**Observations and discoveries made upon horses, with a new method of shoeing / [Translated by James Parsons?] by the Sieur La Fosse ; With copper-plates.**

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# OBSERVATIONS

AND

# DISCOVERIES

MADE UPON

# HORSES,

WITH

## A New Method of Shoeing.

*By the Sieur* LA FOSSE,
FARRIER to the King of FRANCE.

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With COPPER-PLATES.

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LONDON,
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MDCCLV.

THE

# EDITOR's PREFACE

TO THE

# READER.

*SINCE experimental philoſophy has been ſo happily propagated by the learned of our own nation; it has been ſpread and adopted into all the ſeminaries of Europe wherever the native curioſity of mankind, gratified and improved by an application to the liberal arts, has prevailed. It is to this we owe, this day, the benefits ariſing to mankind, from the progreſs made in phyſic and ſurgery; it is to this we owe the removal of prejudices in every part of learning, and the replacing of it with certainties and plain truths; and it is in a word from this the reciprocal benefits accruing from one nation to another, by their improvements and inventions, daily ariſe.*

*However negligently the diſeaſes of horſes have been heretofore committed to the care of the moſt ignorant among mankind; the great uſe theſe animals are of in the æconomy of life has at laſt pointed out to men of ſenſe and learning to take them into their conſideration: Comparative anatomy has excited them, and the great ſimilarity of parts,*

*offices, and functions in the ſtructure of a horſe with thoſe of human nature, was a ſufficient allurement to invite gentlemen to take them under a more mature conſideration, and to reſcue the noble animals from the hands of the moſt illiterate empirics.*

*I do not intend to expatiate upon the uſe and importance of theſe animals in life, as they are evident already to every obſerver; I mean only to give ſome little account of the improvements made by the Sieur la Foſſe upon farriery in the following treatiſe; which I am the more ready to do that thoſe of my countrymen, whoſe concerns require the imployment of horſes, may profit of it in their management and the cure of their diſeaſes.*

*Nor would I in the leaſt forget the ſenſible treatiſes wrote and publiſhed by our own authors Gibſon, Bracken, and Bartlet, who have treated the ſubject in a learned manner, and who made early and ingenious ſteps towards reducing it to a rational ſyſtem, well knowing it was a matter of weight enough to engage the moſt ſagacious in the improvement of an art, from which ſo conſiderable a benefit ariſes to the greater, and indeed the ſuperior, part of mankind.*

*But I ſhould think myſelf wanting in the duty I owe my country, if I did not propagate among them, whatever occurred to me that might tend to ſuch laudable ends, in the moſt ſpeedy and beſt manner I could. And therefore as ſoon as this valuable little book come to my hands, I took care to take*

*the proper meaſures for communicating, to the public, thoſe uſeful hints that appeared in it upon the moſt important points of farriery; being additional diſcoveries to what has already been ever made in any country.*

*This author then has given the anatomy of a horſe's foot, and in the moſt clear manner laid down the different degrees of punctures a horſe is liable to, and their different conſequences, which he has carefully demonſtrated by proper repreſentations in copper plates, as well as amply provided for in the method of cure, as far as human ſkill and penetration can go; and in the whole, it appears that he is very well verſed in the anatomical diſtribution of the parts of a horſe, or has been aſſiſted by ſome able anatomiſt; and from his obſervations on the parts, he has found that farriers were perpetually rowelling, cauteriſing, and applying topical medicines to parts of horſes that had no ailment, by their ignorance of ſuch as were the real ſeats of their diſorders.*

*Another important diſcovery of this author is his pointing out the true ſeat of the glanders, which has always been thought a diſeaſe of the lungs; Mr. Bartlet, one of our Engliſh authors has approved and adopted his doctrine, and has added ſome judicious remarks of his own upon it; by which he merits the thanks of his countrymen in general.*

*I ſhall only take the liberty to add briefly a word*

*or*

*or two concerning two other points of as great moment as thoſe mentioned; the firſt is his application of the powder of the* Puff-balls *to ſtop the blood in divided arteries, and the other is an improvement upon the manner of ſhoeing horſes.*

*As to the firſt he has made ſuch undeniable experiments in caſes of amputation of limbs and other parts, that the certificates of the Royal Academy of Sciences at Paris were readily granted him, as will be ſeen in the ſequel of his book; and indeed the great benefit of this diſcovery does not ſtop here; it will be extended to caſes of amputation in mankind, and be capable of taking away a conſiderable part of their pain as well as other accidents that ſometimes attend the uſual methods in ſurgery, of providing againſt dangerous hæmorrhages.*

*And in a word, the reader will find many curious remarks upon the methods of ſhoeing, which it were to be wiſhed, our farriers will ſoon come into; and many precautions which cannot fail of giving great ſatisfaction, as well as conduce very much to the profit of all keepers of horſes.*

*We muſt inform the reader, further that (as our ingenious author has tranſlated the chief part of Mr. Bartlet's* 12*th chapter upon the diſeaſes of horſes in this book, we have thought it neceſſary to tranſcribe the Engliſh original here, becauſe it contains the ſcope of the Sieur la Foſſe's diſcoveries upon the glanders; and becauſe Mr. Bartlet, beſides trepanning as our author mentions it for this diſeaſe, directs keeping open another hole, which he calls the lower hole, with a leaden hollow tent,*

*to,*

*to let the matter run off; this lower hole appears by the foregoing paragraphs to be made into the maxillary ſinus, by perforation in the place of a tooth drawn for that purpoſe; and this hint is wiſely taken from the invention of* Drake *and* Cooper, *which makes Mr. Bartlet compare the ozæna and its method of cure to the glanders, and from thence add the keeping open this lower hole in the manner mentioned above; as well as that on the horſe's cheek, opened by the trepan, as invented by the Sieur la Foſſe; nor indeed can it be thought, in our opinion, an uſeleſs addition; we muſt further add that the inſtrument referred to by Mr. Bartlet in the adjoining paragraph, is no other than the trepan, which this author has added to his copy of the Sieur la Foſſe's plate of the head of a horſe.*

## ERRATA.

| Page | Line | |
|---|---|---|
| 11 | 13 | *for* cup *or. r.* cut in the capſula |
| 12 | 10 | *r.* 4. the holes. |
| 16 | 1 | *for* coronary, *r.* coronet |
| Ibid. | 2 | *for* which was diſcuſſed, *r.* they reſolved upon drawing the ſole. |
| Ibid. | 16 | *for* harneſſed, *r.* put to |
| 27 | 8 | *for* by, *r.* for the thread, a ſpongy excreſcence ſo called |
| 34 | 6 | *for* ſmear it over *r.* diſfigure it. |
| Ibid. | 24 | *for* amputation *r.* operation. |
| 35 | 4 | *for* ample *r.* firm. |
| 36 | 12 | *for* contrary to nature, *r.* this preternatural bone. |
| 38 | 15 | *for* medicine *r.* farriery. |
| 39 | 24 | *for* hyppiatric *r.* hippiatric. |
| 44 | 17 | *for* ſnot *r.* matter. |
| 46 | 6 | *for* of four *r.* to four. |
| 48 | 4 | *for* deſcription *r.* deſign. |
| 82 | 12 | *for* diminiſhed *r.* confined down. |

## *BOOKS printed for* J. NOURSE *at the* Lamb *oppoſite* Katherine-ſtreet *in the* Strand.

A TREATISE on the Diſeaſes incident to Children from their Birth to the Age of fifteen; with particular Inſtructions to tender Mothers, prudent Midwives, and careful Nurſes. The Whole made familiar to every Capacity. By the learned Dr. JOHN ASTRUC, Regius Profeſſor of Medicine at Paris. und chief Phyſician to his preſent Majeſty the King of France, *&c.* Octavo, 1746.

ACADEMICAL LECTURES ON FEVERS; in which the eſſential Symptoms and Nature of the various Kinds of Fevers are deſcribed, the immediate Cauſes pointed out, with the general and particular Indications in the Method of Cure ſubjoined to each. Confirmed by the Author's ſucceſsful Practice for forty Years; read in the Royal College at Paris. By the ſame Author, Octavo. 1747.

A DISSERTATION ON THE FOOD, and Diſcharges of Human Bodies. By BRYAN ROBINSON, *M. D.* Octavo. 1748.

BOERHAAVE'S MEDICAL CORRESPONDENCE; Containing the various Symptoms of Chronical Diſtempers, the Profeſſor's Opinion, Method of Cure, and Remedies. To which is added, his Practice in the Hoſpital at Leyden, with his Manner of inſtructing his Pupils in the Cure of Diſeaſes. Octavo, 1745.

In this Collection are contained many Letters, wrote originally in Engliſh, to the Doctor by Perſons of Diſtinction, Gentlemen and Ladies, *&c.* with his Anſwers; ſuch are marked ***, the reſt are tranſlated from the Latin.

THE DISPENSATORY of the Royal College of Phyſicians, London. Tranſlated into Engliſh, with Remarks, *&c.* by H. Pemberton, M. D. Profeſſor of Phyſic in Greſham College, and F. R. S. Octavo 1749. The ſecond Edition.

A COURSE OF PRACTICAL CHEMISTRY, in which are contained all the Operations deſcribed in Wilſon's complete Courſe of Chemiſtry, with many new and uncommon Proceſſes. To each Article is given the Chemical Hiſtory; and to moſt an Account of the Quantities of Oil, Salt, Spirits, yielded in Diſtillation, *&c.* from Lemery, Hoffman, the French Memoirs, Philoſophical Tranſactions, *&c.* and from the Author's own Experience; with Copper-Plates. By WILLIAM LEWIS, M. B. F. R. S. Octavo. 1746.

# ADVERTISEMENT.

THE diſſertations ſet forth in the table of obſervations are the fruits of the knowledge of anatomy. It is to that alone I owe all my diſcoveries, and if I am ſometimes obliged to deviate from the common rules of practice, theſe very principles in anatomy, and the deſtructive errors I formerly fell into, are the cauſe of it.

I never had any more knowing maſters than thoſe of my own fraternity, and therefore am more ſenſible than any other, how far I am from being perfect; but however imperfect my firſt plan may be, I would, at leaſt, claim the advantage of having firſt opened the way. If my brethren are willing to lead their children in the ſame path, and to cauſe thoſe intended for the profeſſion of Farriery to ſtudy anatomy in time; I am very confident fewer errors will be committed, and the art will in a little time be carried farther than it ever yet has been.

However,

However, as the knowledge of anatomy is not the only requiſite for a progreſs in our profeſſion, it would be highly neceſſary to join with it that of medicine. How ſhall we cure diſeaſes if we do not know them? how are remedies to be applied, if we are not certainly acquainted with either their vertues or effects? In a word, how are juſt prognoſtics to be made upon diſeaſes, if we are not truly enlightened either by our own ſtudy, or by ſome able and careful maſter?

It is yet to be wiſhed that all

who undertake the cure of horſes, were verſed in the ſtructure of that animal, they would avoid thoſe errors which diſgrace the farrier, and depreciate his profeſſion, which is of ſuch moment to the public.

A LIST

A

# LIST

OF IMPORTANT

## Obſervations *and* Diſcoveries

UPON SEVERAL

## Accidents that happen to HORSES.

1. THE exact anatomy of a horſe's foot.

2. A hiſtory of the cauſes and ſeat of different diſeaſes, ſaid to be in the hip, or ſhoulder, which lame the horſe, and are demonſtrated to be in the foot.

3. A train of new experiments and obſervations upon the glanders.

4. A memoir preſented to the academy of

ſciences, upon a method of ſtopping the blood in large arteries.

5. A new method of ſhooing horſes, both for preſerving their feet, and to prevent their ſlipping upon ſmooth pavements.

A TABLE

A

# TABLE

OF

# OBSERVATIONS.

1. THE anatomical plate of the diſſected parts of a horſe's foot, with their ſeveral figures, croſſed by ſix parallel right lines, the ſpace of which ſhews, upon every part, the importance of the accidents that happen to them; ſo that the quality and ſeat of each may be ſufficiently known, to make a true prognoſtic upon their different kinds, without having ſtudied anatomy.

2. That the cauſe of the lameneſs in horſes, which is commonly looked for in the ſhoulders or haunches, is in the foot, proceeding from the compreſſion of the fleſhy ſole, by the coronary bones puſhing againſt it: this lameneſs often becomes incurable by the coaleſcing of theſe bones, for want of applying remedies as ſoon as perceived.

3. The rupture of the great tendon called the Tendo Achillis.

4. The fracture of the coronary bone into three pieces, and ſometimes more.

5. The fracture of the nut-bone in two, and

ſometimes in three parts, but always fractured with the coronary bone.

6. The fracture of the foot bone only in two.

7. A ſet of new experiments and obſervations upon the glanders, as a ſupplement, to a treatiſe on that diſeaſe, publiſhed in 1749.

8. The manner of ſtopping the blood of the great arteries cut aſunder, without either ligature or cauſtic; with the judgment of the Royal Academy of Sciences, in conſequence of the reports of the committee, teſtifying the experiments made before them.

9. The method of ſhooing horſes, in order to ſecure them upon a pavement in ſummer, or in winter, although quite ſmooth; and the advantages attending it; 1. They are not ſo liable to caſt their ſhoes. 2. The fleſhy ſole is ſecured from ſeveral accidents: 3d. To preſerve the legs and render their motions more eaſy.

10. A note of what Dr. Bracken ſays in his tranſlation of my treatiſe upon the glanders.

11. A tranſlation of what relates to the glanders, in the treatiſe lately publiſhed in London by Mr. Bartlet, ſurgeon.

THE

# THE ANATOMICAL TABLE.

*The diſſected parts of a horſe's foot, and their figures, croſſed by ſix horizontal, parallel right lines, the ſpace of which indicates, upon every part, the importance of the accidents that happen to them; ſo that the quality and ſeat of each may be ſufficiently known, to make a true prognoſtic upon their different kinds without having ſtudied anatomy.*

## EXPLANATION *of the* FIGURES *of the* SECOND PLATE.

THE firſt figure repreſents the bottom of a horſe's foot.

A. is the horny ſole.

B. the frog.

2. The *hoof* towards its lower edge, called by the author the wall of the foot.

Figure the ſecond ſhews the horny ſole A. raiſed from the fleſhy ſole C. round which is the enchannelled fleſh, 6. placed in the ſulcus of the inner ſurface of the hoof: 5. the horny part of which is ſoft and white.

Figure the third repreſents the under part of the fleſhy ſole C. raiſed from the foot bone * D. G the covering or *theca* of the *Tendo Achillis*. 2. The cartilage. 6. The edge of the fleſhy ſole confined in the furrow of the channelled horny ſubſtance.

* The foot-bone is Gibſon's *Coffin-bone*.

The

The fourth figure ſhews a back view of the leg.

7. The ſkin laid open, in order to view the inner ſoft parts belonging to the articulations.

8. The aponeurotic membrane, formed of different laminæ, which ſeparate the muſcles and cutaneous tendons.

9. and 3. Are partly the covering of the flexor tendon of ——

5. The coronary bone *, which ſerves as a covering to the Tendo Achillis, 10.

11. The ligament of the cannon-bone, the paſtern and the coronary bones ;

16. The cup or capſula of the tendon of the coronary bone.

18. The canon-bone †.

6. The foot-bone.

Figure the fifth is the ſame leg and in the ſame view.

2. The foot bone.

1. The Tendo Achillis, diſſected to ſhew the coronary bone 6.

3. The nut-bone ‡.

4. The concave part of the foot-bone to which the tendon is fixed.

7. The ligament of the foot-bone with the nut-bone.

* The coronary bone is the little paſtern of Gibſon.

† French authors call thoſe bones, *Canon bones* both before and behind, which Gibſon calls in the fore legs, the *Shank bones*, and in the hind legs the *Inſtep bones*.

‡ The nut-bone called by the French *Os de la noix* is a little oblong bone placed acroſs at the junction of the little and great paſterns behind, which is not taken notice of by Gibſon.

8. The

8. The ligament of the tendon with the nut-bone.

Figure the ſixth repreſents the *Tendo Achillis* raiſed and ſeparated from figure 5. To ſhew the lamina 8. which ſerves as a ligament to the nut-bone of the ſame figure.

Figure the ſeventh ſhews the enchannelled fleſh, 1. The wall or hoof being raiſed from it; 2. The rough border that ſurrounds the enchannelled fleſh above the hoof.

3. The cartilage of the foot.

4. The extenſor tendon of the foot.

Figure the eighth demonſtrates the bone of the foot Z. the enchannelled fleſh of which is rais'd with the cartilage.

5. The ligament of the coronary bone with that of the foot.

3 and 4. The extenſor tendon of the foot.

*The third plate, containing figures of the oſteology and fracture of the bones.*

Figure the firſt repreſents a fore view of the leg.

3. The canon-bone cut acroſs at the upper end.

4. The paſtern bone.

5. The coronary bone.

6. The foot bone.

The ſecond figure is a back view of the ſame leg.

8. The canon-bone.

4. The paſtern.

5. The coronary bone.

3. Th

3. The nut-bone which cannot be ſeen in a fore view.

6. The foot, or coffin-bone.

The third figure is another back view of the ſame leg.

16. The place where the artery divides into two branches.

5. The diſtribution of theſe two branches round the foot.

The holes into which theſe two branches paſs, in the foot.

6. The foot bone.

The fourth figure is the coronary bone viewed anteriorly, with the marks of its fractures, 1, 2, 3.

The fifth figure is the ſame coronary bone in a back view with the appearance of the ſame fractures, 1, 2, 3.

The ſixth is the nut-bone fractured into three parts, 4, 5, 6.

The ſeventh ſhews the ſame bone fractured in two, 4. 4.

