried to cure a single Intermittent with it for more than seven years past; relying entirely upon the use of evacuants, opium, and metallic salts. To render this last assertion reconcilable to the daily experience of others, it may be necessary to observe, that with us, a Physician is seldom consulted in Fevers of the intermittent kind, unless some unusual appearance, or some uncommon obstinacy in the recurrence of the attack, alarms the patient or his friends.

Whether the medicine in question be the product of the same tree from which the Quill Bark is derived, may be difficult to determine, but I am persuaded it is the medicine that was used by Morton and Sydenham, or its efficacy could never have been so proverbial. I know not what could first induce the writers upon the *Materia Medica*, to prefer the Quill Bark, but I know if you were to ask an English Tanner, whether



whether the Bark from the trunk, or that from the twigs of the Oak is the strongest, he would laugh at your ignorance.

I communicated the contents of your letter to my worthy friend and colleague Dr. Ash, together with my opinion upon the subject; he authorises me to say, that the result of his experience perfectly coincides with mine.

I remain,  
with the truest esteem,  
Yours,

W. WITHERING.

P. S. Thus, my good friend, have I freely communicated my sentiments and observations upon the subject you have in hand.

You are at liberty to make what use you please of them, and I shall think myself happy in having contributed a little towards the extensive usefulness of your design. I have seen no bad effects from it, notwithstanding the reports of some of the London Druggists, but their motives were too evident to need a comment.

I feel, with you, that distance alone has interrupted our communications; but I feel too, that distance can never abate the regard with which I once more subscribe myself,

Affectionately,  
Your's,

W. W.

*To Dr. Saunders, Jefferies Square.*

*A Letter from Mr. SHERWIN, an ingenious Surgeon at Enfield.*

S I R,

SINCE we have used the Red Peruvian Bark, we have had great success in curing Agues and Intermittent Fevers. These disorders returned so frequently

G

ly



ly after the use of the best Peruvian Bark, which we could formerly procure, that our credit, as well as that of the medicine, began to fail very much, and numbers of our patients got into the hands of persons unacquainted with physic. They seemed willing to trust rather to nostrums and charms, than to a medicine which they have seen so repeatedly fail, and to the effects of which they very ingeniously ascribe every ache and pain which continue after Agues, or which are the consequences of Agues when imperfectly cured.

I could give a very ample detail of the inefficacy of the common Bark ; but as the complaint is general, it would be unnecessary. I shall, therefore, only take the liberty to present you with the more agreeable history of a few cases that have immediately yielded to the Red Peruvian Bark, and that even when given in very moderate doses, after having obstinately resisted large quantities of the other.

RICHARD PARSLEY, a hard working young man, about twenty-eight years of age, was seized with an Ague last autumn, which continued either as a *Quotidian*, *Tertian* or *Quartan*, with very little intermission, till the 20th of April last, when I saw him accidentally. He gave me the following account :

That he had taken every thing that had been recommended to him ; and that his master, a worthy and respectable gentleman in this neighbourhood, had procured him the advice of different practitioners of physic, who had prescribed Bark for him in large quantities, but without benefit, as the disorder always returned with greater violence after it had been checked a few days. He added, that the last medicine which he had been advised to take, was half an ounce of Allum boiled in a pint of Ale, to half a pint, which he was ordered to repeat three different times, as soon as he felt the Ague approach. He had in  
this



this way, he said, taken seven half ounces upon the approach of as many different fits of the Ague.

I suspected, that so large a quantity of Allum, taken at one dose, must have produced some dangerous effects, and doubted whether he had swallowed the whole of it; but I found, upon more particular enquiry, that he really swallowed half an ounce each time, as he says; that he stirred it up from the bottom and felt it gritty in his teeth. It gave him great pain in his stomach. So large a quantity of Allum being taken at one dose, without materially injuring the system, is a fact which I am persuaded you will think worthy of notice.

I took compassion upon this poor fellow, and sent him eight papers of the Red Peruvian Bark, containing a dram in each, which he finished in two intermediate days, the disorder being then a *Quartan*. It is now seven weeks since he took this medicine, and he has had no return of the complaint, but, to use an expression of his own, "hath felt ever since as if he had a new inside."

ANNE PIGOT, a poor girl, fourteen years old, has been afflicted with an Ague since Autumn last in the same family with Parsley, and has also tried various methods without effect. I prescribed small doses of the *Vitriolum Cærul.* fourteen days without gaining any advantage. I gave her also three or four doses of a hot aromatic powder, consisting of Bay Berries and Caian Pepper, which I have frequently seen to cure, but she found no benefit from it. I cannot say whether this girl had given the common Bark a fair trial. She begged to have some of the same medicine that cured her relation, and about a month since had three papers, containing only one scruple in each, and I assure you, she has been perfectly free from the complaint ever since.

Mr.



Mr. BARNES, a very strong, hard working man, was seized last Autumn with a very violent Intermittent Fever, attended with delirium, and apparently much danger. After three or four paroxysms, I removed the disorder by giving him one dram of the common Peruvian Bark every hour, and continuing the same quantity twice a day afterwards; but at the end of fourteen days, the Fever returned with the same violence as before, and was again stopped by the same quantity of Bark. From Autumn, till the beginning of last April, it returned in this manner (at the end of about fourteen days from the time it was stopped) five or six times, and always with uncommon violence. The common Peruvian Bark, newly powdered, was repeatedly given.

In the beginning of April, I prescribed six doses of the Red Peruvian Bark, of one dram each, which he took upon the going off of the paroxysm, and I have the pleasure to inform you, that he has had no return since that time; though I no longer used the precaution of continuing the daily use of the same medicine.

It is not worth while to mention common cases, where the Red Bark hath cured without the other having had the trial. A few have occurred, and I have not yet had any instance of a relapse.

I was lately called to a very severe case, like that of Mr. Barnes, where the intermission was not longer than six or eight hours. I prescribed, and the patient took six drams of the Red Bark, without interrupting the paroxysm, which came at the expected hour; and during, the sickness and horripilation the Bark seemed to be entirely rejected by vomiting; however, the succeeding paroxysm abated something of its fury. My patient was extremely averse to Bark in every shape; but my deceiving him, during the following intermission, I got him to swallow near the quantity of two drams at once, which rendered him so entirely averse to the medicine, that he would take no more afterwards.



wards. However, to his great joy and my surprize, the Fever left him. He ascribes his cure to three or four draughts of Camphorated Julep, which were prescribed as a *placebo* upon his refusing to persevere in the use of the Bark. But it may with more justice be ascribed to the two drams of Red Bark, taken at one dose; as I think the first six were in a great measure lost.

I consider the Red Peruvian Bark as a valuable acquisition to the *Materia Medica*: or, perhaps, it may be only a restoration of what was used in the days of Sydenham, and some time after, when it was common for medical writers to say, that this, or that medicine would cure, with as much certainty as Bark would an Ague. An Eulogium to which the Bark in this country has not been of late years entitled.

Before I became acquainted with the superior efficacy of the Red Peruvian Bark, I had tried a variety of Tonics, with very indifferent success in general, but now and then with very happy effects, such as the Cuprum Ammoniacum, Vitriolum Coeruleum, Sal Vitrioli, Sal Martis, &c.

WILLIAM KING, an athletic young man, applied to me last Autumn, on account of a tedious irregular Intermittent, complicated with acute fixed pain in the side, and a full strong pulse, much cough and hoarseness. Under these circumstances, I thought it imprudent to administer the Bark in any form, and had recourse to a plentiful bleeding, applying blisters to the part affected, and giving the Decoct. Taraxac. with Tart. Solubile, and honey in large quantities. The disorder was clearly an Ague; but attended with symptoms that threatened a pulmonary consumption. His blood was remarkably sily, which induced me to make use of *venesection*, four times, which, with the above medicines, and a very strict *antiphlogistic* regimen, removed the cough and the pain in the side, though



though the Ague still continued. I ventured at last to give him eight doses of common Bark, one dram in each, which removed the Ague several weeks, and mended his habit much. A continuance of the Bark, twice a day, for some time after the Ague stopped, brought on a frequent bleeding at the nose.