The eighth is a figure of the foot bone viewed on its upper ſurface fractured in two, with the mark of the fracture, 6, 7.

The ninth is a view of the under ſurface of the ſame bone, with the fracture marked 6. 7. this bone is very ſpongy.

OBSER-

# OBSERVATIONS

UPON SUCH

# ACCIDENTS

*As often happen to horſes feet, which give them a ſudden lameneſs, the cauſe of which cannot be diſcovered.*

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## Observation I.

A lame horſe was committed to my care, but I could receive no manner of information concerning his diſorder; and after I had dreſſed him for eight and twenty days, without either diſcovering the cauſe, or the leaſt ſucceſs: they put him into the hands of another farrier, who alſo attended him fifteen days longer. The owner of the horſe ſeeing this man's endeavours as fruitleſs as mine, gave him up to me, and I cut off his leg in order for diſſection; and found the *Tendo Achillis* ruptured near its inſertion, and the coronary bone broke into three pieces, without any diſlocation; having as recent an appearance as if they had been fractured but a day; altho' the accident happened ſix weeks before. And not being able to find out how, nor by what particular

effort

effort this bone could be broken; nor whether it was begun by the foot, or paſtern bone; I ſhewed it to ſeveral ſkilful perſons, who after a long examination appeared as much at a ſtand about it as myſelf. Nor was there any ſudden effort of the horſe obſerved before it.

## Observation II.

With reſpect to ſuch efforts, I myſelf ſaw a horſe, put to a coach, fracture the coronary bone at his firſt ſetting off.

## Observation III.

I happened to paſs by a coach, when the coachman, ready to put off, whipped his horſe, who inſtantly made a ſpring, and became ſuddenly lame; having obſerved it, I felt his foot, and the rattling noiſe I was ſenſible of, by touching him, indicated the coronary bone to be fractured; and the diſſection farther proved the Tendo Achillis to have been ruptured near its inſertion, as may be ſeen by the figures.

## Observation IV.

A horſe who was put to a coach, being at the ſame time very quiet, received a cut of a whip from the coachman, which made him tremble, whence he ſuddenly fell lame; the coach-

coachman ſaw it and looked at his foot. And though nothing ailed him to appearance, he put him into the ſtable. I was called and found the coronary-bone fractured, declaring him incurable; but this was doubted, becauſe they had not obſerved any effort made by the horſe before it; however they took care of, and dreſſed him for a month, but as he grew no better, they put him to death; I diſſected his foot to ſhew them I was not miſtaken; I demonſtrated that the coronary-bone was fractured into three pieces: but was ſurpriſed to find the nut-bone alſo broke in two, and the *Tendo Achillis* entire, becauſe I never ſaw fractures of this kind before, among the many diſſections I had made.

## Observation V.

Having examined a horſe, whoſe ſhoulder was dreſſed, which was thought the ſeat of his diſorder; I aſſerted it was in the foot, cauſed by the compreſſion of the coronary-bone; for, that being in motion, it raiſes and puſhes the nut-bone againſt the tendon, which puts the fleſhy ſole in a ſtate of compreſſion, as if between an anvil and hammer. It formed an inflammation there, and therefore they ought to have immediately drawn the ſole; but as they had loſt ſome time, and ſeeing he did not mend, I ſaw him again, and found a ſmall ſwelling at the coronary,

coronary, which I ſhewed, and which was diſcuſſed by drawing the ſole. They accordingly drew it out, after having fired the tumor; but he was not cured. He remained eight months in pain when they killed him. I found the *Tendo Achillis* oſſified at its inſertion with the coffin-bone, and this with the nut and coronary-bones, round which the cartilage was alſo coaleſced, ſo that all theſe parts formed one entire body *, the pieces of which I have yet by me. Theſe examples make it apparent that the compreſſion of the fleſhy ſole, for want of a ſpeedy remedy, becomes incurable.

## Observation VI.

Of a ſingular fracture which happened in 1743. I was called to ſee a horſe who became ſuddenly lame of his two hind feet, being harneſſed to a coach. It was thought he had ſtrained his reins; I examined him, and declared his diſorder was in his feet, and that it was incurable, for that he had fractures in them. I diſſected theſe two feet and found the two coronaries fractured, and the two tendons of Achilles ruptured: this horſe walked near a quarter of a league, with theſe two bones in that condition.

* An Anchyloſis.

## Observation VII.

Another horſe put to a coach, without any apparent violent motion, fractured the coronary-bone in twenty pieces; while the nut-bone, that of the foot, and the great tendon remained unhurt; this was the only caſe of this kind I ever ſaw.

## Observation VIII.

Another horſe had been lame a conſiderable time; and it was not known whether it was in the foot or ſhoulder: I examined him, and found the coronary-bone fractured, and aſſured them his caſe was incurable; they doubted it, but were obliged to abandon him at the month's end; I diſſected his foot and accordingly found the coronary-bone fractured in four pieces, and the nut-bone in two, the *Tendo Achillis* being ſafe.

## Observation IX.

A horſe was lame for four months; he was dreſſed at firſt above the leg, and afterwards in the foot, but his ſole was not drawn; I judged him incurable, as I ſuſpected an anchyloſis, and he was put to death. I diſſected the foot, and found the foot or coffin-bone fractured in two, in which fracture the anchyloſis began to be formed, as well as the oſſification between the coronary, nut and coffin-bones. The fracture croſſed diametrically one of the cavities of the articulation, and ended towards the middle of the toe or point of the foot-bone. So that this bone appeared to be divided obliquely into two unequal parts; It is not unlikely that the horſe had trod upon a ſtone which raiſed one ſide of his foot more than the other, and which, joined to the weight of his body, cauſed this oblique fracture; although the foot was in a perpendicular direction: this is the ſecond fracture of this ſort I have met with; and it is curable if ſpeedily taken in hand. I have already ſeveral feet, which are oſſified like this.

## Observation X.

A horſe was lame for two months without their knowing his caſe; I pronounced the lameneſs to be in his foot, and ſhewed them a ſmall ſwelling at the coronet, they attended him, but the ſwelling increaſed, for two years, by neglecting to draw the ſole in the beginning. I diſſected this foot, and found the nut, coronary, and coffin-bones oſſified together; which was cauſed by the diſcharge of the oſſeous juice upon them; they were ſo coaleſced together, that it was difficult to diſtinguiſh the places of the articulation of theſe three bones.

## Observation XI.

An anchyloſis after an inflammation. An effort or ſtrain which might not be violent enough to fracture the coronary nor nut-bones, nor even rupture the flexor tendon, might go ſo far as to produce an inflammation of the fleſhy ſole; if the inflammation is communicated to the ligaments, tendons, and capſulæ of the joints. I pronounced it always incurable by the formation of an anchyloſis in the part if not inſtantly taken in hand. I have ſeen two kinds of this diſeaſe in feet diſſected by myſelf, an account of the pieces of which, as well

as of the fractured bones mentioned before, were added to the memoir given in to the academy as a ſupplement.

## Observation XII.

Drawing the ſole prevents ſuch oſſifications as I have been mentioning, and relieves the fleſhy ſole from preſſure; which ſole is regarded as an expanſion of the muſcles and tendons of the foot; this operation enlarges the ſpace in the hoof, the fleſhy ſole being no longer preſſed, its inflammation ceaſes and the foot recovers its natural ſtate.

When a horſe's ſole is drawn, care muſt be taken to let the foot bleed in order to empty the blood-veſſels and lymphatics, to apply with the firſt dreſſings, turpentine and its ſpirit, or oil; and not to bind the ſplints too ſtraitly, that the inflamed parts may not be injured, the coronet muſt be bathed with oil of turpentine, and the hoof dreſſed up all round with emollients, in order to moiſten, extend and ſoften the parts.

## Observation XIII.

The hoof of a horſe may be compared to a ſponge; when it is dry it contracts itſelf even to the inner parts; if it be moiſtened, it ſoftens and dilates; if he ſtands long in a ſtable without taking care to keep the hoofs moiſt, he often goes lame; becauſe they are ſuſceptible of contraction as well as dilatation. The compreſſion in the hoof happens by the coronary puſhing againſt the nut-bone, upon which it partly moves; which having the action of a lever, takes for its point of ſupport the upper and fore-part of the foot-bone compreſſed; the nut-bone which it raiſes, and which puſhes againſt the *Tendo Achillis*, which tendon preſſes the fleſhy ſole againſt the horny one; and all theſe combined compreſſions produce an inflammation upon the fleſhy ſole, which ſpreads over all the other parts.

## Observation XIV.

I have happened to dreſs the ſhoulders of lame horſes, becauſe the owners inſiſted that the cauſe was in that part; although it really was in the feet, and proceeded from compreſſion; theſe horſes were cured without having any remedies applied to the feet, but it was by great

chance, length of time, and reſt; which often happens.

I can however aſſert that I never ſaw nor heard of a horſe, put to hard labour, as drawing heavy carriages, or carrying heavy burdens, fracturing the coronary-bone.

## Observation XV.

Strong compreſſions are diſtinguiſhed by puſhing the thumb upon the coronet, it makes a horſe feel as ſharp a pain as if there was a fracture; in this caſe no time muſt be loſt before the ſole is drawn.

When the compreſſion is not ſo violent, as that it cannot be thus known by the coronet, it muſt be examined in the foot, the horny ſole muſt be pared until it becomes flexible under the tool; which muſt be done as near the frog as can be; the tool muſt be preſſed, and if the horſe is ſenſible of it in that place, we may be aſſured that there is a compreſſion of the coronary-bone upon the nut-bone. The method of cure is to pare the ſole to the quick, to let him bleed at the point of the foot, and apply a pledget with oil of turpentine to the bleeding; alſo an emollient pultiſe in the foot and round the coronet. Above three fourths of theſe caſes are cured without drawing the ſole: but I prefer bleeding in the upper part of the foot, in expectation of the returning blood; whereby you will the better unload the part.

## Observation XVI.

The moſt certain remedy is to draw the ſole immediately, I have cured horſes in fifteen days by this method, that were not able to put their feet to the ground.

Again, the length of time the compreſſion has continued, may be known by the adheſion of the horny to the fleſhy ſole, for the horſe bleeds but little after drawing it; becauſe of the interruption of the circulation of the fluids by the compreſſion.

## Observation XVII.

A horſe, drawing a cart heavily loaden, preſſed his foot upon a piece of iron, which ſplit the foot or coffin-bone. I took off the ſhoe and drew the ſole immediately; and he was perfectly cured. This bone ſo ſplit by the iron ſhews that this part, fractured by the mere effort or action of the horſe, may unite, if preſently taken in hand, even though the fracture happens above by the coronary-bone.

The fracture of the foot-bone which has no other motion but thoſe of the fleſhy and horny ſoles upon which it is ſituated, happens from one of the two convex ſides of the lower part of the coronary-bone, the other ſide making an unequal preſſure: this fracture ought to

unite, becauſe the motion of the foot-bone upon the fleſhy ſole is very imperceptible, being ſtrengthened by the horny ſole, encloſed all round by the enchannelled fleſh, and ſecured over all its ſurface, which is equally enchannelled by the inner horny ſurface of the hoof, which is ſoft and whitiſh.

From all I have ſaid above, it may be concluded, that 1. The nature of the union of the fibres of the ſuperior parts, the tenſion and elaſticity of which is very great in the foot, ought to render them ſuſceptible of all the unhappy conſequences of compreſſion ;

2. That it is to no purpoſe to keep horſes who have any fractures, except in the foot-bone; the fracture of this is capable of uniting, becauſe of its having ſo little motion, and is ſecured as I have juſt ſaid.

I keep ſome preparations as teſtimonials of caſes which prove, that if a nail penetrates to the joint of the foot, where matter may be formed, and by its long continuance putrify, ſo as to erode the cartilages of the joint, by its corroſive quality, the caſe is incurable.

3. When a ſudden motion or effort of a horſe is not ſufficiently violent to fracture the articulations of the foot, the puſh of the coronary-bone upon the nut-bone, muſt occaſion a ſtrong compreſſion upon the fleſhy ſole againſt the horny ſole, which we look upon to be no more than an expanſion of the nervous tufts of

the

the muſcles and tendons of the foot as we have ſaid before.

4. That in all caſes of ſtrong compreſſion the inflammation muſt oſſify the joints of the foot, by the ſtagnation of the fluids, eſpecially when not taken care of ſoon enough.

B. I have ſeen examples wherein, when the nut and coronary bones have been wounded by nails, or when matter has been long pent up, the cartilages of theſe bones have been eaten into by the ſharpneſs of it; theſe are incurable diſorders, even though all the other parts are ſound.

There can be no hopes of curing the fractures of the nut and coronary-bones, as we do the ruptured *Tendo Achillis*, for all their articulations are in continual motion; and if by chance they ſhould unite, the horſe would ſtill inevitably be lame, by the *callus* formed in the joint, as Mr. Morand ſays in his report given in to the academy.

B. I preſume the very ſtructure of the foot makes it liable to ſeveral accidents. The hoof wherein the articulations of the upper parts aſſemble, and which, beſides, has its own particular motion, has need of great ſtrength and ſolidity; becauſe all the weight of the body, bearing upon the feet, can admit neither the bones nor tendons to vary their condition.

## Observation XVIII.

Having dreſſed a horſe whoſe ſole was drawn, from which they had cut away part of the frog for a ſtreet nail that had affected it; being almoſt cured, as he lay along, he had a cut of a whip given him; he ſtarted up but was lamed by the ſudden ſpring in riſing. I thought at firſt that it was occaſioned by the preſſure of the coronary-bone againſt the nut-bone; but about ten days after the accident, a humour appeared about the middle of the foot; I then thought the nut-bone might be fractured, but the humour penetrated deeper; I obſerved the nut-bone intire, but the tendon ruptured, and the lower part properly attached. In five or ſix days more this part of the tendon came off piece-meal from its adheſion, and laid the nut-bone bare. I uſed the *Fioraventi Balſam* * in my dreſſings for three months which ſucceeded; what gave me hopes, was my having ſeen ſome horſes, whoſe tendons were cut acroſs through ignorance, recover; I had a mind to know how the upper part of the tendon could reunite at its inſertion upon the foot-bone, for this horſe was cured. And an accident happened by which he died eleven months after, which gave me an opportunity of diſſecting his foot; when I found the tendon oſſified with

* A vulnerary balſam, like the Friars Balſam.

the

the nut-bone, and this with that of the foot, ſo as that theſe three parts were united, and the coronary-bone had preſerved the freedom of its motion in the joint. The horſe was no longer lame, but in walking inclined a little upon the heel.

## Observation XIX.

A horſe, upon whom the extirpation of the frog by the thread was performed, had the *Tendo Achillis* much injured; I could not well tell whether it happened from cutting out the thread, or from the acrimony of the topical applications; the tendon however was deſtroyed as that mentioned above, the nut-bone was laid bare, and the tendon putrefied at its inſertion. After his cure was compleated, he died in five or ſix months. And I found the nut-bone covered, by a kind of ligament, all over that part which was connected with the upper part of the tendon: this new tendon was as a ligament, and adhered to the nut-bone, which was oſſified to it; but it was more than twice as thick as in its natural ſtate. It remains to know whether this excreſcence proceeds from the tendon, or from the covering of the cellular membrane or from other membranes; but it is time and obſervations which muſt lead us to the knowledge of this.

REFLEC-

# REFLECTIONS.

IN reflecting upon the various motions a horſe makes, and upon the ſtructure of his foot, we cannot be ſurpriſed to find this part liable to ſo many accidents. Experience ſhews us that for one horſe who is lamed in the haunch or ſhoulder, an hundred have it in the foot, and that the knowledge of this part merits all our attention: I am of opinion theſe accidents happen chiefly to draught-horſes, and not to thoſe of the ſaddle; I alſo think that it is the different attitudes of a horſe's foot overcharged at the ſame time with the weight of his body, that cauſe the different fractures of the coronary and nut-bones; for when the foot has not a direct poſition, the joints are twiſted, as when a horſe treads upon the point or toe of the hoof, the upper and inner part of the coronary-bone, which is in an oblique poſition, preſſed in that ſtate by the burthen of his own body, is forced to yield on one ſide, and riſe on the other, its lower and back part, which now riſes, drives the nut-bone againſt the *Tendo Achillis* which ſuſtains it, the tendon preſſes in its turn againſt the fleſhy ſole, which is alſo compreſſed againſt the horny ſole, which is its point

point of ſupport; the tendon, coronary, and nut-bones become fractured upwards and backwards by the paſtern, which alſo had an oblique poſition, and downwards and forwards by the foot or coffin-bone, which here acts as a wedge.

The nut-bone is ſometimes fractured by the lower and back part of the coronary-bone alone: but although theſe bones are fractured in the manner I have juſt mentioned, at the inſtant a horſe gives a ſpring, there happens no luxation of theſe bones, becauſe of the manner of their being tied and ſecured all round by the ligaments, the tendons, cartilages, and the conſtruction of the hoof which incloſes them and all that depend on them.

In all the horſes feet I diſſected, immediately after theſe accidents, I found the *Tendo Achillis* ruptured, and had a notion that the fracture of the coronary-bone in three pieces ought always to be followed by the rupture of the tendon, particularly after the foot is pared; or that there are froſt nails or raiſed heels to the ſhoes, ſo that the frog is thrown up from its point of ſupport; which will appear when we treat of ſhoeing.

We diſtinguiſh fractures of the coronary-bones in raiſing the foot by the lower part; the foot muſt be drawn forward, and preſſed upon the coronet with the thumb, and if there is a fracture, a ratling will be perceived;

when

when the tendon is not ruptured, it ſuſtains the bones ; and, as it is their point of ſupport, the noiſe is leſs ſenſible, but it is better diſtinguiſhed when the tendon is divided.