The Ague returned twice during the winter, and gave way soon to the same Bark, and he kept tolerably well till the setting-in of cold north-east winds in spring, when his Ague again returned, and brought with it the pain in the side, a bloated icteric countenance, much hoarseness and cough. After one more bleeding, and the use of the Apozem for a month, I gave him six drams of the Red Peruvian Bark in April last, and have had the pleasure to see him continue free from the Ague since that time, though he never repeated the dose after it stopped.

I was unwilling to persist in the use of the Bark after the Ague stopped, lest it should increase the circulation too much, and again excite a bleeding at the nose.

I have now indeed almost entirely laid aside the custom of persevering in the use of the Bark, after the Intermittent is stopped. I have for some time suspected that it answers no good purpose, and that it may possibly now and then be the reason why large quantities of good Bark have been given in vain.

It is a well known fact, that every species of intermittent complaint frequently returns in fourteen days after being interrupted by means of Bark, notwithstanding that medicine is continued every day. May not the daily use of Bark so habituate the constitution to its effect, as to render it useless when the Intermittent returns?

I am now satisfied when I have put a stop to the expected paroxysm, and prescribe an anodyne to be in readiness if ever the cold fit returns, advising my patient to have recourse to the same quantity of Bark  
which



which he found necessary at first, and to take it as soon as the succeeding Fever abates. I adopted this practice a little time before I became acquainted with the superior efficacy of the Red Bark, and thought it an improvement, but since that time I have succeeded so well by giving six or eight drams between the paroxysms, that I have seldom had occasion to repeat a single dose.

I am,

Sir,

with great respect,

your obliged and

most obedient Servant,

JOHN SHERWIN.

*Enfield, June 23, 1782.*

*A Letter from Dr. FOTHERGILL, an eminent Physician,  
in Harpur-street.*

DEAR SIR,

IN answer to your obliging request, I shall now proceed to lay before you the best information I can concerning the New Bark, lately introduced into practice, under the name of Cortex Ruber, or Red Bark. As it was found on board a Spanish prize, intermixed with a small quantity of common Peruvian Bark, it would seem to be no other than the produce of the trunk or large branches of the same tree. It seems to be possessed of the same sensible qualities, only in a much higher degree, hence it yields a much larger proportion of resinous extract, and gives a more saturated tincture and decoction than the common Bark. Hence too I have found (according to what you lately observed) that the decoction may be exposed a long time to the open air, without contracting the degree of



of acidity which manifestly takes place in that of the common Bark in a few days.

It has been remarked for many years past, that the Peruvian Bark has often disappointed the expectation of the public ; having fallen greatly short of that transcendent degree of efficacy, for which writers of the last century have so highly extolled it. Few Physicians of extensive practice, but must sometimes have had the mortification to observe their favourite specific entirely baffled by a regular Intermittent without being able to assign any probable cause for the defeat, except the unguineness of the medicine ; whence it would seem to follow, either that the Intermittents of late years have been more obstinate in their nature, or that the Bark has been of an inferior quality to that which was used by Dr. Sydenham, and many of his respectable contemporaries, of whose veracity we can entertain no reasonable doubt. The latter appears to me to be the more probable, especially when it is considered that of late years, it has been customary (for what reason I cannot imagine) to select the Bark of the small branches, under the denomination of Quill Bark, in preference to that of the trunks. Should this preference hereafter be discovered to have been groundless (agreeable to what I have long suspected) it may perhaps contribute to explain the principal cause of our disappointments.

In the art of tanning, experience has long determined in favour of large Oak Bark, as being greatly preferable to that of the smaller twigs. Why the reverse of this should take place in a medicinal view, is by no means evident, especially if the virtue of the Peruvian Bark keeps pace in any degree with its astringency.

Spanish practitioners, as I have been lately informed, are so well convinced of this, that they always prefer the large Peruvian Bark ; separating it from the smaller sort, for all important purposes, which the late  
capture



capture indeed seems to render probable \*. Future observations may probably discover that this was the real genuine Bark, with which our ancestors cured all the various kinds of Intermittents, with a degree of certainty, which now astonishes their successors.

If Bark taken from the large branches should be found to be more efficacious than that of the small, is it not reasonable to believe, that, that of the trunk or rather of the root, might surpass both in virtue? Political reasons, however, respecting the preservation of the trees, which produce so important an article of commerce, will, it is to be apprehended, effectually deter the inhabitants from every experiment of this nature.

A very eminent Druggist, who purchased a large share of the above cargo, assures me, that many of the Apothecaries whom he has supplied with the Red Bark, and who have carefully compared its effects with those of the common cortex, make no scruple of deciding in its favour. He further adds, that the demand for it has increased so rapidly of late, that the stock in hand is already nearly exhausted.

It is to be regretted, that the passion for interlard-  
ing this simple febrifuge with other bitters and astringents (after the usual complex mode) should still too much prevail in practice. Under this false idea of adding to its efficacy, its virtue may often be greatly diminished, and at all events, the result of the trial must be rendered extremely equivocal. In justice to the remedy, and to obviate this uncertainty concerning its effects, I have embraced every opportunity (which so short a space would admit) of administering it in its simple state, without intermixing it with other  
H medicines.

\* This must not however be confounded with those coarse woody flakes, which constitute a large proportion of the worst kind of Bark, now in use. For these, having been already stripped of the outer rind, together with the resinous cells consist of a mere ligneous substance, divested of medical virtue.



medicines. The cases in which I have chiefly tried it, have been low putrid Fevers, attended with extreme prostration of strength, delirium during the evening exacerbations, with short and obscure remissions in the day time.

For the sake of brevity I will but mention one instance. William Henton, a Silk Weaver, laboured under a Fever of this kind, accompanied with Petechiæ, and a profuse nasal Hemorrhage, which last symptom generally returned with the exacerbations. To these were added cold sweats, muttering delirium, involuntary twitchings, &c. Before I saw him, common Peruvian Bark had been prescribed, and his case pronounced desperate. In this very critical situation, however, I was not deterred from recommending the Red Bark, in proper diluents, acidulated with Spiritus Vitrioli. Accordingly he took from two scruples to a dram every two hours, except during the midnight exacerbation, when it was ordered to be cautiously avoided; because I have long been convinced by experience, and attentive observation, that the febrile symptoms are generally exasperated when a Bark remedy is given at that period. The medicine agreed, the Hemorrhage abated, and Fever soon subsided. Some weeks have now elapsed, and I have the satisfaction to add that lately, on entering his room, he assured me with a joyful countenance, that since he had taken the Red Bark (or as might now, perhaps, with more propriety be said, the Real Bark) he had suffered no symptoms of relapse, and that he remained free from all complaints, except a little weakness of sight, to which he had been formerly liable. Should this medicine be hereafter found to answer as compleatly in the other various types of Fevers, and that in smaller doses than the common Bark, it will become highly interesting to the patients, and no less pleasing to the Physician, especially when he shall be enabled beforehand,



hand, thus to pronounce with real confidence concerning the event.

“ *Hi motus, atque hæc certamina tanta,  
Pulveris exigui jactu compressa quiescent.*”

VIRGIL.

From its success in this and several other instances, which have fallen under my own observation, I am strongly inclined to believe, that it will soon become an object worthy of attention, but must decline giving a decisive opinion concerning its superiority, till I know the result of a variety of cases, in which it is now under trial, and also receive additional confirmation from such correspondents, as are less prepossessed in its favour than myself, because they may be supposed to prove in reality more impartial judges. Therefore in the interim, I shall wait with patience for your intended publication, hoping, that by thus collecting the sentiments and observations of several practitioners in different parts of the kingdom, we may at length be enabled to ascertain the true comparative merit of the Red Bark, which cannot but afford great satisfaction to the public at large, as well as to.

Sir,

Your most obedient servant.

A. FOTHERGILL.

*Harpur Street, July 6, 1782.*

*A Letter*



*A Letter from Mr. EDWARD RIGBY, an eminent Surgeon, at Norwich.*

DEAR SIR,

I AM very much obliged to you for the honour you have done me, in sending me your Treatise on the Red Peruvian Bark, and I feel myself particularly flattered by the manner in which you have solicited an answer to your letter.

I am happy that it is in my power to bear the most ample testimony to the great and certain efficacy of this Bark ; I have had the fullest opportunity of trying it in every species of the Intermittent, and have given it to patients under the greatest variety of circumstances respecting age, constitution, date of the disease, &c. and out of more than a hundred and fifty persons, who have taken it under my direction, it has not failed in a single case, stopping the return of the paroxysm in the very first instance of its application.

I was fortunate enough to receive a small parcel of this Bark so early as October 1781, owing to the friendly communication of Mr. Talbot, Surgeon, at Wymondham, in this county, to whom Mr. Hopkins had sent a few ounces as a specimen for trial, half of which he immediately sent to me ; Intermittents being at that time very frequent in Norwich, and its neighbourhood, I had an opportunity of trying it the day after I received it, and I chose the two worst cases, which then occurred to me, the one was a Quartan, of many months standing, the patient, a boy about eleven years of age, very much worn down by a Quotidian, of nearly as long a date ; the other patient, a young woman of about eighteen years of age, whose constitution was also much shattered by the long continuance of the complaint :—to both of them I gave half a grain of Tartar Emetic, at the approach of the next fit,



fit, which brought off a good deal of Bile from the stomach, and when the Fever terminated, they began to take the Bark, an ounce of which was divided into twelve doses, all which were taken by each of them before the times of the expected returns of the complaint; they both lost the fits, and though they took no more of it, for they had taken all which was sent me, they had no return of them until many weeks after, when the weather proved very wet, and then they went away without taking any more of this, or the common Bark, for they were both at this time removed to such a distance in the country as not to be able to send to me.

My success in these cases, induced me to procure a considerable quantity of it, and as soon as I received it, I made use of it in several Tertians then under my care, in all which it immediately answered the intended purpose. About this time I had a patient, a gentleman about fifty years of age, who had had a Quartan more than three months, he had been endeavouring to cure himself by a variety of popular receipts, amongst which was one which contained a considerable quantity of the common Bark; when I first saw him it was the day after he had had a fit; but he was then much indisposed, his pulse was too quick, he had no appetite, and was much reduced, he took a saline Fever medicine, and an opening draught before the next fit, at the approach of which, I gave him a grain of Emetic Tartar, which vomited him considerably, and he repeated half a grain of it every three hours, until the Fever terminated, which, though it lasted a long while, went off with a greater and more general perspiration than was usual with him.

I now thought it right to begin giving him the Bark, but his intermission not being quite so perfect as I wished it, and moreover, my not having yet had a sufficient number of cases, in which I had given the Red Bark, fully to establish its reputation with me, I  
thought



thought it most prudent to give the common Bark, of which he took two scruples at such intervals during the intermission, that he got down more than an ounce and a half of it before the time when the fit was expected, but it did not succeed, and he had another fit fully as severe as his former one ; I then resolved to make the next trial with the Red Bark, an ounce of which was taken in the course of the succeeding intermission, and in doses of two scruples, and this stopped the fit ; I prevailed upon him to continue its use in the same dose three times a day for a little time, which he did till he had taken two ounces more, but he has taken none since ; and though his employment exposes him very much to the weather, and he was soon after frequently wet, yet he had not the slightest return.

From this time I confidently gave it in every case which came under my care, and its use was invariably attended with the same immediate success. In the number of those which were cured, were several whose legs were much swelled, and their bodies hard, and who appeared to be very rapidly hastening into a Dropsy ; more than twenty of them were children, two were infants, not a year old ; and one, whose case I shall relate, was a striking instance of the truth of your remark in the Treatise, that the Bark given in considerable quantity as near as may be to the time of the approach of the fit, is particularly efficacious.

My patient was a gentleman about twenty-five years of age, robust, and of a full habit ; he had had an irregular Intermittent about a fortnight, it began as a Quartan, of which he had three fits, it then became a Quotidian, and he had three or four more fits ; I saw him about the time when it began to come every day, and I found the Fever was very considerable ; the usual treatment, which I need not particularize, was made use of, until he appeared to be in a state to take Bark ; the fit after which he was to begin to take it, terminated about ten o'clock at night, and its return

was



was expected the next day between twelve and one at noon. The time of the intermission being short, he began to take it in doses of a dram : I had a message from him in the night, that it disagreed with him, and that he could not keep it down ; I desired him to persevere, but to consider what came up as if he had not taken it, and to supply its place with another dose : between five and six o'clock in the morning he sent to me again, and desired me to go and see him. I found him much fatigued for want of sleep, which he had been entirely hindered from getting, by his repeated endeavours to take the Bark, every dose of which, except the first, had been rejected, and he seemed convinced that his stomach would not retain it. I prevailed upon him, however to take half a dose, and this kept down ; I staid with him some time, and half an hour after taking the first half dram, I repeated the same quantity, which likewise kept down ; I then left him, desiring him to continue it every half hour in the half doses. Between eight and nine o'clock I was sent for again, and he gave me the same account of its coming up again as before ; notwithstanding this, I ventured to give him another dose, which he immediately threw out of his mouth, before he had swallowed any of it ; observing this, I was more particular in enquiring in what manner he had vomited up, as it was called, the former doses ; and from the attendant's account I was convinced, that what he imagined to have been vomited up, had never been swallowed ; by this unlucky mismanagement of himself, he had taken but two drams and a half instead of five drams, and there remained five drams and a half to complete the ounce, which was to be taken in little more than three hours ; however, I was determined he should persevere, and I immediately gave him a dram, as I was no longer under any apprehension of its coming up, being fully satisfied that all had been retained which had been actually taken into the stomach ;



stomach; this kept down, and by strictly attending him with a dose every half hour, or at longest every three quarters of an hour, the whole was gotten down before the time of the expected return of the fit, which happily prevented its coming, and he has continued well ever since. The night having been entirely without sleep, and the patient having been excessively fatigued and fretted by his many fruitless endeavours to take his medicine, were very unfavourable circumstances in his situation, and prevented his Fever from going off so perfectly as it did in the former intermission, for he was much hotter, and his pulse quicker than was to be wished, when taking Bark; however, the event fully justified my perseverance, and strongly proved the efficacy of the medicine.

Many of my patients having been poor and ignorant people, and some of them living at some distance from Norwich, to whom I could only give general directions, as it was impossible for me to attend them, you may easily imagine that most of that class of them took it carelessly; some of them I know did not take the quantity prescribed; and I recollected one person, a strong country girl, about seventeen years of age, who took an ounce of it at two doses; yet all of them were immediately cured. One patient of this class was a child about eight years old, who had a Quotidian more than two months, and was directed to take half an ounce of the Cortex between the fit, which was to terminate on a Monday noon, and was expected to return on the Tuesday, about the same time; on the following Saturday the child's father called to inform me that he was cured. Upon enquiry how the child had taken it, I was surprized to find that he had not then finished the half ounce, for when I told him that I meant the child should have gotten the whole quantity down in one day, he said he had understood before, that I directed it to be taken between the Monday and the Saturday night, so that it was evident the  
child



child could not, the first day, have taken more than one dram of the medicine, which it is clear, proved sufficient to stop the fit.

From the foregoing, and from some other cases which I have had, as also from those communicated to you by my friend Mr. Sherwin of Enfield, one may certainly very strongly presume, that a much less quantity of this Bark than what I have usually given would answer the purpose; it would be a very easy matter to ascertain this by more trials, but at present I am not willing to give it in a smaller quantity, nor would I recommend it to other practitioners to do so, until the reputation of the Bark has been fully and universally established, for whilst the prejudices of some practitioners, who are averse to new medicines, and the interest of some Druggists, who will be probably sufferers, by having large stocks of the common Bark by them, may in the least degree tend to oppose its general use, it is to be wished that the testimonies in its favour should not only be strong and clear, but that its success should be as uniform and invariable as the nature of the medicine admits of, and therefore I would not yet venture to prescribe a quantity so small, as to run a possible risque of its failure, when the quantity I have hitherto used, which is an ounce to an adult, and a proportionable less quantity to children, has not, with me, in a single instance been fallible.