It is to be obſerved, as to the fracture of the foot-bone, that this bone is in a manner immoveable in its place, ſupported in its plane by the horny ſole, and in its circumference by the ſides of the hoof, which keeps it univerſally firm every way.

I never ſaw this bone fractured but once, and believe it curable, and what made me of this opinion was, that I happened to attend a horſe who had the foot-bone ſplit in two, quite through, by treading on a piece of ſharp iron ; and he was cured of it. A ſaddle-horſe has a different attitude and manner of treading from that of a draught-horſe ; the former always has the articulated parts of his foot in a perpendicular direction, and in their proper ſituation for action ; whereas the draught-horſe is accuſtomed to have theſe parts often in an oblique poſition ; and convenient for the attitude neceſſary in drawing a carriage ; and accordingly a ſtone or fault in a pavement, happening under one ſide of his foot, which is thereby inclined to the other, the preſſure of the coronary-bone charged with the whole weight of the body will be very capable of cauſing this kind of fracture.

# THE METHOD OF CURING Pricks and other Accidents That happen to HORSES Feet.

PLATE II. *upon all the lines.*

## FIGURE I.

IF a nail has only pierced the horny ſole, and but lightly touched the fleſhy ſole, there is nothing to do.

But if there is room to ſuſpect the bone of the foot D figure 3. is touched; a large opening muſt be made, in order to prevent drawing the ſole, by facilitating the exfoliation.

If the nail has penetrated to the inſertion of the tendon 10. figure 4. great attention muſt be paid to it, dreſſing it the oftener, that the tendon be not injured; if it paſſes into the concave part 4. of the foot-bone figure 5. an exfoliation will come on, without any bad conſequences, provided matter be not left any time to deſtroy the ligament 7 upon the line R figures 1. 2. 3. 4. If the nail has not paſſed to the tendon, the horſe will grow well without a neceſſity for drawing the ſole; but if the tendon is wounded the ſole muſt be carefully drawn, becauſe the ſynovia is diſcharged. If the nail has penetrated to the ligament 7 fig. 5. he muſt be dreſſed lightly every day rather twice than once, taking care not to confine the tent, nor let the matter remain in any time, leſt it might erode the cartilaginous parts of the nut-bone and deſtroy its ligaments. When the part is to be laid open, a channel'd director muſt be introduced to conduct the point of the biſtory, in order to make a perpendicular opening, and not a tranſverſe one, becauſe the tendon might be cut acroſs, which would not coaleſce again, and great miſchief might be produced.

Upon the line B. figures 1. 2. 3. 4. the ſame manner of proceeding muſt be uſed, as is marked upon the line R. but if the nail is gone up to the nut-bone 3. figure 5. it is incurable, becauſe this little bone cannot exfoliate, and

becauſe

becauſe the cartilaginous part of it is deſtroyed as ſoon as injured.

Upon the line S figures 1. 2. 3. 4. the ſame muſt be obſerved as at the line R. but if it reaches to the ligament 8. what is mentioned for the line R. muſt be followed, becauſe there will be danger of corroding the lower cartilaginous part of the coronary-bone, which in this caſe would become incurable.

Upon the line T. there is danger only of the cartilage 2. figure 3. of which I ſhall make ſome mention; if the nail paſſes into the frog B. figure 1. ſo as not to reach the tendon, nothing comes of it, even though it penetrates through to the paſtern. I have made horſes walk in this caſe, without confining them to the ſtables; but if it has touched the tendon, we muſt proceed in the method obſerved before. If the nail has touched between the line A. and the line R. and that it has penetrated to 4 plate 3 figure 3. it may have pricked an artery; in which caſe a proper pledget muſt be applied in order to compreſs the part and ſtop the blood.

For all theſe operations the balſam of fioraventi or ſpirit of turpentine muſt be uſed, and the dreſſings prepared as we ſhall mention them for drawing the ſole; but care muſt be taken when it is to be drawn, that the horny ſole be not too ſtrong, and if it be ſo, to pare it well that it become more flexible; otherwiſe, in bearing with the ſpatula upon the edge of the

hoof, we ſhould run the riſque of forcing and ſeparating it from the enchannelled fleſh, which would produce a dangerous inflammation, of which I have ſeen ſome examples. You muſt obſerve not to raiſe the fleſhy ſole with the horny ſole, nor to ſmear it over, as has been done, for it prolongs the cure; but every able practitioner knows how to avoid theſe kinds of dangers. When the cartilage muſt be cut away figure 7 and 8 plate II. if it be ſpoiled, part of the wall or hoof which covers it muſt alſo be taken off, as alſo the enchannelled fleſh repreſented at figure 7. and then the whole cartilage without reſerve; for if any part be left, although ſound, it ſoon becomes morbid, and notwithſtanding all our endeavours, we ſhould be obliged to come to a ſecond operation. The ligament which joins the bone of the foot to the coronary, and the capſula that contains the ſynovia of the joint muſt be carefully avoided, for touching theſe parts would render the diſorder incurable, as if the lower part of the coronary-bone was injured figure 1. Plate III.

In order to remedy and aſſiſt this amputation the ſole muſt be drawn, if there be any matter under it, on the diſeaſed ſide; but if not, it may be let alone; for the firſt and ſecond dreſſings good firm doſſils muſt be made, ſome little ſome big; the ſmall ones for the bottom of the wound, the larger ones for the outer

outer part gradually enlarged, which muſt be dipped in oil of turpentine ; afterwards the doſſils muſt be armed with common-turpentine, and a good ample bandage put on to compreſs them, ſo as to prevent the fleſh from riſing above the hoof. As for the future dreſſings they need not be ſo cloſely confined ; in this caſe all ſoftening remedies are good, and the whole difficulty of this amputation lies in the cutting, and the management of the dreſſings.

I have obſerved that although the operations made upon the fore feet, be never ſo well performed, eſpecially if the hoof be ſtrong, and however well cured, the horſe will ſometimes continue lame; which never is the caſe with the hind feet; this is a fact which perhaps we may in ſome meaſure account for.

If what is marked above be not punctually followed, and the cartilage ſhould be taken off piece-meal, either by cauſtics, the actual cautery, or cutting, we riſque keeping the horſe a long time upon his litter ; which retains the matter, ſpoils the capſula and ligament, and often deſtroys the animal.

The diſſection of the feet of two horſes has taught me an exception to this extirpation of the cartilage abovementioned : It happens ſometimes by an extraordinary conformation, that the horſe has little or no cartilage upon the apophyſis of the foot-bone, and that it is a

true elongation of the ſame bone, which by its conſiſtence or hardneſs very well reſembles the form at the coronet of the foot. He that is acquainted with his ſubject will in this caſe diſtinguiſh the want of the cartilage, in preſſing the coronet, by the moveable reſiſtance of the bone; in ſuch circumſtances it is to be ſuppoſed that the quarter of the hoof muſt not be cut away, but a ſimple opening only muſt be made on the upper part of the apophyſis in order to wait the exfoliation of the carious bone. If it happens that, contrary to nature, this bone is edged by a thin cartilage, the ſaid part or quarter muſt no more be taken off than in the caſe above, for the corroded part will ſeparate by being treated in the above manner, and will come out at the opening made above.

EXTRACT

# EXTRACT
OF THE
# REGISTERS
OF THE
# ACADEMY of SCIENCES.

*January* 20, 1750.

WE have, by order of the Academy, examined a manuſcript of the Sieur la Foſſe, farrier of the king's ſtables. The author ſets forth, that having had frequent opportunities of dreſſing lame-horſes, and not finding the cauſe of their lameneſs in either the upper or middle parts of their limbs, he looked for it in the feet; and that a ſmall tumor which he obſerved, pointed out the ſeat of the diſorder; the diſſection further demonſtrated that the coronary-bone was fractured.

After this firſt obſervation the ſaid Sieur la Foſſe made ſeveral others of the ſame kind; and what is ſingular, is, that he aſſerts this fracture is made without any great effort of the horſe: and that he ſaw one put to a voiture, fracture the coronary-bone at the inſtant he was ready to ſet

off; thoſe alſo who have carried their horſes, affected in the ſame manner, to him, have aſſured him that the leaſt falſe ſtep has occaſioned it. The Sieur la Foſſe remarks another ſingularity, which is, that the coronary-bone is generally divided in three pieces nearly equal. Perhaps the reaſon of this may be drawn from the conſideration of the manner in which the coronary-bone is joined to the paſtern and foot-bones, by their ſtrong ligaments, which being three in number, each ſeems to have retained its part of the bone, and favoured its diviſion into three parts.

The diſcovery of this diſeaſe, which has never been treated of before by the writers of anatomy, medicine, or ſurgery, does not lead us to the manner of curing it, becauſe it is abſolutely incurable; on the contrary it ſerves to convince us, that if it was even poſſible to keep the bones together ſo as to favour their uniting, the fracture being in a joint, there would ſtill remain an anchyloſis or callous, which would render the horſe unfit for ſervice.

But the Sieur la Foſſe's obſervation is notwithſtanding of very great uſe, for it ſhews us the impoſſibility of curing a diſeaſe that was always thought curable from their ignorance of the matter, and conſequently he has found the means of ſparing to the owners of horſes, taken lame, the expences of a cure attempted in vain. He further knows how to diſtinguiſh when the coronary-bone is fractured or is not; although

although there may be no viſible appearance of the diſeaſe, and the effort wherein the coronary-bone reſiſts the fracture, indicates the manner of cure, when the bone is not broken, and alſo that the horſe ought to feel in this effort very great pain, when he ſtrains the fracture. We cannot avoid giving the Sieur la Foſſe due praiſe for his zeal and capacity in his endeavours to perfect and extend the knowledge of his profeſſion. We think this memoir merits being printed among the collection of the papers communicated to the academy.

Signed, MORAND, FERREIN.

*I certify the preſent extract to be conformable to its original and to the judgment of the Academy. Given at Paris Feb.* 1, 1750. *Signed* GRANDJEAN DE FOUCHY, *perpetual ſecretary to the Royal Academy of Sciences.*

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## EXTRACT of the REGISTERS OF THE ROYAL ACADEMY of SCIENCES,

*Of* 23 *Auguſt*, 1752.

MR. Morand, who was appointed by the Academy to examine the Hyppiatric * obſervations of M. la Foſſe, farrier to the king's

* Relating to Horſes.

ſtables, upon ſix diſeaſes of a horſe's foot, which appear to have never been known to authors, having made his report, the Academy judged that theſe diſeaſes were clearly deſcribed, that the obſervations made in conſequence were very judicious, and that the whole is rendered ſtill the more uſeful as it is accompanied with anatomical plates, wherein the bones and adjacent parts are better repreſented than any where elſe; this memoir is judged worthy to be printed among the pieces communicated by foreigners.

Paris Auguſt 31, 1752; ſigned GRANDJEAN DE FOUCHY, perpetual ſecretary of the Royal Academy of Sciences.

A TRAIN









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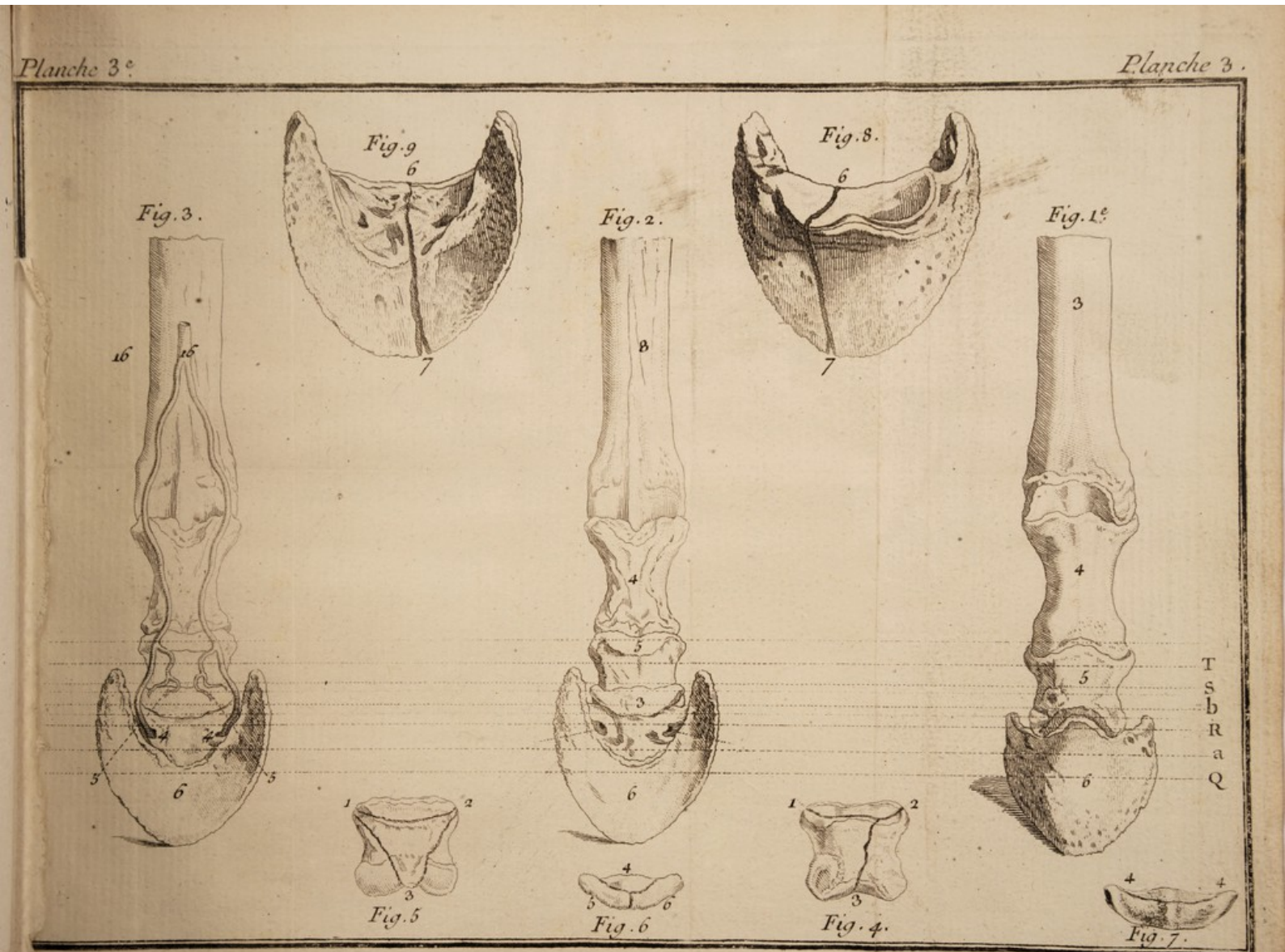
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A

# TRAIN

OF NEW

## Experiments *and* Obſervations

UPON THE

# GLANDERS.

THE Glanders, properly ſo called, is an inflammatory diſeaſe which has its ſeat in the pituitary membrane, as I have explained it in my treatiſe of 1749, to which I refer the reader.

In order to be well acquainted with this diſeaſe, it will be neceſſary to diſtinguiſh in it three different periods: to wit, its beginning, its middle and its end. In each of theſe times it has a different name, in the firſt it is called a menacing

menacing or impending glanders; in the ſecond a confirmed glanders; and in the third an inveterate glanders. Three ſymptoms muſt alſo be known in this diſeaſe.

1. The inflammation in the pituitary membrane.

2. A ſwelling of the glands under the nether jaw.

3. The running of the glanders properly ſo called.

Theſe three ſymptoms are mutually cauſed by one another: the firſt produces the ſecond; the ſecond produces the ulcers, whence proceeds a running of the noſtril on the diſeaſed ſide.

In my treatiſe of 1749, I called a gland, which the inflammation of the pituitary membrane cauſes to ſwell, the *ſublingual Gland*; but it is only a lymphatic gland, the canals of which, after ſending out ſeveral ramifications, go to the maxillary gland, and then to another lymphatic gland placed under the parotid, from which it divides two large branches which accompany the trachea in its whole length, on each ſide; then again paſſes between the two bronchia, about two inches and half from the aorta, into two lymphatic glands; there they part in order to croſs them, and at laſt terminate n the *Vena cava*.

As to the ſublingual glands they are ſituated at the ſymphyſis of the chin.

B. Although

B. Although I was certain the inflammation of the pituitary gland was the firſt ſymptom of the glanders in horſes, yet in order to aſcertain it to myſelf I made the two following experiments.

I injected one noſtril of a ſound horſe with a certain liquor. The pituitary membrane became inflamed: this inflammation cauſed a lymphatic gland under the jaws on the ſame ſide, to ſwell as I had foreſeen; the inflammation of this membrane produced ulcers, whence the ſnot or matter of the glanders run through the ſame noſtril.

I again injected both noſtrils of a ſound horſe with the ſame liquor; the pituitary membrane inflamed, made the lymphatic gland on both ſides ſwell; and the ſnot run from both noſtrils in a little time; which confirmed me in the opinion that the inflammation was the firſt ſymptom of the glanders properly ſo called: that the glands ſwelled under the jaws was the ſecond, and the running the third.

OBSER-

# OBSERVATIONS

UPON

## Glander'd HORSES.

AFTER having trepanned an old horſe in 1749, and dreſſed him, they put him to work; and eighteen months after he was knocked on the head. I ſaw by diſſecting his head that the pituitary membrane was grown 6 or 7 lines thick, and oſſified to the neighbouring bones; it had acquired this thickneſs and conſiſtence by the ſtagnation of the lymphatic juice, cauſed by the inflammation and the ſpreading of the ulcers.

2. A horſe received a kick of another horſe, which broke part of the bone of the maxillary ſinus; having examined the wound, I found it was not mortal; but as the ſinus was injured, and the pituitary membrane inflamed, I did not doubt but the glanders would come on, and it was not long before the effect confirmed my ſuſpicion. The glands of the jaws were ſwelled on the morbid ſide, ulcers were formed on the pituitary membrane, matter flow-

ed

ed thro' the noſtril, and this diſcharge is the glanders properly ſo called. I made frequent injections into the noſtril, the diſcharge ceaſed in four months, the ſwelling of the gland was diſcuſſed, the injection cleanſed the lower part of the maxillary ſinus's, and that of the cornets, which hinder the matter's lying in them, and a thorough cure was made. This horſe belonged to Madam Fondu, a miſtreſs-carrier, in the Faux-bourg Saint Honoré.

All the authors that have wrote upon the diſeaſes of horſes ſeem to have copied one another, to maintain that the glanders was a diſcharge accompanied with a very offenſive ſmell; I never found that the glanders had any ill-ſmell of itſelf, but it may when the matter is confined in the maxillary ſinuſes, or that the aliment has inſinuated itſelf, as I have obſerved it, by the chinks of old broken jaw-teeth and infected the parts.

I have again found horſes whoſe glanders have ſtunk very much, but then they have had the ſtrangles with decay or farcy.

I have alſo ſeen ſome with whom the running proeeeded from a putrefaction of the lungs, together with the glanders; and others with whom the ſmell proceeded only from the malignance of the ſtrangles which they diſcharged.

4. I ſaw a horſe belonging to a poor man who worked him in an inveterate glanders for ſix years; and at laſt he was knocked on the head

head on account only of his great age. I opened this horſe to ſee the ſtate of the viſcera and found them all in a ſound ſtate, as well as the other internal parts, except the pituitary membrane which was thickened by ulcers of four or five lines broad, as well in the frontal as maxillary ſinuſes.

It is known that a horſe with the glanders properly ſo called can communicate the diſeaſe to other horſes; but this diſeaſe will alſo be catched from any cauſe capable of inflaming the pituitary membrane. For example, a horſe will often become glandered, if after ſwimming him he is left in the cold, or his noſe expoſed to the wind; for in two hours the glands under the jaws will be ſwelled, and the noſtrils be filled with a viſcid mucus.

I have had horſes brought to me who had catched cold thus in the pituitary membrane, and could perceive by their glands they were threatened with a confirmed glanders; I bled and cooled them, and cured them in a very little time.

And I have ſince obſerved horſes thus affected in the glands from the ſame cauſe, for which I propoſed the ſame treatment by way of prevention, became abſolutely glandered for want of that care.

In order to prevent theſe diſeaſes, when horſes are hot, they muſt not be let to grow cool without action, and therefore they ſhould be walked gently after running, to hinder their ſuddenly

denly taking cold. If they cannot be walked about, their noſes muſt be covered to hinder the firſt ſudden ingreſs of the cold air; their tails ſhould alſo be turned towards the wind, to prevent its affecting the pituitary membrane, and alſo care ſhould be taken that the delicate texture of this membrane, ſo expoſed to the immediate contact of the air and wind, may not have too ſudden a change from heat to cold.

But if a horſe has been affected in the glands for a conſiderable time, and has had a diſcharge from the obſtructed ſide without coughing, the glanders is confirmed even tho' he has a good appetite, and every other ſign of health. Emollient decoctions muſt be thrown up the noſtrils, being careful to puſh them to the frontal ſinuſes, and to repeat them three times a day for a week; if the running continues, it will be very proper to uſe fumigations, which would come more into practice, if their good effects were better known.

To fumigate is to make a horſe receive the vapour or ſmoke of certain medicines thrown into the fire or upon a red-hot iron. And this fumigation produces different effects, according to the different compoſition made uſe of.

For this purpoſe I thought of a kind of box with a tube fixed to it, which may be put into the noſtril of the horſe; this box has the advantage of conveying the vapour as intended,

which

which by the common method is moſtly waſted. The mechaniſm of this box is too ſimple to need a particular explanation; the bare deſcription of it is eaſily underſtood. After proper injections and fumigations, the horſe muſt be walked about without heating him, taking care to give him nothing but bran, and keep him warm in the ſtable. There is no anſwering for the cure, for that depends upon the ſtubbornneſs of the diſeaſe. But if the ſymptoms be purſued with attention, and we undertake it in time, the glanders may be cured.

If the gland is of any ſtanding, and the horſe diſcharges a bloody matter, and another gland appears to be affected on the other ſide the jaw, with difficulty of reſpiration, we muſt ſuppoſe it proceeds from the thickening of the membrane: when the glanders is inveterate the horſe muſt be trepanned, as I have mentioned it in my treatiſe of 1749; for it is the only method to prevent the ſtagnation of the corroſive humour.

Suppoſe two horſes, one glandered the other ſound, at the ſame manger, if they are tied up ſo as that the ſound horſe may not receive the breath of the diſtempered one, he certainly will not be infected.

After having explained what is a confirmed glanders, I ſhall treat of ſix other kinds of diſcharges by the noſtrils, of which four are incurable.

The

The firſt of theſe four proceeds from the lungs when they are affected, and therefore may be called the pulmonary glanders: the ſecond is called the waſting glanders; the third the glanders with malignant ſtrangles; and the fourth the farcy-glanders.

The pulmonary-glanders proceeds from one or more abſceſſes formed in the lobes of the lungs, the purulent matter of which gets into the bronchia, comes up the Trachea, paſſes through the naſal cavities, and is diſcharged by the noſtrils like a whitiſh liquor, ſometimes appearing in lumps or grumes. In this caſe the horſe runs at the noſe without having the glands affected; and therefore what he diſcharges cannot be accounted the true glanders. If the horſe be young, he may be relieved by making him work a little; pectorals muſt be adminiſtered, and he muſt be turned to graſs every year.

That humour which I call the waſting humour uſually ſeizes a horſe at the end of diſeaſes cauſed by too hard labour, which have been thought cured; a defluxion is made upon the lungs which produces a whitiſh humour, ſometimes tinged with yellow, which is diſcharged by the noſtrils, he eats and drinks pretty well, but notwithſtanding he runs out of fleſh.

The ſtrangle-glanders produces humours which nature is not able to diſcharge, and they

fall upon the lungs, where they form abſceſſes; theſe humours take their courſe alſo by the noſtrils, and ſometimes in coughing by the mouth; and the horſe gradually periſhes.

The farcy-glanders is ſo acrimonious a humour, that it ſeizes, at the ſame time, both the lungs and pituitary membrane; making more havock than the three other kinds already deſcribed.

The three firſt kinds, as I have deſcribed them, are not catching, except when the humour has acquired an acrimony by length of time, which paſſing by the noſtrils is detained in the maxillary ſinuſes, inflames the pituitary membrane, and ſwells the glands; a ſure prognoſtic of the true glanders.

But the fourth, which is the farcy kind of glanders, being more of an eroding nature, is apt to ulcerate both the lungs and pituitary membrane, and is conſequently infectious.

It remains to mention the two other kinds, the one which proceeds from a horſe's being over-heated; he coughs, and firſt diſcharges a limpid fluid, and after, a whitiſh matter; becauſe the cold air has laid hold on the pituitary membrane, has condenſed the lymph in the ſmall veſſels, which cauſes an inflammation, and ſwells the throat, larynx and lymphatic glands.

The horſe ſometimes as he coughs diſcharges the matter from his mouth, and when the

cough

cough ceaſes, and that he ſtill continues to diſcharge it for fifteen or twenty days, that the gland under the jawhardens rather than diminiſhes; this running is ſuſpicious and ſometimes degenerates into a true glanders; and therefore, as ſoon as a horſe is found to be overheated, he muſt be blooded, kept to white drink, kept warm, and not worked too much; but if he continues ill for fifteen or twenty days, he muſt be fumigated or injected, as we have mentioned it before.

The ſixth kind of diſcharge is the ſtrangles, which every horſe ought for his health's ſake to diſcharge. This is a humour which circulates in the maſs of blood to a certain age, which nature endeavours to throw off. It diſcharges itſelf in different manners, and that which is leaſt fatiguing to the horſe, is when it forms an abſceſs between the jaws without taking its courſe by the noſe: It ſometimes is thrown upon different parts, where it produces different effects according to the diſpoſition of theſe parts. For example when it falls upon the throat, all the part is ſwelled, the arteries are compreſſed, the blood is impeded, an inflammation ſucceeds, and an abſceſs is formed.

In order to remedy this evil, the horſe is to be kept warm, and as ſoon as the ſwelling is perceived, it muſt be dreſſed with a proper medicine to encourage the ſuppuration of the abſceſs, which ſometimes breaks of itſelf; but it is more eligible not to wait for this, but to open it in

order to diſcharge the malignant matter with the pus, and the horſe does well. This is what I call a mild kind of ſtrangles.

The ſtrangles which diſcharges by the noſtrils produces alſo different effects, according to the parts affected.

At firſt the horſe begins to be dull and heavy, carrying his head lower than uſual, and ſometimes falling off his ſtomach; he has ſometimes alſo a little cough, and the jaws ſwell a little, by the inflammation.

At different times ſeveral ſmall glands ſeem obſtructed, and in a ſmall time after, a diſcharge by the noſtrils follows of a thick kind of glanders more or leſs.

It often happens too that the noſtrils run, without any ſwelling or obſtruction about the jaws; this firſt ſpecies of ſtrangles goes off frequently by nature, it is however neceſſary to give her ſome aſſiſtance; wherefore the horſe ought to be kept warm, and ſome cordial medicine ſhould be given him in order to promote the expulſion of the humour.

When the humour falls upon the lymphatic parts of the larynx, it cauſes the ſame inflammation of all the parts of the pituitary membrane, and ſo ſtraitens the reſpiration of the horſe, that his breath can ſcarce move the flame of a candle held to his noſe; and as this animal reſpires only through the noſtrils, he is forced to rattle in the throat. To aſſiſt his breath, a

piece

piece of wood ought to be put into his mouth, in order to keep it conſtantly open, and favour the diſcharge of the flegm cauſed by the inflammation of the parotid and maxillary glands; afterwards the humour of the ſtrangles is thrown off by the noſtrils, which ſometimes has an ill ſmell.

And as I have remarked that even this way is not always ſufficient for the diſcharge of the quantity of humours that the inflammation cauſes, one may expect that the humours will neceſſarily be thrown under the jaws, or on one ſide; this abſceſs muſt be opened to aſſiſt that diſcharge already begun by the noſtrils, and be he never ſo ill he will by this means be cured; but if ſuch a depoſite of the humours does not form an abſceſs, it is to be feared it will fall upon the viſcera, and the caſe is full of danger.

In order to relieve him in this caſe, cordials muſt be given him to promote perſpiration; but when all the paſſages are obſtructed, as well for his drink as for reſpiration, a quantity of oats muſt be boiled in vinegar, put into a bag, and applied to the region of the kidnies, covering him up warm, and the perſpiration, which this remedy produces, will promote the expulſion of the humours.

What I have juſt explained plainly ſhews that this ſtrangles although mild enough in itſelf, may become very dangerous with reſpect to

the functions of the part affected, eſpecially when the inflammation ſeizes the œſophagus and about the larynx; for it often happens in this caſe, that the horſe diſcharges his meat through his noſtrils when he cannot ſwallow it.

Theſe kinds of ſtrangles are the moſt laudable of all; I call them laudable becauſe it is neceſſary for the health of a horſe that he has and diſcharges them; which if he does not, the humours which cauſe the ſtrangles are apt ſooner or later to fall upon one or more parts of the body, where it may form tumors or abſceſſes, and that even upon the viſcera, which we then call the baſtard ſtrangles, or malignant ſtrangles, as I have called them before.

It ſometimes happens, though but ſeldom, that theſe two kinds of ſtrangles ſeize a horſe at the ſame time; that is, that he diſcharges the matter both from an abſceſs, and by the noſtrils. I do not mention another, ſeventh, kind of glanders, which horſes throw off by the noſe, and ſometimes even at the mouth when they cough, like the whites of eggs.

I have opened horſes in theſe caſes, and found that this kind of glanders was ſtopped, and fell upon the upper part of the aſpera arteria, from whence it ſeparates and deſcends without any hindrance by the noſtrils.

By opening horſes who diſcharged a kind of glandered matter both by the noſe and mouth,

cauſed

cauſed by an inflammation of the throat, I found that it was cauſed by a defluxion upon the trachea; which appeared to be the effect of a quinzy; this diſorder laſts two or three days and ſometimes longer; the horſe can ſcarce eat or drink, and it is known by a ſmall ſwelling under the throat, which is ſenſible to the touch.

A horſe diſcharged a great quantity of white thick matter by the noſe for eighteen months; and when he was at reſt in the ſtable the runing ſtopped; but he was heard to rattle, which alſo ceaſed when they made him work; however although he was not affected in the glands they knocked him on the head. I opened him and found the pituitary membrane perfectly ſound, the ſinus and all the internal parts of the noſe well, the viſcera in the abdomen ſound; but upon opening the thorax, I found a conſiderable abſceſs, where the trachea divides to ſink into the ſubſtance of the lungs.

By this obſervation it is plain a horſe may live and work a long while with an abſceſs in the thorax; and yet the pituitary membranes may remain uninjured by the matter paſſing by the trachea, croſs the naſal cavities; and that we muſt diſtinguiſh this from a true glanders, by the ratling, tumefied glands, and the vaſt quantity of matter that runs off.

I have ſaid before that it was neceſſary a horſe ſhould diſcharge the ſtrangles at a certain

time, for the good of his health ; in this caſe it is cuſtomary to ſeparate the ſound horſes from the diſeaſed ones, becauſe it is infectious.

I am not of the opinion of thoſe who ſeparate horſes with the ſtrangles from ſuch as have not yet had it, in the fine ſeaſon of the year ; on the contrary, I turn them together in order to make them catch it of one another, to avoid the danger they would riſque in not throwing off the matter of that diſeaſe.

AN

# ANATOMICAL TABLE

OF A

# HORSE's HEAD.

## Plate I.

BB. The boundaries of the cerebellum which is very ſmall in a horſe, as is alſo the brain D.

CC. The beginning of the upper part of the frontal ſinus with the depreſſions or ſinkings which terminate the lines.

D, and E. Shew a body ſhaped like a channelled pear, which is the ethmoidal-bone, thro' which the nerves paſs which go to the pituitary membrane.

E. The beginning of the maxillary ſinus.

M. The ſpace between theſe two lines repreſents the depth of the ſinus.

Note, the cells and windings are not marked here to avoid confuſion.

F. This white oblique line is a bony incloſure

cloſure or partition which ſeparates the ſinus into two cavities.

F. G. Two other incloſures; ſometimes there is but one to be found in horſes.

N. The beginning of the cornets or horns.

O. Their duplication.

P. Their middle part.

Q. Their lower extremities.

M. The bony canal which incloſes and guards the upper maxillary nerve.

AA. The partition or ſeptum which divides the noſe by a line all along to form the two noſtrils.

# THE REPORT of the COMMITTEE OF THE ROYAL ACADEMY of SCIENCES.

*Extract of the Regiſters of this Academy of the 8th of January, 1752.*

BY order of the Royal Academy of Sciences we have examined a new memoir of the Sieur la Foſſe upon the glanders in horſes.

In the firſt memoir he delivered upon this ſubject, he has eſtabliſhed by obſervations, confirmed by the committee of the academy, that the pituitary membrane is the ſeat of this diſeaſe; which in conſequence of an inflammation, ulcerates and makes an habitual diſcharge of a corroſive pus which renders the bones it adheres to carious; and in the memoir which is the object of this report, he improves and brings to perfection, his diſcovery. He diſtinguiſhes ſeven kinds of diſcharges which may come from the noſtrils of horſes, lays down the ſymptoms and

and cauſes of each, and ſhews the evil of their being all confounded under one denomination: he alſo makes it evident that the true glanders has its characteriſtics, which eſſentially diſtinguiſh it frome very other diſeaſe that has been called by the ſame name.

And in order to prove that a great inflammation of the pituitary membrane is always the cauſe of the glanders, he has attempted to bring on an inflammation upon the ſame membrane by a corroſive injection; and when the injection was only made into one ſide, the maxillary lymphatic glands were ſwelled on the ſame ſide, and that noſtril only produced the diſcharge.

But on the other hand, when both noſtrils were injected, theſe ſymptoms appeared on both ſides.

The author produced, with his memoir, a ſection of ſome of the bones of the head, comprehending a portion of the maxillary and frontal bones: theſe pieces had on their inner ſurface very remarkable veſtiges of a caries, and are in many places become more thick than in their natural ſtate; which ſeems to have been produced by the continuance of a ſuperabundance of vitiated mucous matter, which ſoftened and injured the texture of theſe bones.

The firſt memoir preſented by the Sieur la Foſſe was confined to a bare deſcription of the diſeaſe, and only a propoſal of a method of

cure by way of project; but in this, he certifies that he has cured ſeveral glandered horſes by means of his injections and fumigations thrown into the noſtrils.

Although he has not yet found out ſuch injections as will ſucceed in the greater number of caſes that come before him, there is room to hope that end will yet be attained; nor can we withhold our approbation of the enquiries he is inceſſantly making, in order to bring the matter to perfection.

Signed MORAND and BOUVARD.

*I do certify the preſent extract to be conformable to his original memoir, and to the judgment of the academy. Paris January* 12, 1752. *Signed* GRANDJEAN DE FOUCHY, *perpetual ſecretary to the Royal Academy of Sciences.*

# REMARKS.

DR. Brachen an Engliſh phyſician has wrote a treatiſe on the diſeaſes of horſes; and has alſo tranſlated my treatiſe upon the glanders into Engliſh. The following is an extract of what he ſays about it.