In relating the few cases above, I did not think it necessary to mention the names of the patients, but as the circumstances which tend to recommend a new medicine cannot have too great notoriety, I will, as they occur to my memory, give you a list of some of the persons who have been cured of Intermittents by this Bark, and whose situations in this neighbourhood render them well known.

Mr. Thomas Smith—Mr. Garland—Mr. Carter, Jun. twice—Mr. Money—Master Money, and Miss Money, of Trowse—two children of Mr. Barham of



Kirby—Mr. Oliver—Mr. Taylor—Mr. Kiddell's daughter, of Colney—Mr. Howlett, of Earlham—Servant of John Gay, Esq;—Servant of Mr. Bloom, of Trowse—Mr. and Mrs. Clift—Miss Clift—Son of Rev. Mr. Ansdell—Mr. Dixon—Master Webb—Miss Kett—Master Bunn—Mrs. Denny of Shottisham—Mr. Wright of Brecondale—Mrs. Glover of Kirby—Mr. Smith of Burlingham—Servant of Sir Lambert Blackwell, Bart.

With regard to the common Peruvian Bark, notwithstanding the complaints of its inefficacy have been great and general, my experience for a few years past has given me no reason to be so much dissatisfied with it as I find many others are. I will acknowledge, indeed, that for some time past, I have found it necessary to give a much larger quantity of it than usual, and that even when I have given from an ounce and a half to two ounces of it in substance, it has not always succeeded in stopping the fit in the first instance of its application, but when I have been able to prevail upon my patients to persevere in its use, in the same quantity, I have never known it fail to stop the fit after the second intermission, in which it has been taken. I should imagine there is no reason to believe that the common Bark, which has been used for some years past, is not the same with what was formerly in use, or which was perhaps, originally introduced; as far as can be judged by its taste, and its appearance, either in the lump, in powder, in decoction, or in any of the other preparations of it, it seems to me, at least, to be precisely the same as I have always seen it; I have, therefore, never once suspected that, as a natural production, it has degenerated, much less have I apprehended that any artful means have been used by Druggists, to render it more saleable, or to increase their profit upon it, by which its medical quality has been diminished: Intermittents having been more general in this country for two years past, than, perhaps,



was ever remembered by any Practitioners now living, probably the same cause which has made them so frequent, has made them of a worse kind, and consequently more difficult to remove; and to this cause, rather than to any change in the quality of the Bark, is, in my opinion, to be attributed the late general want of success in the treatment of this disease. Upon the whole then, Sir, from the experience I have had in using the two kinds of Bark, which has not been inconsiderable, it is evident to me, that they possess the same medicinal quality, but that the Red Bark has it in a degree greatly superior to the pale, which strongly favours your supposition, that they are both the produce of the same tree, the Pale or Quill being the Bark of the smaller branches, and the Red, that of the larger branches, or the trunk of the tree. Having myself found such singular satisfaction in the use of this Bark, I sincerely wish it may be universally introduced, and I am persuaded that every Practitioner, who will give it a fair trial, will immediately prefer it to the Pale. Nothing can be more agreeable in the administration of a medicine, than to be able to speak of and foretel its effects with confidence, as it must be very encouraging to the patient; this circumstance, and its answering the purpose in a much smaller quantity than the Pale, are very peculiar advantages which the Red Bark possesses; for in the use of the Pale, though, as I before observed, I make no doubt, but by perseverance, and taking it in large doses, it will for the most part succeed, yet I have more than once been awkwardly situated with patients, who have taken a large quantity of it without its having answered the intention in the first instance, I mean in stopping the fit, after the first intermission, in which it has been given, it not being always an easy matter to persuade persons, under such a disappointment, to persevere taking down a large quantity of a nauseous medicine,

more



more especially, when there still remain popular prejudices against the Bark ; and it is a notion received by some, that when it does not immediately succeed it must be hurtful.

I have just received a letter from Mr. Talbot, the gentleman whom I mentioned before, as having first sent me a specimen of the Red Bark, with an extract from which, relative to the subject, I shall conclude this already too long letter ; he informs me, that from the time he first made trial of it, he has used no other in Intermittents, that he has given it to more than fifty persons, and he has not failed removing the disease in a single instance, though before that time he had been very unsuccessful in the use of the Pale Bark. - He mentions a case, in which four ounces of the common Bark had been given without effect, and that an ounce and a half of the Red immediately put a stop to the fit :—And he further says, that he lately made enquiries about it amongst some Practitioners in his neighbourhood, to whom he recommended it, and that Mr. Swallow of Watton, Mr. Bringloe, of Hingham, Mr. Gibbs, of Buckenham, and one or two more, have been equally successful in its use as himself.

I am, Sir,

With the utmost respect,

Your obliged and humble servant,

EDWARD RIGBY.

Norwich, Sept. 8, 1782.

*A Letter*



*A Letter from Dr. JAMES MADDOCKS, Physician to the  
London Hospital.*

DEAR SIR,

AGREEABLY to your request, I here send you an answer to the questions you proposed to me, relating to the large and Red Peruvian Bark, lately introduced into use in England.

Your first question related to my opinion of the medicinal efficacy of this Bark, with that of the paler, smaller, and quilled Bark, which for a long series of years has been considered in this country as superior to every other species.

In answering this question, the short notice you have given me, and the little time I have at present to spare, will not admit either of my taking notice of many different kinds of diseases, in which I have had opportunities of observing its superior efficacy, or of describing particular cases of the few disorders I am to mention; on which I shall content myself with giving you the general result of my observations.

The cases which have afforded me the most frequent opportunities of observing, and of drawing the most satisfactory conclusions relative to the superior efficacy of the Red Bark, are those of the Intermittent Fever.

To the best of my recollection, it was about the month of October, 1781, when we first began to make use of the Red Bark, at the London Hospital. Immediately after its introduction, the difference, in point of efficacy, between this and the common Bark became very remarkable; insomuch, that my learned Colleague, Dr. Dickson, and myself, recommended to the Committee of the Hospital, at one of their weekly meetings, to purchase of the Druggist, who had furnished the first specimen, the whole of his stock of  
the



the medicine, however great its quantity might be : upon which measure the Committee, without any hesitation, immediately resolved.

The London Hospital is, perhaps, never without a very considerable number of patients under Intermittent Fevers ; to which its comparative vicinity to the county of Essex not a little contributes.—When, before the introduction of the Red Bark, we were in the use of employing the common Bark upon all occasions, we had found it, in Intermittents, to fall exceedingly short of that high character for efficacy, which is assigned to it by Dr. Sydenham, and his cotemporaries.

As to myself, I can truly assert, that in the cases of patients under Intermittent Fevers in the Hospital, very seldom indeed was the return of the fit prevented, or even the violence of it much diminished at the first attempt to stop it, by any quantity of the medicine given in the interval. On the contrary, portions of the Bark for a considerable length of time, and in very large quantities, were generally necessary to stop the progress of the disorder, or even to abate its violence ; and on many occasions, from a total want of success, I have judged it proper to desist from its farther use, and to have recourse to other means of cure.

On the other hand, by the use of the Red Bark, I have frequently seen the return of the fit entirely prevented upon the first trial of the medicine given in the interval ; where this is not the case, the subsequent fit is generally less violent, and in almost every case the disorder generally disappears in a short time.

Several of the cases in which I have observed the abovementioned good effects of the Red Bark, were cases in which the common Bark had previously been employed, and continued for a longer or shorter time, without success.

With respect to the out-patients, or such as do not reside in, but occasionally come to the Hospital for  
advice



advice and medicines, these are much more numerous than the in patients; among which there occur a great variety of Intermittents, in all its different types. The superior efficacy of the Red, compared with the common Bark, I have found to be as remarkable in these cases as in those of the in-patients.