"I agree with Monſ. La Foſſe that the ſeat "of the glanders is in the pituitary membrane, "and not at all in the viſcera; that drenches are "of no manner of uſe in this caſe; and that "injectious thrown into the ſinuſes is a judi-"cious practice."

The

The Twelfth Chapter

# Of Mr. BARTLETT's Book

UPON THE

# DISEASES OF HORSES,

*Being this author's doctrine of the Glanders, which is tranſlated by the Sieur la Foſſe into French in this work.*

THE cauſe and ſeat of the glanders has till lately been ſo imperfectly handled, and ſo little underſtood by the writers on this diſtemper, that it is no wonder it ſhould be ranked among the incurables: but a new light having been thrown on this whole affair by the ſtudy of M. la Foſſe, the King of France's Farrier, who has been at the pains to trace out, and diſcover by diſſections, the ſource and cauſe of this diſorder; we hope the method he has propoſed, with ſome further experiments and improvements, will ſoon bring to a certainty of cure (in moſt caſes at leaſt) a diſtemper ſo dangerous to our horſes, and that hitherto has eluded the force of art.

Before

Before we make mention of this work, which has the approbation of the Royal Academy of Sciences, it will not be unacceptable to our readers, we apprehend, to have a more particular account of the ſymptoms of this diſorder than M. la Foſſe has laid down, that we may the better judge of the merit of our author and his diſcoveries.

The matter then diſcharged from the noſtrils of a glander'd horſe is either white, yellow, or greeniſh, ſometimes ſtreaked or tinged with blood; when the diſeaſe is of long ſtanding, the matter turns blackiſh, and becomes very fetid, and is always attended with a ſwelling of the kernels or glands under the jaws; in every other reſpect the horſe is generally healthy and ſound till the diſtemper has been of ſome continuance.

From theſe ſymptoms and ſome obſervations made by Bracken and Gibſon, it is plain they were not abſolute ſtrangers to the ſeat of this diſorder, though they neglected puſhing their enquiries to the fountain-head, and conſequently were at a loſs to know how to apply the remedy to the parts affected.

But our author after examining by diſſection the carcaſes of glander'd horſes, and making a ſtrict ſcrutiny into the ſtate of the viſcera, aſſiſted for that purpoſe by ingenious and expert anatomiſts for ten years together, affirms this diſeaſe to be altogether local; and that the true ſeat of it is

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in the pituitary membrane, which lines the partition along the inſide of the noſe, the maxillary ſinuſes or cavities of the cheek-bones on each ſide the noſe, and the frontal ſinuſes or cavities above the orbits of the eyes; that the viſcera, as liver, lungs, &c. of glandered horſes are in general exceeding ſound; and conſequently that the ſeat of this diſorder is not in thoſe parts, as has been aſſerted by moſt authors; nor indeed is it probable it ſhould; for how could ſuch horſes preſerve their appetite, their good appearance, ſleek and ſhining coats, in a word all the ſigns of health for many years together (which many glandered horſes are known to enjoy) with ſuch diſtempered bowels.

But on nicely examining the heads of ſuch horſes he found the cavities abovementioned, more or leſs, filled with a viſcous ſlimey matter, the membrane which lines both them and the noſtrils inflamed, thickened, and corroded with ſordid ulcers, which, in ſome caſes, had eat into the bones. Theſe ſinuſes or cavities will be better underſtood by referring to the annexed plate.

He obſerves that when glandered horſes diſcharged matter from both noſtrils, both ſides of the membranes and cavities were affected; but when they run at one noſtril only, that ſide only was found diſtempered.

It is a curious remark of our author, that the ſublingual glands, or the kernels ſituated un-

der the jaw-bone, which are always ſwelled in this diſtemper, do not diſcharge their lymph into the mouth, as in man, but into the noſtril; and that he conſtantly found their obſtruction agreed with the diſcharge; if one gland only was affected, then the horſe diſcharged from one noſtril only, but if both were, then the diſcharge was from both.

He ſometimes, though rarely, found the bony partition of the noſe carious and rotten; but that the ſpongy bones about this part muſt ſuffer from the acrimony of matter long pent up, is not at all to be doubted, though the more ſolid ones may eſcape.

The ſeat of this diſorder thus diſcovered, our author with great ingenuity has paved the way for the cure, by trepanning theſe cavities, and taking out a piece of bone, by which means the parts affected may be waſhed, with a proper injection, and, in fine, the ulcers deterged, healed, and dried up.

This operation he has performed on three horſes, one of whom diſcharged from one noſtril only, and the third from both. The two firſt he trepanned on that ſide of the head which was affected; and to the other he performed it on both: and found that the wound and perforation filled up with good fleſh in twenty-ſix days, and that the horſes ſuffered no inconvenience from the operation. Though after this experiment they were knocked on the head.

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The directions and orders of the civil government of France, which hindered people from keeping glandered horſes long, prevented M. la Foſſe repeating his attempts, and puſhing his experiments further; but it is to be hoped that ſo uſeful a project will be purſued to its utmoſt extent, as it ſeems ſo promiſing in the execution, and is ſo important in its conſequences: to which end we ſhall beg leave to animadvert upon what has been ſaid, and offer our opinion both in relation to the diſeaſe, the operation, and the manner of conducting the cure.

The original ſource and cauſe then of this diſorder ſeems to be an inflammation of the glands and membrane that lines the noſtrils and theſe cavities; which if not diſperſed in time, will form matter and ulcerate and erode the bones, for want of a free diſcharge to unload the cavities; and of proper applications to cleanſe and deterge the ulcers: violent colds or a feveriſh tranſlation ſettling here, may alſo occaſion the ſame complaint, and are commonly the general cauſes.

There is a diſorder in men called *Ozæna* that has great ſimilitude to this in horſes, and ariſes often from an inflammation in the maxillary ſinuſes, or cavity of the cheek-bones; from whence enſues a collection of matter: which when the cavity is full, or the head properly inclined, runs over into the noſe, and would conſtantly diſcharge thence like a glandered

horſe was the head continued in the ſame poſition. The ſurgical cure is the taking out one or more teeth from the upper-jaw, and perforating the cavity with a proper inſtrument in order to make a depending orifice for the matter to flow through; and to make way for ſyringing the parts affected with proper injections, which in this caſe are thrown thro' the cavity into the noſe.

The ſimilarity of theſe two caſes, with the method of cure, and the ſucceſs attending the ſurgical treatment, (which was firſt invented by our countrymen Drake and Cooper) undoubtedly gave the firſt hint for trepanning and ſyringing theſe cavities in horſes: and it is moſt probable, that when the operation is attempted in time, before the bones become rotten, it will be attended with equal ſucceſs; but after opening the cavities, ſhould it by probing be diſcovered that the bones are in that ſtate, the beſt way then would be to diſpatch the horſe, to prevent unneceſſary trouble and expence.

The parts fixed on for applying the trepan are pointed out in the plate, and the manner of ſawing out the bone will eaſily be underſtood by a view of the inſtrument, and the explanation annexed.

The perforations being made, our next buſineſs is to prevent their filling up too faſt: as it may be neceſſary to keep them open for ſome weeks, before a cure can be effected; for which purpoſe,

purpoſe, after the uſe of the injection, let the upper one be filled up with a piece of cork waxed over and adapted exactly to its ſize; the lower one may be filled up with a hollow leaden tent, and both kept on with a proper bandage.

If this method ſhould not prevent the granulations or ſhoots of fleſh, from filling up ſo faſt, as to choak up the perforation, and by that means hinder the injections paſſing freely; they muſt be ſuppreſſed by rubbing with cauſtic medicines, or touching with the actual cautery; as may alſo the bony edges; which by obliging them to exfoliate or ſcale off, will retard the healing.

The injections firſt made uſe of ſhould be of a deterſive nature; as a decoction of birthwort, gentian, and centaury; to a quart of which, if two ounces of ægyptiacum, and tincture of myrrh are added, it may be as proper as any; and when the diſcharge is obſerved to abate, and the colour alter to a thick white matter, the injection may be changed for barley water, honey of roſes and tincture of myrrh; and finally to dry up the humidities, and recover the tone of the relaxed glands, Bates's alum-water, or a ſolution of colcothar, vitriol, lapis medicamentoſus, or the like, in lime-water will moſt probably complet the cure.

But whoever is at all acquainted with practical ſurgery, well knows that without the aſſiſtance of internals, eſpecially in glandular diſorders, the cure is not ſo eaſily effected, nor rendered complete and laſting; I therefore adviſe a ſtrong decoction of guaiacum chips to be given every day to a quart or three pints throughout the cure, and when the matter leſſens, to purge at proper intervals and put a rowel into the horſe's cheſt in order to divert the fluids from their old channel.

If theſe ſhould not ſucceed, mercurials may be given with the phyſic; and the alterative powders with lime-water may be taken for a time, if the horſe is worth the expence. Vide chap. on alteratives.

My treatiſe upon the glanders has been tranſlated into Engliſh by Dr. Bracken, author himſelf of ſeveral treatiſes upon the diſeaſes of horſes, and was alſo approved of by Mr. Bartlet an Engliſh ſurgeon. My diſcovery made upon this diſeaſe and my method of cure have been approved of in England. But I ought to declare that I have lead Mr. Bourgelat, author of a book entitled *Elemens d'Hyppiatrique* into an error, where I ſpeak of the ſublingual glands, upon which he has expatiated with a credulity that does me honour, for which he has my thanks; but unhappily it was a miſtake in me, for I acknowledged it ſince, and retracted

tracted that opinion that horſes have no glands but under the ſymphyſis of the chin. And I freely own that I called them ſublingual glands very improperly; they are lymphatic glands that the inflammation of the pituitary membrane cauſes to ſwell, the canals of which after having thrown off ſeveral ramifications paſs under the maxillary gland and fixes under the parotid; from whence two large tubes iſſue which accompany the trachea on each ſide for its whole length, and ends in the vena cava.

Mr. Bourgelat, a good anatomiſt, ought to have known this error, and to conclude from thence, that he ſhould not be in ſo much haſte to criticiſe as to approve.

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# MEMOIR

PRESENTED TO THE

## ROYAL ACADEMY OF SCIENCES

November 18, 1750.

*Upon a moſt ſpeedy and infallible remedy to ſtop blood in large divided arteries without a ligature.*

IN order to ſtop the blood in accidental hæmorrhages of the ſmall veſſels, I had a notion to try what effect the duſt of a certain wild muſhroom, commonly called in France Veſſe-de-loup *, and botanically *Lycoperdon*, could have upon great divided arteries; in the caſe of accidents in bleeding, and in performing amputations of limbs; I propoſed therefore to make my experiments on horſes.

Having choſen proper ſubjects, I laid the temporal artery bare in one, and divided it tranſverſely half way; the blood ſtarted out

* In England puff-balls.

with

with great impetuoſity; I applied ſome of this duſt of the puff-ball, which I confined to the part, by only the palm of my hand, for about twelve or fifteen minutes; and the blood ſtopped.

I pricked, in the ſame manner, the artery in a horſe's leg; I dreſſed it with the ſame duſt, and the blood ſtopped in like manner.

I cut off the fore-leg of another horſe at its upper part, near the thorax, and applied the powder or duſt to the ſtump, without any other dreſſing than a bladder to keep it on, and the blood ſtopped; notwithſtanding the ſtruggles of the horſe to relieve himſelf, for he was thrown, in order to make the operation.

I afterwards cut off the tail of the ſame horſe at the place of its firſt joint; and the blood of the four arteries ſtopped like the other caſes by the ſame treatment.

I cauſed this horſe to be knocked on the head on the fourth day after, and diſſected the divided arteries; when I found that a membranous incloſure was formed, which was half tranſparent and exactly ſtopped their orifices, the center of each of which had a little grume of blood like a nipple.

It muſt be obſerved here that as I examined the ſtump of this horſe while he was yet alive, I ſaw with great pleaſure, the blood force againſt the ſaid incloſing membrane, which being upon the level with the fleſh, made it eaſy for

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me to obſerve very diſtinctly the extremity of the artery by its pulſation.

Having ſeparated the fleſh from the artery, I ſlit it up longitudinally, and found that the little grume of clear blood was of a firm conſiſtence, of a lively red, in form of a cone or ſugar-loaf, the baſis of which adhered to the little incloſing membrane which ſhut up the artery without; the point of which floated in the cavity of the veſſel; and I further found the coats grown thicker at their extremities.

At length, in order to try whether the ſuppuration of the wound would not open the orifices of the arteries again, which were juſt ſtopped up by the remedy, I let the firſt horſe live, which was the more vigorous of the two, until a perfect ſuppuration was eſtabliſhed, which proved that it did not, in the leaſt reſpect, hinder the cicatriſing of the arteries.

EXTRACT

# EXTRACT of the REGISTERS OF THE ROYAL ACADEMY of SCIENCES,

*December* 23, 1750.

THE Sieur la Foſſe, Farrier to the king's ſtables, in the laſt memoir he preſented to the academy, aſſerts, 1. That by applying the powder or duſt of the lycoperdon or puff-balls to very conſiderable divided arteries in horſes the blood was ſtopped in a few minutes; and the arteries cicatriſed by this means alone, without any ſucceeding hæmorrhage.

2. That about twenty hours after the application of this remedy, a membrane, or rather a pellicule, or thin ſkin, was obſerved to cover the extremity of the divided artery, with a ſmall grume which ſhut up the mouth of the ſame artery.

3. That the pulſation of the artery was very diſtinctly perceived in the place.

4. That this grume was ſhaped like a cone, the baſis of which ſtopped up the orifice of the divided veſſel, and the point was turned inward in the veſſel.

Theſe

Theſe are the facts which the academy ordered us to conſider and verify. In order to try the experiment we cauſed M. la Foſſe to cut off the tail of a mare as near the root as he could, the blood flew out of the four arteries with great force; he applied this puff-ball powder to the ſtump with a cap of a pig's bladder to keep it on; he took off this dreſſing in a quarter of an hour, and three of the arteries were ſtaunched, but the fourth continued to bleed very faſt; and by applying a pinch of the powder to the bleeding artery, which he kept to it only with his finger, the blood was alſo ſtopped in this veſſel in ſix minutes.

He cut off the leg of another horſe about ten inches above the knee; and as the arteries did not bleed, he handled them for half a quarter of an hour in order to force them, but to no purpoſe: however he applied the powder ſecured by a pledget and proper bandage; and there was not any bleeding for three days after, although the horſe had moved himſelf very much, and was often put to pain after the operation. The horſe was ordered to be killed, and having opened the principal artery of the ſtump longitudinally, we found a body of a conic figure about four fingers breadth above the extremity, the baſe of which adhered ſtrongly all round to the internal coat of the artery, its other extremity turned inward into the veſſel; when this conic body was macerated in water,

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it appeared very diſtinctly to be a kind of membranous ſack, like a funnel filled with blackiſh grumous blood: the internal convex ſurface of the ſack, ſhewed, in tufts, a great number of granulations like thoſe of a wound beginning to incarn; as to the reſt, all that interval of the artery comprehended within the place where the ſack adhered to the divided extremity was filled with grumes of lymph and blood, without any regular order or figure, which had nevertheleſs ſome adheſions to the artery. In this caſe, the matter does not exactly anſwer the Sieur la Foſſe's narrative; but there is the greateſt reaſon to ſuppoſe that the agitations of the horſe after the amputation, had interrupted the efforts of nature to form the grume; and indeed this obſervation ought to be looked upon as an exception to thoſe we ſhall give the following account of.

In eight days after the amputation of the tail of a young mare, there appeared no manner of hæmorrhage; and when we directed M. la Foſſe to cut off the thigh of the ſame mare, about ten inches above the ham, the blood ſpurted out with great rapidity from ſeveral arteries; and in order to try whether an application of armenian. bole would not ſtop it as well as the puff-ball powder, we armed a pledget with the bole, and applied it, ſecuring it with a proper bandage; two hours and a half after, though the animal had not ſtirred, the blood ſtill iſſued

out; the dreſſings were taken off, and then the blood ſprung out with great force; the aforeſaid powder of the lycoperdon was applied, which was gently confined by his hand only, for ſix minutes, when upon taking away his hand, the crural artery only bled through the layer of powder upon the ſtump; but this little ſtream was two thirds ſmaller than before, by the application, but it grew no bigger though let alone for ſix minutes longer; then the Sieur la Foſſe applied a pinch of the powder to that little ſtream, which he held on with his finger about four minutes longer, and the bleeding was ſtopped. In its place a little elevation was very clearly obſerved, puſhing and retiring ſucceſſively, and exactly correſponding with the arterial pulſation. This obſervation laſted a quarter of an hour, without the leaſt hæmorrhage from any part; the ſtump was then dreſſed up with pledgets of tow, and three days after we obſerved at the extremity of the artery a grume which plug'd up the orifice, and over the grume a white tranſparent ſkin; when this veſſel was opened longitudinally, we obſerved the grume intire as it was; it was formed into a cone, the baſe of which was to the divided end of the artery, which it cloſed exactly, the point or apex being turned inward, and was elongated like a ſtilet floating in the arterial tube. The baſis projected about a line beyond

beyond the extremity of the artery, and was fungous and rounded like a nipple, and covered with granulations like the little membranous ſack mentioned before. The point had a ſmooth ſurface, and was nearly equal to the internal ſurface of the artery in conſiſtence; the middle part, which might be called the body of the grume, was more red than the extremities, which had but a very faint tincture of the ſame colour: but it was firm, and was ſo ſtrongly attached to the artery, that we could not pull them aſunder without tearing, and leaving a conſiderable quantity of its ſubſtance behind, which conſtituted one body with the veſſel. We ordered another amputation of a horſe's ſhoulder, and every thing anſwered in the ſame manner, as in the former experiment, except in a few trivial circumſtances; which ſeemed indeed to depend only upon the horſe's having died twenty ſix hours after the amputation: the grume in this caſe was redder at the extremities, ſhorter, and leſs ſolid, nor did it adhere ſo firmly to the artery: but it is very plain that it wanted only the horſe's living two days longer to have been exactly parallel to the former caſe.