Whilst I was in the practice of employing the common Bark, very large doses of it were generally necessary to the cure, and the patients used to return to the Hospital again and again, for repetitions of their medicine; but since I have used the Red Bark, many of these patients have not returned a second time. Of such as have returned, some have informed me that the dose prescribed to be taken during the first interval had entirely prevented the return of the fit; others, that the subsequent fits had been very moderate. And where the cases have been otherwise, and I have been informed of the event, the disorder has given way in a short time.

I shall trouble you with only one other tribe of diseases, in which I have had occasion to observe the superior efficacy of the Red Bark. These are periodic pains, of which diseases, the periodic Head Ach is the most common, and most generally known.

But I meet pretty frequently with cases of a similar disorder affecting various other parts of the body than the head. In some of these, the seat of the pain seems, to the feelings of the patient, to be some part of the parietes of the abdominal, or thoracic cavity, but more frequently of the former; in others, it seems to be some or other of the contents of one of these cavities, but more frequently of the abdominal.

With respect to the cases in which the disorder seems to be seated in some of the contents of the abdominal cavity, I have met with many of them, and with some that, during the paroxysm, have been accompanied with a sharp pyrexia, a most acute pain, and most, or all of the essential, or characteristic symptoms of an inflammation



inflammation of the viscus ; which, from the place of the pain, seemed to be the seat of the disorder.

These cases, however, differ from inflammations in this, that their paroxysms are succeeded by intermissions, and return at intervals, generally of the Quotidian, sometimes of the Tertian, at other times of less types ; and blood taken from the patient during the utmost violence of the fit, is without the smallest appearance of the size.

In many cases of these disorders, where our view is to prevent the return of the fits, by remedies employed in their intervals, tonics, undoubtedly, are not always proper remedies ; some of them, as, in particular the periodic Head Ach, when it occurs in young and plethoric subjects, may sometimes require the use of evacuants ; but in those cases in which I have judged tonic remedies to be indicated, and have employed the Red Bark, I have found its effects, compared with those of the common Bark, to be similar to those I have above described, respecting Intermittent Fevers.

In support of my opinion of the superior efficacy of the Red Bark in the diseases I have above specified, I have been led from the nature of the subject, to draw my arguments principally from cases of hospital patients, as these, on account of their superior number, afford the better opportunities of comparison ; but the observations I have made in private practice upon these, not to mention other diseases, correspond with and tend to support the conclusion.

You desire to have my opinion relating to the nature of the Red Bark, from what tree it is taken, whether from that which affords the small Quilled Bark commonly in use, or from a different one. In my opinion there can be very little doubt, but that both are taken from the same tree, and that their difference in appearance depends on this circumstance only, that the small or Quilled Bark, is taken either from very young trees, of which all the parts are yet small, or if  
ever



ever taken from large, is the produce of their twigs or very small branches ; and that on the other hand the Red Bark is taken from well-grown trees, and from their trunks or larger branches.

Certain arguments which I find in your publication on the Red Bark, some of which are suggested by yourself, and others, by some of your correspondents, are, I think, sufficient to warrant our resting in this conclusion. The principal reasons from which I have been led to adopt it are the following :--

First, Because the Red Bark agrees in its sensible and other qualities, with the small Quilled Bark, possessing however these qualities in a much higher degree.

Second, Because it is very well known, that the peculiar sensible qualities and powers of most vegetables, are comparatively little observable in the young plants, or tender shoots.

Third, Because the Tanners know very well from experience, that the Oak Bark which is taken from the trunk or larger branches of the tree, possesses much stronger powers than that taken from the smaller branches ; and therefore always prefer this in the business of tanning.

Lastly, What appeared to me upon examining the specimens, you lately shewed me, of Oak Bark, which afforded me an opportunity of comparing the Bark of the trunk, or larger branches of the Oak, with that taken from the smaller branches, where the Bark of the larger kind appeared of a red hue, and expanded, that of the smaller, pale and quilled ; a difference exactly similar to that we observe between the two different species of Peruvian Bark.

The only other observation I shall make relating to the Red Bark, is, that when we reflect on the very extraordinary virtues ascribed to the Peruvian Bark, by Dr. Sydenham and Dr. Morton, and particularly on the degree of certainty with which it is by them af-



firmed to have cured Intermittent Fevers ; of which virtues, the small and quilled Bark is allowed by all Practitioners, to fall so very far short ; and consider further, that the descriptions given by the *Materia Medica* writers, cotemporary with the eminent persons now mentioned, of the Peruvian Bark then in use, does not apply to the small and Quilled Bark, but does exactly so to the Red Bark ; and lastly, that the inhabitants of New Spain, and, if I am rightly informed by a gentleman lately arrived from that country, of Old Spain also, actually hold the Red Bark in higher estimation, it must appear highly reasonable to conclude, that the Red Peruvian Bark is truly the species of this medicine, the virtues of which are so much extolled by Dr. Sydenham and Dr. Morton, and which was in common use with them and their cotemporaries.

To conclude, Sir, I consider the work in which you are engaged as highly commendable. I consider it as one not only of great public utility, inasmuch as it tends to fix the reputation, and extend the use of a most efficacious and important medicine ; but also as a necessary one to counteract the endeavours of prejudiced or interested persons to oppose its deserved reputation, and discourage its general use.

I am, Dear Sir,

Your sincere friend,

And humble Servant,

JAMES MADDOCKS.

London, Capel Court, Sept. 20, 1782.

Dr.



Dr. Keir, Physician to St. Thomas's Hospital, informs me, that in that Hospital about 150 lb. of the Red Bark have been used, and he thinks with more success than is usually experienced from the common Peruvian Bark.

The employment of it in his practice has not been confined to Intermittents; he has also used it in Mortifications, in Phagedænic Ulcers, in the Convalescence of Fevers, and in every other complaint that occurred, where the common Bark would have been deemed a proper remedy.

In opposition to the objection stated, and refuted by me, Dr. Keir observes, that during the whole of this extensive and miscellaneous use of the Red Bark, no case occurred in which there was reason to believe any bad effects to have been produced by it.

*Extract of a Letter from Mr. SHIREFF, an eminent Surgeon and Apothecary at Deptford, in Kent.*

After observing that the situation of Deptford, and its environs, renders the inhabitants of that village extremely subject to Intermittent Fevers of a very obstinate nature, some of which he found more difficult to cure, than even such as he had seen on the west coast of Sumatra, where they put on a more formidable appearance than in Europe. He proceeds as follows:

“ From the several patients whom I attended, I selected the three following cases to try the effects of the Red Bark; not to enumerate every particular, I shall only observe, that in all of them the common Bark had failed in a singular manner. Each of them had suffered frequent relapses, the first case especially; she had scarce any respite for nine months in Lincolnshire; she had removed to this place to try the effects of a different air; before I saw her she had been here for three months, without finding any benefit.

C A S E



## C A S E I.

A gentlewoman of a weak constitution, and naturally of a nervous habit of body, had been seized last autumn with a simple Tertian in Lincolnshire; upon her removing to this place it had assumed the Quartan type, and was of three months standing; having found very little relief from Bark and other remedies, she had declined calling in any assistance; but her husband, alarmed at her extreme weakness during a paroxysm, sent for me: I was informed of the above particulars, and found her with an icteric countenance, swelled ancles, and other marks of great debility: after some difficulty, I prevailed upon her to take medicines; I sent her immediately several doses of Red Bark, each containing only one scruple, on account of her nauseating every thing that was presented her, desiring her to begin after a general moisture had come on, with an abatement of thirst and head ach, and to be repeated every four or six hours; she continued the medicine in this manner, for four or five days, and as the subsequent paroxysm had been more mild than the one preceding it; I could not prevail upon her to take the Bark so frequently; she however continued its use for fourteen days longer, each day taking four scruples, which entirely removed her complaints—she is now in perfect health.