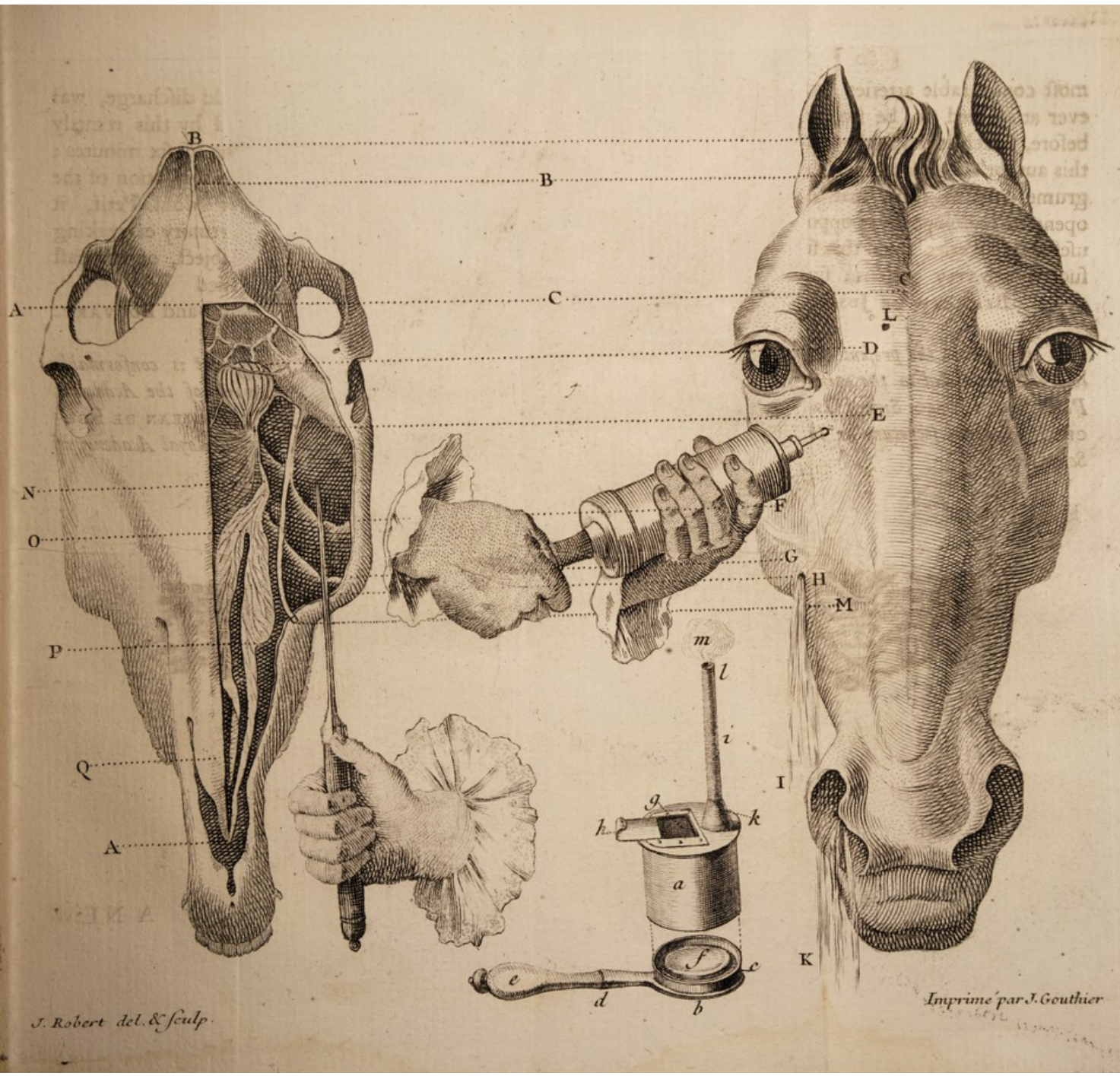
From what has been laid down, it may be concluded that the Sieur la Foſſe has advanced nothing but the truth; we agree, however, that the uſe of this powder of the puff-balls for ſtopping of blood was not wholly unknown, but it is not certain that the blood which the

moſt

moſt conſiderable arteries could diſcharge, was ever attempted to be ſtopped by this remedy before, which it did in the ſpace of ſix minutes; this author's explanation of the formation of the grume, differs from that of Monſ. Petit, it opens to philoſophers an opportunity of making uſeful diſcoveries upon this ſubject, or at leaſt ſuch as are very curious; ſigned

BERNARD DE JUSSIEU, and BOUVART.

*I certify that the preſent extract is conformable to its original and to the opinion of the Academy. Paris Feb.* 1, 1750. *Signed* GRANDJEAN DE FOUCHY, *perpetual ſecretary to the Royal Academy of Sciences.*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A NEW

# METHOD

OF

# SHOEING

BOTH

COACH AND SADDLE-HORSES,

*In order to render them more ſecure upon their feet at all times, upon even the ſmootheſt pavements.*

EVERY country has its different method of ſhoeing horſes; but as I do not intend to make a critical examination into either the errors or perfections of their methods, I ſhall only give a ſhort account of the practice of ſeveral countries, that the reader himſelf may judge how nearly the method of ſhoeing in our time comes to perfection, or how far from it.

In Pruſſia they only ſhoe before and not behind.

In Germany they ſhoe both before and behind; and commonly put three cramps upon each ſhoe.

In France they cramp them only behind.

In England the ſhoes have no cramps either before or behind, and the ſhoes are thin, broad, and have very ſtrong heels in order to hinder the frog's bearing upon the ground.

In Spain the heels of the ſhoes are thin, and partly diminiſhed upon the heels of the horſe.

In Turky the horſe's heels and ſoles are covered with a plate which ſerves them inſtead of ſhoes, wherein they contrive an opening to let part of the frog come through. All theſe ſeveral kinds are repreſented in the fourth table.

As to the manner of paring the foot, it only differs according to the greater or leſs quantity of the ſoles being taken off.

It muſt, however, be obſerved, with reſpect to the cramps, that our anceſtors put them on the fore-feet; though there is no treatiſe that makes any mention of it; but over the door of the church of St. Severin there is a number of ſhoes fixed to the wall with two cramps on each, which were certainly the ſhoes before the laſt age. Some of them had been worn and others not, but it is plain they were thoſe in uſe at that time.

For

For ſeveral years paſt the method of cramps have been left off, inſtead of which ſtrong heels have been brought into uſe; but the more able farriers perceiving the abuſe of ſuch, now keep the heels equal to the reſt of the ſhoe.

Every nation thought themſelves right, and believe ſo ſtill; nor will any of them change the manner of ſhoeing. The foreigners who are lovers of horſes, and who come into this kingdom, are a ſtrong proof of this; for almoſt all of them bring with them a farrier of their own country; being ſtrongly of opinion that their methods are preferable to ours.

But we are pretty even with them in our opinions of them, for we generally uſe the ſame precaution when we travel into their countries.

It muſt not be ſuppoſed that the difference of the ground, cauſes any manner of difference in the methods of ſhoeing, which I have ſometimes heard mentioned as a cauſe; for we daily ſee here horſes ſhod in the Engliſh, German, and Spaniſh manner, and yet go upon our ground neither better nor worſe than thoſe ſhod in the French method; but only that this practice is ſcarce better in one country than another, and that in all places it is rather a matter of fancy and cuſtom than of conſideration and reaſon.

It appears to me that the cuſtom of ſhoeing horſes was a good one, and even neceſſary up-

on a pavement, but it is upon their form and the manner of ſetting them on, that not only the preſervation of the foot, but alſo the ſafety of their legs, and the eaſe of their motions depend.

And in effect, the more eaſy our ſhoes ſet upon us, the more active we are; ſo a large, long, thick ſhoe ought to have the ſame effect upon horſes, that wooden ſhoes have upon us, that is, make them heavy, unweildy, and hobling.

Let us now obſerve the going, as well as the external and internal ſtructure of a horſe's foot.

The horſe who draws, preſſes firſt upon the toe, then ſucceſſively upon the ſides, to eaſe the toe; and then the horſe's heel yields upon the heel of the ſhoe, from which it immediately riſes again.

The ſaddle or pack-horſe places the toe but lightly; which is the only difference in their going; ſo that in both caſes, the point of ſupport is fixed neither upon the heel nor toe, but between both; which it is eaſy to demonſtrate anatomically, figure the firſt, plate III.

The canon-bone 3. preſſes upon the paſtern 4. this upon the coronary 5. the coronary upon the coffin or foot-bone 6. and upon the nut-bone 3. fig. 2.

By this diſpoſition of the bones, we ſhould obſerve two eſſential things, which lay open the faults in the preſent method of ſhoeing, and point out the means of being able to remedy

medy them for the future: one is that the effort of the weight of a horſe does not bear either upon the toe or the heel, but on the middle between both; the other ſhews that the greater the diſtance of the ſole from the ground, or from whatſoever point of ſupport, the more the puſhing of the coronary-bone upon the nut-bone, will fatigue the nerve or tendon upon which it reſts, by the inordinate diſtenſion it undergoes at every ſtep the horſe takes *.

We find therefore that in our preſent method, a long ſhoe is not only perfectly uſeleſs, but it is even very prejudicial; in the firſt place it will be leſs ſolid;—ſecondly, the horſe's heels coming to ſink upon thoſe of the ſhoes, the longer the lever, the greater will be the drag upon the clinches of the nails at the toe; and we often ſee horſes, having long ſhoes, ſtrike them off in walking upon the beſt ground.

They often alſo loſe their ſhoes in ſtiff or tough clay, for they are apt to ſtick the faſter for being ſo long.

Again when the ſhoe-heel happens between two pavement ſtones, the ſhoe comes off.

The ſame thing very often happens when they paſs into the doors of coach houſes, which have commonly bars of iron along the threſhold.

An old colonel of horſe told me that horſes

* See the anatomical plates, which ſhew the ſtructure of a horſe's foot.

very frequently loſe their ſhoes in paſſing over the draw-bridges of fortified towns, becauſe they are ſtrengthened with croſs parallel iron-bars. He ſeemed convinced of the convenience of the new method of ſhoeing I propoſe.

Horſes frequently too knock off their ſhoes by hitting the toe of the hind-foot upon the heel of the fore-ſhoe when they trot, eſpecially when they are too apt to over-reach; and alſo loſe them by happening to put one foot upon another, while in the ſtable, from the length of the ſhoe.

The longer a ſhoe is, and the more it covers the ſole, the more liable the horſe will be to fall, trip, and hobble in his walk; particularly if he goes upon a pavement, becauſe the ſurface being formed of round parts, and the ſhoe having a large uniform hard face, he can ſcarce have above two or three points of ſupport.

The Engliſh who practiſe this kind of ſhoeing take care therefore not to bring their horſes upon a flat pavement without an abſolute neceſſity. The length of the ſhoe cauſes yet another ill accident to ſome horſes, which they feel all their lives; and it is to thoſe eſpecially that lie down as a cow uſually does; for in this poſture the fore-legs are ſo bent under them backward, as that the heels of the ſhoes wound their elbows, and cauſe a kind of abſceſs in the part.

It is thought that ſtrong ſhoe-heels are an eaſe to the weak heels and fetlocks of horſes, as if the body of the ſhoe was flexible enough to yield to the horſe's heel, and under this notion, they raiſe the ſhoe-heel, and leave a vacant ſpace between that and the horſes's heel.

Nevertheleſs the direct contrary happens.

1. It is the hoof that by its flexibility yields to the ſhoe-heel, which is quite inflexible.

2. The thicker the ſhoe-heel is, and the more ſubject that of the horſe is to meet it.

3. Inſtead of being eaſed, the horſe's heel becomes more compreſſed, becauſe it has always the ſame point of ſupport.

Let us but remember what I have ſaid above concerning the horney ſole; that it is from the fleſhy ſole it receives its nouriſhment; that its connection and juicy parts conſiſt in its thickneſs; and that it hardens, and receives leſs nouriſhment in proportion as it is thinned. We even ſee horſes grow lame by the habit of paring the ſole.

The air, when it is in this thin ſtate, penetrates and dries it to ſuch a degree, that if when a horſe ſtands dry, they neglect moiſtening his feet, they contract, and compreſs the fleſhy ſole, ſo as to lame the animal.

But let us go on: what dangers does not a horſe run, when his ſole is almoſt gone by being pared too cloſe? if he ſhould happen to tread upon ſtumps, pieces of bottles, or nails,

they will eaſily penetrate to the fleſhy ſole, lame the horſe for a conſiderable time, and ſometimes for his life.

Suppoſe a horſe loſes a ſhoe, which often happens, when his foot's but newly pared; he cannot go an hundred paces before he grows lame; becauſe, as in this ſtate the ſole is hollowed away, the horſe is ſuſtained only upon the walls of the hoof, which having no aſſiſtance of ſupport from the horny ſole, is immediately worn and battered by the weight of the horſe's body; and the ſooner he treads upon any hard ſubſtance, the ſooner he grows quite lame.

But this cannot happen to a horſe, whoſe ſole is left intire in its full ſtrength; for when the ſhoe happens to fall off, the ſole and frog bear upon the ground, eaſe the walls of the hoof of part of the weight of the body, and the horſe thus unſhod, will purſue his journey, and come in ſafe and ſound.

It is moſt certain that all horſes, except ſuch as have their feet overgrown, or ſuch as may have a particular occaſion of being ſhod to preſerve the ſole, may, at any rate, go without ſhoes; and we have examples among ourſelves, (without mentioning the cuſtoms of Arabia, or Tartary) of horſes who are at daily work in the country, without the leaſt need of being ever ſhod. But as we employ all our care and addreſs to hollow the foot by paring it even to the quick;

and

and to form an exact fine frog, in ſhort ſuch an one as, we ſay in France, is neatly put out of hand, it is abſolutely neceſſary to ſet ſhoes on them.

I therefore warn all lovers of horſemanſhip to ſecure their horſes, as much as may be, from the perfection of ſuch work. Perhaps it may be aſked what becomes of the horny ſole if it be not pared? they may be afraid of its becoming too large by its growing; not at all, for in proportion as it grows, it dries, ſcales, and falls off in flakes.

Again if the horny ſole be left intire, there would be no fear of thoſe inflammations, ariſing from the dangerous compreſſions mentioned in this treatiſe. For by its connection, thickneſs, and flexibility, as well as its contexture, it would ſeem to be wholly deſtined, by nature, to ſerve as a cuſhion to the fleſhy ſole and tendon which reſt upon it; in order to break the violent ſhocks of a pavement, ſtone, or any kind of ſtump, &c.

There is a fact which we muſt alſo be convinc- of, and that is, that a horſe very ſeldom goes eaſy, or eſcapes being ſoon jaded, if the frog does not bear upon the ground; and as it is the only point of ſupport to the tendon; if you keep it at any diſtance from the ground by paring it away, an inordinate diſtenſion will happen to the tendon, cauſed by the preſſure of the corona-ry-bone upon the nut-bone (as we have ſaid already)

already) which diſtenſion being repeated at every ſtep he goes, tires it, and cauſes an inflammation, whence proceed relaxation, defluxions and tendinous ſwellings, eſpecially after long journies or hard riding. Theſe accidents proceed leſs from the length of the journey which is the common notion than from the bad cuſtom of paring the ſole.

The common methods of ſhoeing have another general inconvenience upon journies; which is that ſand and gravel get in, and are ground between the ſole and ſhoe, and again between the horſe's heels and thoſe of the ſhoe; and not coming out again readily, they cauſe compreſſions, inflammations, and at length a collection of matter which putrifies and ruins the cartilage, forming in this latter caſe, callous horny excreſcences, and in the former bruiſes and compreſſions of the ſole.

Theſe laſt accidents are alſo very often the effects of a ſtone's being wedg'd in between the ſhoe heels; and although this is ſoon perceived becauſe the horſe ſuddenly goes lame, yet in endeavouring to knock it out, you run the chance of either hurting and laming the horſe, or ſtriking off the ſhoe.

Let this circumſtance be well attended to, that the more a horſe's foot is pared, the more he is expoſed to the danger of meeting ſuch accidents: It is in the firſt place, depriving him of the defence provided by nature againſt hard

ſharp

ſharp bodies, which he may chance to tread upon; and in the ſecond place of a more important advantage both for his own, as well as his rider's ſake, which is, that in not paring away the ſole, nor ſetting on any more ſhoe than is neceſſary to preſerve the horny ſole, he will no more be ſubject to ſlip, neither upon the winters icy pavement, nor upon the dry ſmooth one of the ſummer ſeaſon, which I ſhall now proceed to demonſtrate.

1. In making a horſe walk upon the frog and partly upon the heel, the former being ſtrongly rubbed and puſhed againſt the ground or pavement, as it were, impreſſes itſelf, by the weight of the horſe's body into the inequalities and interſtices, it happens to meet in its way.

2. By its flexibility it eaſily receives the impreſſions of ſuch inequalities, ſo as that the foot reſting upon a great many more parts which mutually eaſe it, by multiplying the points of ſupport, gives the animal a ſtronger adherence and more ſecurity upon the plane he goes upon. It may even be aſſerted, that the frog acquires a kind of ſenſation, by its correſpondence with the fleſhy ſole, and of this with the nerve; which though I will not compare it with what we feel in going barefoot; yet this ſenſation is fully ſufficient to give him proper warning of the counterpoiſe he ought to put his body into, for maintaining his equilibrium to keep himſelf from ſtumbling and falling.

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The end and deſign of ſhoeing horſes could not have been aimed at upon any other account, by whomſoever firſt put in practice, but as a preſervative and defence for the hoof as well as the ſole; but he could not think at the ſame time that it was neceſſary to pare away what he wanted to preſerve by the uſe of the ſhoes, I will not even ſay to that exceſs that we uſe in paring them, but not at all; becauſe that would be to act contrary to his firſt principle, and deſtroy his own work.

This precaution could never be recommended but in caſes where the horny ſole is uneven, inſomuch that the ſhoe could not bear equally upon it; which would take off from its neceſſary firmneſs; in ſuch a caſe it may be reaſonable, otherwiſe it would be very abſurd.

I have often ſpoke to ſuch lovers of horſemanſhip as take great care to have their horſes feet well pared; but none of them could give me any demonſtration either of the neceſſity or propriety of it. But at length convinced by my reaſons againſt it, I never could have any ſatisfaction from them, but that it was an eſtabliſhed cuſtom, and that it muſt be allowed to be by far the moſt genteel method.

I will offer but one word more upon this pernicious practice, which is, that the greater part of the farriers, in order to pare their horſes the neater, puſh the buttreſs even to the very blood,

blood, and then in order to ſtop it, have recourſe to a red hot iron.

When this operation is finiſhed he returns lame to the ſtable: the owner aſks the reaſon of it, but cannot be informed, becauſe both farrier and groom are either equally ignorant, or rather equally diſcreet upon this article.

I will venture to ſay, as a fact, that if a horſe loſes ſhoes ten times a day, a farrier will as often pare his foot, ſo exceſſively obſtinate is the cuſtom, and ſo poſitively thought neceſſary by the generality of the farriers.

I do not take upon me to inveigh againſt able and ſkilful farriers, I have reſpect for theſe, and do them all the juſtice imaginable; I only ſtrike at that ignorance alone, which has reduced a method of ſhoeing, which is in itſelf ſimple, eaſy and uſeful, in its principle; to a work which is pernicious in its uſe, and meerly a mark of dexterity and neatneſs in its execution.

From what has hitherto been ſaid, it is plain that our kind of ſhoeing, and the manner of our application of it, far from being ſerviceable to horſes, ruins, fatigues, and renders them unweildy and hobling; expoſes them to ſtreet nails, makes them take up their limbs aukwardly, ſubjects them to compreſſions of the ſole, callous excreſcences, tender-footedneſs, and obſtructions and ſwellings of the tendon. But by a new manner of ſhoeing, which will make them

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more alert and agreeable in their going, we ſhall be able to prevent the crowd of accidents mentioned; and it is from its ſimplicity, and the great eaſe of performing it, that all its advantages ariſe.

I cannot but wonder others have never thought of it before, and I have, indeed, ſome difficulty to perſuade myſelf, that I am the inventor; and I am more ready to believe, that it is no more than copying that which was practiſed by the firſt artiſt, who thought of ſetting ſhoes on horſes.

If I am right in my ſuſpicion, its having been forgotten, proves nothing againſt its perfection; becauſe neither a good nor bad method has any more right the one than the other, to fix our inclination from varying. We grow weary of every thing; and one, in order to improve upon the other, has invented ſhoes of different forms, lengths, and thickneſſes, to which he has been ſure to attribute many uſeful properties. The world, more credulous than well inſtructed, are eaſily convinced, and from hence ſprung the uſe of ſome long ſhoes, others thick, others with cramps, at length others with thick ſtrong heels, and in fine, others with thin ones. It is not unlikely that if the poor animals themſelves were able to give their opinions, nothing of all this would be put in execution; they would be kept to their antient method of being ſhod, which being in-

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vented to preſerve the hoof, had certainly none of the inconveniencies that attend our preſent method.

In order to give a ſtriking example of this, we need only to obſerve a draught-horſe, when he draws a loaded cart, at a time when the pavement happens to become ſlippery; we ſhall ſee the pain and torment the poor animal ſuffers, his feet having no purchaſe, he attempts in vain, to claw the pavement; every ſtep is a ſlip, for which he is often whipt without deſerving it; the back, breaſt, ſhoulders, legs, and all are ſtrained, all upon the rack; to which may be added, the perpetual fear of the whip, at every falſe ſtep he makes upon a pavement, which it is impoſſible to draw a load upon; under theſe circumſtances the horſe ſuffers more in one league, than if had drawn ten leagues upon the road; the foundering, inflamed lungs, fevers, and every other accident of a ſtrained horſe are the conſequences, which are often attributed to other cauſes: but what is ſtill more dreadful, that the very worſt jades do not ſuffer ſo much as the beſt horſes, who put all their ſtrength forward, and yet are not the more ſpared for their willingneſs.

I ſhould not omit mentioning here, that one of the principal reaſons that determined me to ſeek a means of reforming the old manner of ſhoeing, was the difficulty that horſes have to keep their feet upon the pavement of Paris in a very dry

ſeaſon; the more elegant the pavement of this capital is, which is wonderfully kept in repair, and the more advantageous to the citizens, the more prejudicial it is to the horſes. And the oftener the pavement is ſwept the more eaſily it grows ſlippery, and the more theſe animals are expoſed to dangers. But above all we muſt without controul yield to what is convenient to men, and accommodate the arts to them, which made me think of this new method, I proceed to propoſe.

A TRAIN

# THE MANNER *of* SHOEING.

THE ſole nor frog muſt never be pared, for the reaſons given before; we ought to be content with only taking down the edge of the hoof, as uſual, if it be thought too long; and then to ſet on a ſhoe in form of a half-moon *; thinning the heels, and making them a little longer for ſuch horſes as have weak hoofs; for when the feet are good they muſt only reach the middle of the hoof.

Eight ſmall nails made in the old way, that is, having very ſmall heads, are incruſted in the holes which are made, as the head is, in an oblong form; the figures both of the ſhoe and nail are to be ſeen in the fourth plate.

This is the whole of the myſtery; I own this method does not ſeem to be in taſte; it is even a general reproach which they who make the trial for the firſt time offer me. But the greater part of thoſe who have tried this way, continue it, they find it ſo advantageous.

As to the reſt, if the reader does not find my reaſons ſufficient to convince him of the

* See the plate of the ſhoes.

imperfection of the common method of ſhoeing, and of the advantage of the new way, I refer him to making the experiment; aſſuring him he is very much miſtaken, if he takes all I have ſaid, for a ſimple project, which would have no other merit than to have been formed from a meer rational theory. I aſſert to him that my notions have more ſolidity, and that in praiſing my new method of ſhoeing, I declare nothing but a fact a long time ago put in execution, and confirmed by practice.

The marquis de L. O *** colonel of horſe, and a lover of horſes, to whom I mentioned this new way of ſhoeing in October 1753, knowing the ſtructure of a horſe's foot, told me he thought it an uſeful and good way, and that he had a mind to have his horſes ſhod ſo; in ſhort he had it done, and tried it upon ſmooth pavements as well as upon ice; and although the roads were almoſt impaſſable this year 1754, his horſes never ſtumbled; and he recommended to me to go on with the ſame method.

I have ſhod in this manner for a great number of houſes in Paris; the firſt eſſay was made upon my own horſe, who draws my carriage to this day; he uſed to ſlip frightfully in going, though he was ſhod with cramps all round. But as ſoon as I had ſhod him in my new way, he became as ſure footed, as if he always walked upon good ground. I even proved in

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the laſt froſt, of laſt winter, that the ſame horſe, being ſhod in this manner and only two froſt nails at the toe went firm and ſure even upon the ice.

1. I have obſerved before that all kinds of ſhoeing went well upon every ſort of ground; it is neceſſary however, to mention a word or two more about it.

In the German ſhoeing, the faſhion is to have two cramps to each ſhoe; and is only fit for going upon the ice; upon all other grounds it is hurtful to the legs, which are raiſed up, as if upon ſtilts.

2. The Spaniſh method hurts the horſes heels by the length of the ſhoe they ſet on, and with which they confine the heels upon the two quarters of the horſe's heel, which joins the coronet, in ſuch a manner that the foot becomes tormented and preſſed ſo as not to be capable of ſpreading, which makes almoſt all the Spaniſh horſes grow narrow heeled.

3. The Engliſh manner of ſhoeing is to keep the ſhoe-heels large and high in order to ſave the frog; by this means they deprive them of the liberty of going with eaſe upon a pavement; becauſe the ſhoe does not bear upon the level, and produces an effect like that of a pivot, upon the middle of the ſhoe-heels and the vault or hollow.

4. The Turkiſh horſes have alſo a great deal to do to keep themſelves ſafe upon a pavement, becauſe the ſhoe covers all the foot.

5. The French method of ſhoeing has the fault I obſerved before, of making their ſhoes too long; of paring the feet and ſetting on one cramp on each ſhoe behind, which makes them go fideling; it would be better that they had two cramps to each ſhoe, but they make but one for fear the horſe ſhould go lame; I allow that cramps are uſeful, eſpecially in deſcents, and in backing, but this cramp in a few days is worn, it ſlips upon a pavement, and has no effect but juſt when it is new; again, does not the pavement alſo wear, while the ſtones grow convex in the middle, and make it ſlip from one to another, having no hold nor purchaſe between both?

It is therefore very eſſential to leave off the cramps and to ſhoe the horſe in ſuch a manner that the frog may bear upon the ground, in order to enable him to ſtop ſhort, and make him more ſure-footed than with cramps: the frog will ſerve horſes to go upon the ſmooth pavement, as felts enable men to go upon the ice.

It muſt be owned that the French method of ſhoeing is the beſt and moſt ſolid of all for flat-feet.

As to thoſe horſes who have tumors within the feet, and fiſſures without, or weak quarters, they muſt be ſhod in the ſemilunar manner; that is, ſo as that the outer-heel of the ſhoe may be ſomething longer, the inner very ſhort, in order to

prevent the weights bearing upon the affected or painful part; there are ſeveral expedients which produce the ſame effect; we may even think of many others, for it is the buſineſs of the artiſt; but to this time I know of none better, more ready, nor more certain, than the half moon ſhoe.

I wiſh for the benefit of ſociety that my atteſtation and experience were convincing enough to cauſe a reformation in a pernicious practice, which is ſubject to ſuch great inconveniencies; it would be the moſt agreeable recompence I could deſire.

This is what I had to ſay upon this new method of ſhoeing; there are already ſome of my fraternity who practiſe it; and many gentlemen of knowledge approve of it, and all I have done myſelf in it for ſix months, confirms to me more and more that it is a good method; yet I every day bear many contradictions from all ranks of people; ſome condemn it from prejudice, others thro' ignorance, and others thro malice. Some farriers, and ſeveral coachmen and grooms are againſt this method; I therefore think it my duty, to anſwer in a few words, all the objections which have come to my knowledge about it.

## Objection I.

They ſay that this kind of ſhoeing will cauſe ſtrains, bruiſes, and other ailments in the heel.

Answer. I have already demonſtrated that the ſhoe-heels never yield as was thought; that the weight of the horſe forces the hoof to come upon the ſhoe-heel; by which the horſe's-heel is bruiſed, as if in a preſs; and conſequently having the ſhoe-heels ſhort, he will be leſs ſubject to theſe diſorders by this ſhort ſhoeing, becauſe the horſe's-heel will but lightly touch the pavements, bearing the weight of the body intirely upon the middle of the foot, and upon the frog.

## Objection II.

Some pretend the horſe's-heel wears away.

Answer. To prove without reply, that this is falſe, that the heel can never be worn to the quick, and that its ſubſtance is of ſuch a nature as to grow more than it wears; it is that we are obliged to take it down every time we ſet on a ſhoe: but it is only in ſuch horſes as have the heels ſtrong.

## Objection III.

It is ſaid that I never open the heel, and that that is the cauſe of diſorders.

Answer. There are three ſorts of diſorders, the firſt comes from a ſtrain; to which I have anſwered, the ſecond from not opening the heel well; but when ever I ſee them diſpoſed that way, I pare them, leaving the frog in its full ſtrength; and the third ſort proceeds from the natural ſtructure of the foot; and in this caſe whether the foot be pared or not, they will equally come on.

## Objection IV.

They ſay that the frog ought to be fatigued, becauſe the horſe goes upon it.

Answer. I could rigorouſly appeal for this to experience: no horſe ſhod in this new method has to this day ſhewed the leaſt ſign of the fatigue of the frog, or of its ſenſibility; and I even do not believe that any one can ſay he ever ſaw horſes lamed, having old ſhoes on, for having travelled upon the frog; and it will be ſeen that it is ſcarce poſſible, when we reflect upon the whole particular ſtructure of this part as I have given it in this work. It is a ſoft, ſpongy, flexible ſubſtance, which by its natural elaſticity yields to the weight of the

body the inſtant the horſe preſſes his foot againſt the pavement, and immediately recovers again.

There is, however, a caſe wherein a horſe may become lame, by going upon the frog; but which never was objected to me; which is when it is hard and dry. The obſervation and anatomy of the foot have ſhewed me that it may cauſe lameneſs, becauſe the horſe in bearing upon the ground forces this hard part againſt the expanſion of the tendon which is attached to the foot-bone, and the horſe may become lame from the great ſenſibility of this part: but if I take off the little end of the frog with the buttreſs, he ought not to be lame.

## Objection V.

It is ſaid the frog will be more ſubject to have ſpongy excreſcences.

Answer. That happens only to ſuch horſes as are full of humours; and if there appears any diſpoſition towards it, the frog may be pared, and the horſe will go upon his heels, if they be ſtrong, as ſafely, upon a ſmooth pavement.

## Objection VI.

They ſay the nerve is wearied, that is, that the Tendo Achillis is ſtretched or dragged; and ſuffers by this ſhort ſhoeing, becauſe the frog bears upon the ground.

Answer. It is juſt the very contrary.

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Let us obſerve the effects of the weight of the body upon the Tendo Achillis in the following circumſtances.

If a horſe be ſhod with cramps, then there is a great diſtance between the frog and the pavement: the weight of the body bears upon the cramps; the frog which is now free in the air yields downwards, the tendon is ſtretched, and if the horſe makes a ſudden violent motion, the rupture of the tendon is almoſt inevitable: becauſe the frog cannot reach the ground to eaſe the tendon, to which it ought to be the point of ſupport; if the tendon is not ruptured, yet the horſe will be lame a long time after, becauſe of the great diſtenſion of the fibres which were ſo much upon the ſtretch as to be near breaking.

If we ſet on ſhoes with only ſtrong heels, the frog is not ſo high from the ground; the weight of the body may indeed force the frog to touch the middle of a paved ſtone, and thereby prevent the great diſtenſion of the tendon; but as the thickneſs of theſe heels hinders the ſubſtance of the frog to bear upon the ground, to yield and reſtore itſelf as much as it is capable of by its natural elaſticity, the tendon muſt ſnap, by any violent and ſudden ſpring, every other circumſtance being equal.

But if a horſe is ſhod without ſhoe-heels, the frog which bears all the horſe's weight gives way at every ſtep, and by its elaſticity is reſtored to its natural ſtate; the tendon is never

dragged

dragged or ſtrained; its fibres will not be ſuſceptible of any violent diſtenſion, in caſe of any ſudden violent motion.

I dare affirm before hand that a rupture of the tendon will never happen upon the middle of a paved ſtone; and if it ever ſhould, it could only be ruptured in the interſtice between two of theſe paved ſtones. From what I have ſaid, two things plainly appear: that all the different degrees of violence that one can imagine from its total rupture, to the moſt ſlight diſtraction of its fibres that can lame a horſe, may happen to the tendon; and that it is upon the frog alone that all theſe degrees depend, as it is more particularly laid down in the hiſtory of the fracture of the coronary-bone, and in the anatomy of a horſe's foot.

### Objection VII.

It is ſaid, the horſe will be more ſubject to be injured by ſtreet nails, and to other accidents which proceed from pricking the fleſhy ſole.

Answer. As in this method the foot is not pared, the horny ſole will always have its full natural ſtrength; and conſequently will be leſs liable to be penetrated, than when it is made extremely thin.

### Objection VIII.

They ſay that the horſe is not ſhod to be eaſy, that he goes in pain, and muſt be lame.

Answer.

ANSWER. If the horſe goes uneaſy, or is lamed, it cannot happen from the ſhoeing, however ſhort the ſhoe may be; if it be not from the different accidents that often proceed from the common methods of ſhoeing, and which may as well happen in the new way: which are 1. The foot being too much ſtraitened; 2. Accidental pricks: 3. The ſhoe nails may bind the enchannelled fleſh too much. 4. The ſhoe may bear too much upon the ſole. 5. When the ſhoe heels preſs upon the weak heels of the horſe. 6. When the ſole is burnt. 7. Wounds of the fleſhy ſole made by the buttreſs.

In my way of ſhoeing I avoid four of theſe accidents. 1. The heel is never ſtrained, becauſe I put no part of the ſhoe upon it: 2. I preſerve the ſole intire, to which I never uſe the buttreſs. 3. The fleſhy ſole can never be burnt, nor wounded by the buttreſs, ſince it never is touched with it. Let the three other accidents abovementioned be taken care of, and I defy them to lame a horſe that has a good foot, let the ſhoe be never ſo ſhort.

## OBJECTION IX.

It is ſaid that the horſe is liable to loſe his ſhoes, becauſe they are ſet on with only ſmall nails.