## C A S E II.

A young gentleman, naturally of a robust and healthy habit of body, had suffered several paroxysms of a double Tertian to attack him, without using any method to prevent them; it was his determination to trust to nature for a cure, rather than take such large, and frequent doses of the Bark, as he had some months before done, without any permanent effects.

But



But a delirium seizing him in one of the paroxysms, his relations sent for me at midnight: I found him sensible, his body covered with a most profuse sweat, and loaded with bed-cloaths, the curtains drawn close, and the external air carefully excluded from the room; having removed every obstacle to the free admission of air, and his body wiped with a dry cloth, and in place of hot drinks, made still hotter with spice, I ordered toast and water, acidulated with lemon, and other diluting liquors, to be given him almost cold; I procured his consent to make one more trial of medicine; accordingly, half a dram of Red Bark was given him immediately, and repeated every four hours; he missed the next period, and after continuing his medicine three days longer, only three times in the day; he left it entirely off;—he has suffered no relapse, and is now in health.

## C A S E III.

A gentleman, after exposing himself to a damp evening, was seized with the common symptoms of Fever; an emetic was given immediately, and followed by a laxative, not apprehending that he was attacked again with an Intermittent, he continued to go to London; at the expected period, however, he was again taken ill, and the paroxysm was rendered very severe, by his imprudently walking home after it had commenced. When the febrile symptoms abated, and the skin became moist, I gave him half a dram of the Red Bark, with orders to repeat it every three hours; he suffered no return, and now remains well; being much exposed to the weather, I have advised him to continue small doses of it twice in the day.

I am, Dear Sir,

Your obliged and humble Servant,

J. L. SHIRREFF.

Deptford, Sept. 14, 1782.

*A Second*



*A Second Letter from Dr. FOTHERGILL to Dr. SAUNDERS.*

DEAR SIR,

A S medical attention has of late been deservedly engaged on the subject of the Red Peruvian Bark, and as the public are not a little interested in the result, I take liberty to submit to your consideration, a few more cursory observations, which have occurred since my last.

The testimony which you have already produced from so many respectable Practitioners, who could be under no temptation, either to conceal its failures, or to exaggerate its virtues, renders it unnecessary to add any fresh evidence of its superiority; otherwise I might mention some late instances of its success, in certain inveterate Agues, which had entirely baffled the ordinary Bark. Therefore, whatever doubts or difficulties may be now raised concerning its identity with the Bark formerly used by Morton and Sydenham, can by no means invalidate the facts which have been advanced in support of its real efficacy. That it was, however, in actual use about the beginning of the present century seems demonstrable.

In the year 1702, the cargo of Bark which was captured on board a Spanish galleon, a parcel of which fell into the possession of Mr. Pearson, an eminent apothecary in the city only four years ago, appears, from every circumstance, to have been no other than the drug now under consideration. But what seems still more worthy our attention, is, that after the space of about 78 years, it should still afford a much stronger decoction than that of the common Bark, and also surpass it in the cure of fevers, and other diseases: an evident proof that this Bark retains its medicinal powers much longer than could have been imagined. In  
further



further confirmation of this singular property, and also of its early use in this country, allow me to transcribe a remarkable passage from Dr. Lister, who mentions some of its most characteristic marks : “ *Propria experientia testor, me ante 20 annos cortice trunci sæpe usum esse ad crassitiem, & latitudinem volæ manus, magnis & profundis fulcis, & fissuris conspicuo, velut in vetusto arbore, imo eundem aliquando cariosum ; & olim, & nunc, vix unquam frustravit eventu optimo, & desiderato, maxime si ejus modus, et tempus exhibitionis rite observatur \**.” Add to this, a still further proof with which I have been lately favoured by Dr. Smith, a very ancient physician near Andover, who assures me, that having obtained a sample of the Red Bark, he immediately recognized it, “ both by the smell, taste and colour, to be the same that was commonly used fifty years ago.” To which he subjoins some recent instances of its success in Intermittents, which had resisted the ordinary Bark.

From the year 1640, that the Peruvian Bark was first imported into Spain, its reputation increased till the old unpeeled trees becoming scarce, the inhabitants of Loxa, mixed other Barks with it, which being detected, it fell into such discredit, that, in the year 1690, several chests of it lay in the warehouses at Piura, and nobody to purchase it. From this circumstance, and from the insignificant doses in which it was administered, it disappointed the public expectation so much, as to be generally discarded, till Tabor, an adventurous English practitioner, by giving more adequate doses of the genuine drug, revived its reputation ; when its fame spread so rapidly, that the Spanish merchants, at length, found it difficult to supply the demand of their customers for full grown Bark, and therefore partly through necessity, and partly through political



political œconomy, substituted the small Bark with which they have long furnished the European markets. Hence may be explained, why they now affect to extol the Quill Bark, which is more easily prepared, and more readily obtained, in almost any quantity, and that without destroying the trees. M. Condamine, who visited Loxa, about fifty years ago, assures us, that the Red Bark was allowed to surpass the other sorts, but was grown, even then, extremely scarce, on account of the reason already assigned \*.

Of late years Peruvian Bark has become such an important article of commerce, that our merchants are glad to procure such as is offered ; but no candid Spanish Practitioner, who has tried the different sorts, will, it is presumed, be at a loss in determining to which the real preference ought to be given.

As the present stock of genuine Red Bark cannot but be extremely disproportionate to the demand, it only remains, that we earnestly admonish younger practitioners not to be too precipitate in drawing unfavourable conclusions from the result of their present trials, but to suspend their judgment, till a fresh supply shall enable them to pronounce with more certainty, concerning its comparative powers.

As it hitherto promises to be much superior to the common Bark, in the speedy cure of Intermittents, it will also behove them to use the greater circumspection in ascertaining the true nature, and tendency of the disease, viz. whether it is a primary, or only a secondary affection, whether certain obstacles are not previously to be removed ; whether the cortex is not contraindicated ; and lastly, whether the sudden suppression of periodical motions may not prove productive of some more dangerous derangement in the system.

From



From the present indiscriminate use of the Peruvian Bark, in diseases so diametrically opposite in their nature, I cannot help thinking, that the inactivity of this universal Catholicon, so generally lamented of late, has been rather a fortunate circumstance, and that the inertness of the remedy has often prevented a series of evils, which must have ensued from such a preposterous abuse of the genuine drug.

In Intermittents which are purely idiopathic, and proceed from an epidemic constitution of the atmosphere, without any concomitant disease, or internal inflammation, the Bark may generally, without hesitation, be freely exhibited; and in highly urgent cases of this kind, which prevail in marshy countries, and sultry climates, wherein the remissions are very short, this medicine can scarcely be administered too soon, or too liberally. Under such hazardous circumstances time is too precious to admit of preparatory evacuations, and I moreover concur with you in considering them as frequently unnecessary, if not injurious.

On the contrary, it must be allowed, that Agues are sometimes merely symptomatic of some other more dangerous affection, and ought to be considered by the attentive Practitioner, as remedies, rather than diseases. Thus in the gout, the pain, inflammation, and tumefaction of the toe, is not the principal disease, but a critical *metastasis*, in order to its cure; so febrile paroxysms are, in certain cases, to be considered as the salutary efforts of nature, to subdue some morbid cause, or to remove some confirmed disease, of a more fatal tendency. In such cases, nature is to be assisted, not disarmed of these useful weapons, by which she sometimes combats Palsies, Epilepsies, and other Herculean maladies, which all the artillery of medicine could otherwise never have subdued.

This being accomplished, the febrile paroxysms either subside spontaneously, or may be now safely removed by this powerful febrifuge.



On the other hand, there are not wanting instances, where the supervening Ague is so far from removing the former disease, that it serves but to exasperate its symptoms, and if suffered to continue, to produce still other dangerous affections. To determine with accuracy and precision in these different situations, demands a degree of medical discernment and deliberation, which but too seldom occur in the hurry of modern practice.

With respect to the general operation of the Peruvian Bark, I entirely coincide with what you have so satisfactorily advanced, and shall only presume to subjoin the following reflections.

Physicians, in attacking Putrid Fevers and other obstinate diseases with the Bark, seem extremely solicitous to impregnate the whole mass of fluids with its specific virtue, yet excellent as it is, when applied to the nervous surface of the alimentary canal, nature seems to me, never to have intended that it should enter the blood, and has therefore wisely placed firm barriers to prevent its admission into the interior parts of the machine. A substance which is capable of undergoing repeated macerations, and decoctions in water for many months, without being wholly divested of its bitterness and astringency, could not easily be subdued in the blood-vessels; but would probably prove (at least in its native state) utterly incompatible with the laws of the system. Dr. Friend accordingly informs us, that no sooner had he injected two ounces of a decoction of this medicine into the jugular vein of a dog, than it produced severe palpitations, convulsions, and death \*. The Provident Guardian of the human frame, thus kindly checks the wild career of aspiring mortals, when, through the mists of boasted science, they blindly pursue devious paths that often lead to dangerous



dangerous errors. Not that our researches into the laws of the œconomy, and the operation of medicines can be too deep, or prosecuted with too much ardour, so long as we follow the clue of accurate observation, and draw no conclusions but what are fairly deducible from the phenomena; but unfortunately, from the little we know of these matters, we often presume a great deal concerning the major part which remains unknown, and the misconceptions which thence ensue in theory, are transferred into practice.

In the late German war, the French army on their return from Bohemia, were seized with Tertian Agues of the putrid kind, which at length terminated in critical abscesses, which formed behind the ears, and in the arm-pits. When these abscesses were fully matured, they were opened according to the usual mode of practice in similar cases. But no sooner was this unfortunate operation performed, than the symptoms recurred, accompanied with extreme prostration of strength, under which the patients generally sunk in a few days. But when the sick were left to Nature's own management, without any attempt to promote, or retard suppuration, or to open the abscesses, the purulent matter was spontaneously discharged by the intestinal canal, or some of the other emunctories. The practitioners were now led to acquiesce in the mode of cure pointed out by Nature, and from this time, almost all who were affected with the disease recovered. \*

Thus Art often boldly usurps the province of Nature, and undertakes to regulate the inordinate motions of a complicated machine, and not unfrequently by very improper, or very inadequate means. From this source proceed innumerable errors in the treatment of diseases, and endless mistakes concerning the effects of medicines. Intermittent Fevers, and the Bark, the subjects now under discussion, afford pregnant examples of both. Nor can any reformation be  
expected.



expected till more attention is paid to that excellent maxim of the illustrious Verulam :

*“ Non fingendum, aut excogitandum, sed inveniendum  
quid NATURA faciat, aut ferat.”*

I remain, Dear Sir,

Your most obedient Servant,

A. FOTHERGILL.

London, Sept. 20, 1782.

## APPENDIX



# A P P E N D I X

T O T H E

T H I R D E D I T I O N.

*A Letter from Dr. SAMUEL FOART SIMMONS, F. R. S.  
to Dr. SAUNDERS,*

DEAR SIR,

**T**H E superior efficacy of the Red Bark is now so clearly established, that it would be superfluous to trouble you with a detail of the numerous cases in which I have tried it. In the cure of Intermittents, some of them very obstinate ones, and that had resisted the Common Bark, it has not once failed me; and I have lately seen an infusion of it remove a double Tertian of three months standing, in a young woman, who had taken a large quantity of Oak Bark, and of the pale Peruvian Bark, both in decoction and in substance, without experiencing any relief from either. A lady upwards of sixty years old, who resides in a part of Kent where Agues are very frequent, and who for more than a twelvemonth had laboured under a Quartan, which had brought on symptoms of Jaundice, and resisted the Common Bark, change of situation, and a variety of other remedies, likewise owes her recovery to the Red Bark. My learned and worthy friend, the celebrated



celebrated Professor Camper, informs me, that he has experienced the same good effects from this Bark in Friesland, a country where agues are endemial. From repeated experiments, he is convinced that six grains of it are equal in efficacy to a scruple of the pale Peruvian Bark. Now that the virtues of this excellent remedy are so fully ascertained, you will naturally be desirous of enquiring more particularly into its history. From the largeness of this Bark, you were at first inclined to consider it as the Bark of the trunk, or larger branches of the *Cinchona Officinalis*, Lin. and the Quilled Bark as a production of the twigs, or smaller branches of the same tree; but having lately met with some very good Red Bark, as small as the Quilled Bark in common use, you are now, it seems, disposed to think, that the tree which produces it may be a variety, or perhaps a distinct species of the *Cinchona Officinalis*.—On this head I have some intelligence to communicate, which I am persuaded will be acceptable to you.

Amongst the papers of the late M. Joseph de Jussieu, (brother of the famous Bernard de Jussieu) one of the French Academicians, who went to Quito in Spanish America, in order to ascertain the figure of the earth, and who died lately at Paris, several interesting observations have been found relative to the Peruvian Bark. These have been communicated to the Royal Medical Society at Paris, by his nephew Dr. Anthony de Jussieu. In his description of the genus, M. de Jussieu agrees with his fellow traveller, M. la Condamine, but he admits a greater number of species. These, however, may perhaps be very properly reduced to two, as the rest seem to be only varieties.

The first species includes the red, the yellow, and the knotty (*le noueux*) Barks, all of which have very smooth leaves, flowers of a purplish colour, and inodorous, with a Bark that is bitter to the taste, and more or less coloured. Of these three the Red is held in the highest estimation, and it is this sort of Bark, according



ing to M. de Jussieu, which was employed in the early days of this remedy in Europe, and which acquired it so much, and such deserved celebrity. The tree that produces it is become so exceeding scarce, that in the year 1739, M. de Jussieu found it growing only in a few places in the neighbourhood of Loxa, so that the inhabitants of Peru had been obliged to substitute the yellow and knotty Barks in its stead, both of which they are said to prefer for their own use, because they suppose them to be less active and heating. But M. de Jussieu, who had experienced the good effects of the Red Bark, both in his own person, and in others, considered it as infinitely superior to the rest. Even the trees that produce the yellow and knotty Barks are said to be diminishing in number so fast, that it is to be feared they will in time become extinct, unless a regular mode of cultivating them is adopted, or they are discovered elsewhere.

The second species includes the White Barks, of which there are four varieties. They have all of them broad roundish hairy leaves; the flowers are red, very odoriferous, and furnished with hairs on their inside surface. The fruit is longer than that of the former species, and the outer Bark is of a whitish colour. In two of these varieties, the inner layers of the Bark are of a reddish hue; they have a slightly bitter taste, and when fresh, are said to possess a slight febrifuge quality, but which they soon lose. The Bark of the other two is entirely white, insipid, and of no efficacy.

M. Ant. de Jussieu has still in his possession some extract prepared by his uncle upwards of forty years ago at Loxa, from the Red Bark. Some trials lately made with it, prove it to be infinitely superior in efficacy to the extract of Bark in common use, so that its virtues do not seem to have been diminished by keeping.

M. de Jussieu, in his travels, found a few of the trees that produce the yellow and knotty Barks, growing in different



different parts of the valley that extends along the chain of the Andes, and in the district of Yungas, which is near it; but it was only about Loxa, in the 4th deg. of S. Lat. that he saw forests of those trees. It would seem therefore, that the heat peculiar to such a latitude is more genial to the *Cinchona* than that of any other climate, and of course we can hope to meet with it only in such a temperature. Upon this principle we might be tempted to look for it at a similar distance from the equator in a northern latitude. This has actually been done: Don Casimir Ortoga, Professor of Botany at Madrid, has lately by order of the Spanish Minister for the American department, sent to the Royal Medical Society at Paris, specimens of two species of *Cinchona* recently discovered in America, in the province of Santa-Fe, which is situated 4 deg. and half of north latitude.

These specimens are well preserved, but not quite perfect, as the flowers are wanting. The leaves and fruit of one of these species exactly resemble those of the Red Bark, sent by M. la Condamine, from Peru, and which are still preserved in M. de Jussieu's *Hortus Siccus*. The other specimen proves to be a White Bark, and of course a bad species. The Spanish Minister accompanies these specimens with a request, that the Society would inform him what degree of attention they merited. The Society have of course given his Excellency every necessary information on this subject, and as he is now aware of the great importance of the Red Bark, there can be no doubt but proper directions will be given for its cultivation in *Santa-Fe*, not only on account of its scarcity at Loxa, but because it will be much more easily conveyed to Europe, as a river that runs through the province of *Santa-Fe* empties itself into the harbour of Carthagená, so that we may hope soon to see a new source opened for this admirable remedy.

I cannot



I cannot conclude this long letter, without thanking you for the pleasure and information I have received from the perusal of your ingenious publication, which forms so valuable an addition to the *Materia Medica*. Believe me, with great truth,

Dear Sir,

Your faithful and obliged Friend  
and humble Servant,

SAM. FOART SIMMONS.

*Air-Street, Piccadilly, Feb. 17, 1783.*

*Extract of a Letter from Mr. AIKIN, Surgeon, at War-*  
*rington.*

THE specimen of Red Bark that I examined, agreed perfectly with your description. I tried its strength by the tests of the action of water and spirit, and was immediately convinced of its possessing a much larger share of active matter than the best Pale Bark; the most decisive experiment was the quantity of resin obtained by evaporating a spirituous tincture drawn from equal quantities of both sorts; that yielded by the Red Bark, was in proportion of three to two of that extracted from the Pale Bark, and yet on infusing the woody *residua* of each in boiling water, that of the Red gave a bitter liquor, which struck a manifest black with martial vitriol, whereas, that of the Pale, gave out neither sapid nor colouring particles. My friend, Dr. Haygarth, informs me, that on a similar experiment made at Chester Infirmary, the resin extracted from Red Bark was, to that from Pale, as 229 to 130.

With respect to the medical efficacy of this Bark, I am not able to relate any fair comparison of it, with the common sort, as Agues, in which the best opportunity is afforded for such a comparison, have been uncommon

M

here



here since I attended to this subject ; I have prescribed it in most of the cases in which Peruvian Bark is usually given, and from the general result, I have no doubt of its virtues being similar, but probably superior, to those of the kind commonly preferred.

I am, Dear Sir,

With sincere Regard,

Your obedient Friend and Servant,

J. AIKIN.

*Warrington, Feb. 10, 1783.*

I HOPE I shall not be considered as presumptuous, in concluding, that the foregoing observations are sufficient for determining the superior efficacy of the Red Peruvian Bark. And it seems reasonable to hope, that the introduction of this kind of Bark may be attended with the happiest effects, and enable us to oppose more successfully those malignant and remittent fevers of warm climates, and unfavourable situations so destructive to our fleets and armies.

I cannot, however, finish, without returning my best thanks to the gentlemen who have favoured me with their correspondence ; and I think it necessary to express my obligations to many gentlemen whose letters were too late for publication.

They all concur in recommending the Red Peruvian Bark, as more efficacious and powerful than any other kind.

From the numerous trials I have made with it, in Intermittent Fevers, and other diseases, I am disposed to conclude, that it need be employed only in half the quantity we generally recommend of other Bark.

I have likewise the satisfaction of assuring my readers, that it is now in general use in all the large Hospitals in London ; and such is the preference given to it, that the demand is difficultly supplied.



Be careful in the choice of it, by attending to the characters which distinguish it from the large Bark, hitherto rejected by our Druggists.

I shall continue to be diligent in my enquiries on the subject, and I most earnestly request the favour of my friends, that they will persevere in supplying me with accurate observations, so as to determine, with precision, in what other diseases this valuable remedy may be used with safety and advantage.

The operations and effects of remedies can only be ascertained by the united industry and experience of intelligent men ; who, by being aware of the difficulty of making observations, are sufficiently guarded against the fallacy to which they are unavoidably exposed.

T H E E N D.



THE GENUINE  
RED BARK,

EXAMINED AND APPROVED BY  
DOCTOR SAUNDERS,

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AND

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Whose ear is ever open, and his eye  
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\* \* If aught in Nature can touch the nicest springs of the benevolent mind with tender compassion, and draw forth the tears of real sensibility, it must be, When a good Man falls. The unfortunate Author of



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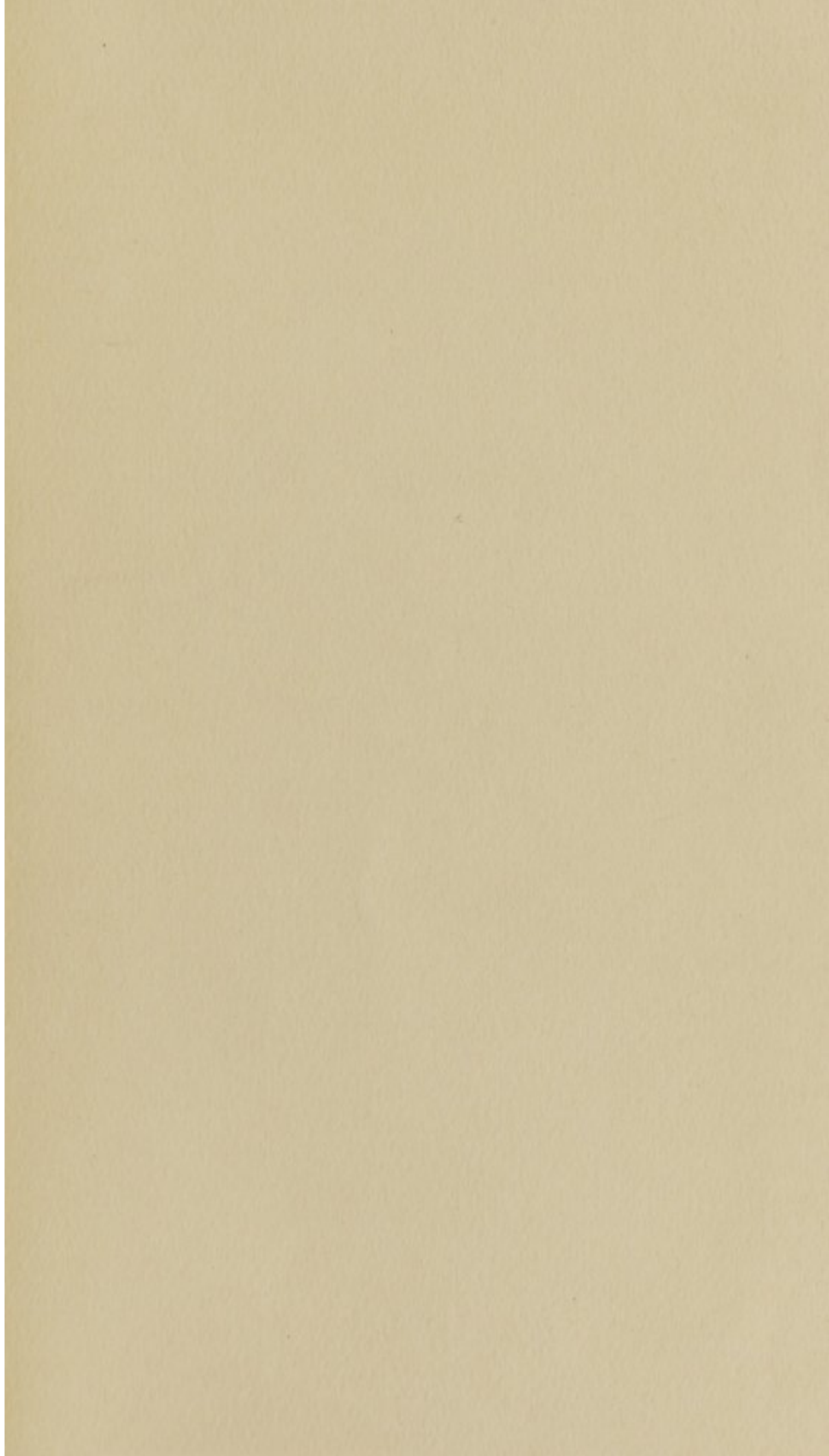
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