ANSWER. It is moſt certain that a ſhort

ſhoe

ſhoe with ſmall nails, will hold on better than a long ſhoe with large nails; that it has leſs weight; that the lever is ſhorter, which has yet leſs weight of the ſhoe, and by conſequence it ſtrains the clinches the leſs; and does not divide the hoof like a large nail. Moreover I refer to the experiment. As to thoſe who are no friends to the new method of ſhoeing, let them only clinch the nails in a careleſs manner, and the horſe will caſt his ſhoes, as they pleaſe.

### Objection X.

It is ſaid that the horſes that are not ſhod with cramps are moſt ſubject to ſlip.

Answer. I can affirm that the more dry and more ſmooth the pavement, and the more the frog or horſes heel bears upon the ground, the horſe will be the more ſecure; and he will ſlip much leſs than if he had cramps; even tho' he goes down very ſteep places, or backs ſtrongly. What is moſt certain is, that the leſs ſhoe a horſe wears the leſs he ſlips, becauſe if it were poſſible he could do without any, he would not at all be liable to ſlipping.

I do not, however, engage that the ſhoeing I propoſe would have the ſame effect upon a moiſt or greaſy pavement, or that the horſes will hold on them ſo ſecurely, eſpecially on the hind feet; I think indeed that large nails would in ſuch places be of uſe; which might alſo happen upon a ſlippery ſoil.

I have

I have obſerved that the common ſhoe wears away almoſt half more than that I propoſe; if for example, I ſet on a ſhoe of two pounds weight, it will be half worn off by its ſervice, upon a pavement; and the ſame horſe going the ſame ground, and in the ſame ſpace of time, if he is ſhod with the half-moon ſhoe, it will not be diminiſhed above a third part: the ſhoes may be weighed before they are ſet on, and afterwards, by which the truth of what I advance may be judged of, and we ſhall be convinced by that, that a horſe ſhod according to my method, goes more lightly.

My new manner, which I repeat again, has nothing but prejudice againſt it; anatomy which has taught me the ſtructure of the foot, laid open to me all its advantages, and experience has confirmed them.

I hope, by the ſequel, it will be more reliſhed; and that they will return from a prejudice, which has no other foundation, than being an old cuſtom; as of a multitude of ancient bad practices, which often turn out dangerous or uſeleſs, of which I think I ought to give a ſhort account for the good of ſociety, while the work I am about ſerves to make them the more public.

## Error I.

I have ſeen a horſe whoſe jugular vein was divided, periſh by the ignorance of the operator,

tor, who not knowing the circulation of the blood, made a ligature upon the lower part, inſtead of the upper-part of the vein from whence the blood flowed; and whilſt he tried to ſtop it in the part from which it did not flow, the horſe died.

I ſaw the ſame fault committed upon horſes in whom the ſaphena was divided; among others upon one who died while they were ſtopping the vein, becauſe they made the ligature above, inſtead of making it below. Such as are more timorous than ordinary uſually make two ligatures and divide them in the middle; but there muſt never be but one upon whatſoever vein.

## Error II.

They ſtop up veins for different cauſes, under a notion that they are the vehicles for certain humours; I ſaw the jugulars ſtopped up in horſes, who became blind; and that muſt be very prejudicial to every other part, becauſe thereby they ſtop the courſe of the fluids. But there is yet ſomething more, which is, that I am perſuaded that this operation, independent of the accidents it occaſions, is ever uſeleſs, for it is falſe that the veins carry any nouriſhment to the parts, for they ought to know that the arteries do that office.

Error

## Error III.

When horſes are foundered they ſtop the circulation of the blood without knowing it, with bands of ſtraw, which they roll round the legs before and behind, or with a ribbon, and bind it very tight, for fear the diſeaſe ſhould deſcend to the feet. I have ſeen horſes who had gangrenes upon theſe parts, by ſuch compreſſions.

## Error IV.

It is a very bad method to ſuſpend horſes who cannot ſtand on their feet; for while they leave them on the ſlings a gangrene happens where theſe preſs. The reaſon of this is plain, it is becauſe they ſtop the courſe of the fluids.

## Error V.

There are ſome who pretend that the gripes in a horſe are cauſed by the vives *, and in order to cure it they open the maxillary glands which they vulgarly call the *Avives*, and, by this opening, often deſtroy the maxillary canals which carry the ſaliva to the mouth; and ſometimes the ſore becomes fiſtulous, and the

* Swellings of the glands under a horſe's ears.

fluid

fluid is loſt by this opening inſtead of going to the mouth, and deſtroys the horſe.

## Error VI.

There are ſome who take out the lampas; I have ſeen a horſe who bled to death after this operation, for they were never able to ſtop the blood.

They perform this operation under a notion that this production of the roof of the mouth is preternatural: they burn out one or two of the ridges of the roof, which they call the bean or lampas, with a red-hot iron, and conſequently make a ſore upon the part.

It muſt therefore be obſerved, that it is a general rule that all young horſes have their mouths more or leſs full of what are called lampas; and ſometimes they riſe higher than the fore-teeth; now in proportion as a horſe grows older, the roof flattens of itſelf, and the teeth then appear to riſe.

## Error VII.

Some horſes fall off their ſtomachs, and it is pretended their loſs of appetite is cauſed by ſome teeth grown above the reſt, but this is a meer imagination; for I have ſeen many horſes who had ſome of their teeth conſiderably higher than others, and yet chewed their aliment the better.

better. I have proved that, in attempting to file theſe pretended overgrown teeth, they ſhake all the upper and under-jaws, and frequently even cauſe inflammations by the violent ſhocks of the files they uſe to lower the eminences: and this operation, far from making him feed with eaſe, prevents it. I have even ſeen teeth which were broken off by this operation.

## Error VIII.

They take out what is thought a nerve at the end of the noſe for different reaſons, which anſwers no end, and does more harm than good; I have ſeen horſes become blind upon it, and others ſeized with a gangrene, and that by the great inflammation that happens from this method upon the part. Our old practitioners pretend that this a is nerve which begins at the end of the noſe, and extends to the laſt vertebra of the back (a meer error); for it is the two elevator muſcles of the upper-lip which take their origin or attachment under the eyes, and terminate at the end of the noſe; from which nothing but a tendon is the reſult; the operation conſiſts in making an opening at the end of the noſe, and raiſing the tendon with a wild goat's horn; dividing the two muſcles near their inſertion, and pulling them forcibly out; this operation is performed for ſeveral diſeaſes.

## Error IX.

They ſay there are horſes troubled with the vertigo, and therefore run a red-hot-iron thro' the foretop and mane, near the occipital bone; which ſometimes falls upon the cervical ligament which is inſerted into the poſterior creſt or ridge of the occipital-bone, this operation is intended to deſtroy a live worm which beyond diſpute is a meer chimera; for I opened ſeveral of theſe horſes, attacked (as they ſaid) with the ſame diſorder, and never ſaw any worms, nor any perſon who ſaid he ever found any. I believe this diſorder to be nothing but an inflammation of the brain. I ſaw a horſe cured of this inflammation, but he was plagued for four months with the application of the cautery, and not being able any longer to hold up his head, he was abandoned. I found that the cautery had deſtroyed the cervical ligament, which confirms what I have ſaid above.

## Error X.

I ſaw a horſe into whoſe throat they had thruſt a leek, imagining he had ſwallowed a feather, which made him cough; they thruſt it to the very trachea and ſeveral of its fragments remained behind, which made him cough more and more: they then thruſt in an oxe's ſinew down

down his throat which they forced yet farther, and the horſe was ſuffocated; I opened him and found the fragments of the leek as far down as the *Bronchia.*

As to the notion of a horſe's cough proceeding from feathers ſwallowed down, it is very falſe, for before they can reach the œſophagus they are moiſtened by the ſaliva, which is always in great abundance in horſes; I more than once made the experiment; for I gave to ſome greedy horſes feathers of different ſizes to eat among their hay, which never did them any harm; they very often eat them in farms where there is poultry, and nothing happens to them from it.

## Error XI.

I once ſaw a horſe who was thought lame in the ſhoulder, and was forced to go on the part affected, by tying up the other foot to the leg with a cord; this is called ſwimming on dry land; ſome time after there appeared a ſwelling on the coronet, which ſhewed the ſeat of the lameneſs to be in the foot, and that it was very injudicious to have forced him to move upon the diſeaſed part. This horſe, inſtead of being relieved, continued lame.

## Error XII.

They perform, what is called *drawing the thorn*, upon lame horſes, being perſuaded that

the head of the thigh-bone is diſlocated, with an intention conſequently of reducing it.

Let us ſuppoſe it was ſo, (which I never yet ſaw) I have actually ſeen the femur and its head fractured in its cavity, and even the oſſa ilia, but never obſerved it to be diſlocated, nor has any one ever pretended to me to have ſeen it; but in this ſuppoſition, I ſay, I do not believe it is poſſible to reduce it.

To *draw the thorn*, is to tie one end of a rope to the fetlock of the diſeaſed limb, and the other to a flexible tree, from which they make the horſe pull by whipping him; I have ſeen ſome who were but a little lame, and after this torture, became more lame, and remained ſo all their lives.

## Error XIII.

For the cure of drags and ſtrains they have recourſe to the ſkin as if it was the ſeat of the diſorder; it was never ſeen that a horſe was lame from cutaneous diſeaſes, except ſometimes by a ſtring of the farcy; which compreſſes the muſcles and hinders their motion; or by ſome abſceſs formed upon them.

The common remedy for theſe diſorders is to paſs ſetons or rowels between the ſkin and cutaneous muſcles, made either of ſimple cords or mixed with hair; or of ribbon, or leather; they alſo put in ſtraw and twigs of birch or other wood;

there

there is an infinite number of other remedies, but it would be too tedious to enumerate them, all which tend to promote ſuppuration in ſome part or other, and produce no other effect than to puniſh the horſe to no manner of purpoſe. Theſe operations ſhould be regarded as kinds of cauſtics which are of no other uſe than to cauſe a diſcharge of humours.

I once was obliged by the importunities of the owner to fire his lame horſe (as it is yet in practice) who, he ſaid, had a ſtrain; he made me apply the cautery to a great many points which penetrated to the muſcles; a great inflammation came on, and the animal became more lame than he ever was before; the whole thigh was dried up, and was lamed by it for ever. I performed this operation againſt my will; but as I was ſubject to his orders for that time, I was obliged to ſatisfy him.

## Error XIV.

There is yet a method which in my opinion is another error, which is bleeding horſes in the month of May, even though they are in perfect health; I cannot ſee upon what this cuſtom is founded, eſpecially as they are well; indeed I have ſeen many become ill by it.

I ſhall add this laſt ſhort reflection upon horſes ſaid to be cold in the ſhoulders, or ſeized in the ſhoulders.

I think it is in the joints of the foot, and not

in

in the ſhoulders, the cauſes of laming horſes ought to be looked for.

What leaves no manner of room to doubt that the origin of this diſeaſe is not ſolely in the articulations, is, that after having diſſected horſes whom they thought cold in the ſhoulders, I found that the ſynovia of the joints in the foot was diminiſhed and changed. I believe that when a horſe is very hot, the ſweat which falls from the ſhoulders and neck upon the legs, in proportion as it deſcends from the trunk grows cold upon the lower extremities, which moreover cannot be ſo warm as the muſcles.

It is to this diſtance, to this organiſation, and to the cooling of the ſweat upon theſe parts we may attribute the diminution and alteration of the ſynovia which firſt cauſes the foot to chop or crack and then lames the horſe.

This evil may be prevented by walking a horſe gently after hard riding, that he may cool by degrees, till he is well dried; he is then to have his legs well rubbed down, to be covered and kept very warm, in his cloths for an hour; no riſque is run in carrying him to the water to waſh him, if he is ſplaſhed with dirt, though he is in a ſweat; care muſt only be taken not to let him drink, and to walk him before you put him into the ſtable, that he may not grow ſuddenly cold; the cuſtom of rubbing the legs with ſtraw is ſalutary, being intended to refreſh

the

the parts, and ſo is that of keeping them warm, in as much as it prevents foundering, glanders, and other accidents.

The ſubjects would be inexhauſtible if I ſhould enlarge upon all thoſe that are the objects of this book; but I leave it to thoſe of my fraternity who are more learned and ſkilful than myſelf to publiſh what I may have forgot: and hope that the little light I have thrown upon our art, which is yet in too much obſcurity, will engage them to bring it to perfection; and for my part, I declare I ſhall be ſincerely obliged not only to thoſe of my profeſſion, but alſo to all lovers of horſemanſhip, if they will be ſo kind as to ſhew me my errors, as well as communicate their own reflections and diſcoveries.

It appears to me that the Engliſh farriers have neither more knowledge nor experience than we have in the ſubject, and particularly in that of the circulation of the blood; nor indeed in a vaſt number of diſeaſes, for which they generally apply the ſame remedies without diſtinction, and without endeavouring to be certainly acquainted with the true cauſe.

Here is the manner in which Mr. Bartlet, a ſurgeon of London, explains himſelf upon the matter; who has publiſhed a book this year, which I have cauſed to be tranſlated, entitled: *The Gentleman's Farriery, or a practical Treatiſe on the Diſeaſes of Horſes:* wherein he has pointed out the beſt authors who have written upon the ſubject.

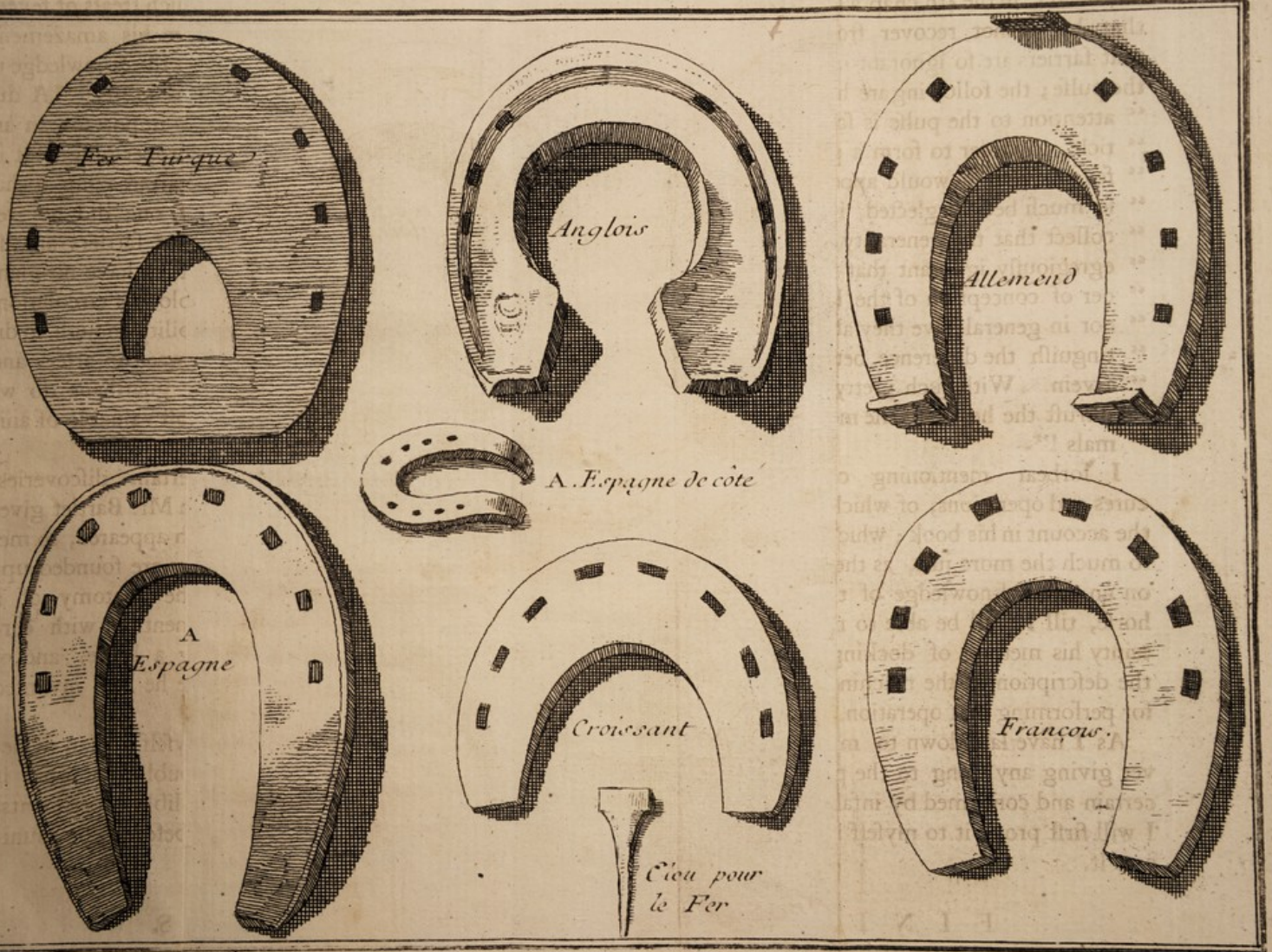
He

He ſays, in the 4th chap. which treats of fevers, that he cannot recover from his amazement, that farriers are ſo ignorant in the knowledge of the pulſe; the following are his words: "A due "attention to the pulſe is ſo important an ar- "ticle, in order to form a proper judgment in "fevers, that it would appear amazing it has "ſo much been neglected, if one did not re- "collect that the generality of farriers are ſo "egregiouſly ignorant that they have no man- "ner of conception of the blood's circulation, "nor in general have they ability enough to di- "tinguiſh the difference between an artery and "a vein. With ſuch pretty guardians do we "intruſt the health of the moſt valuable of ani- "mals!"

I forbear mentioning certain diſcoveries, cures and operations, of which Mr. Bartlet gives the account in his book; which appeared, to me, ſo much the more juſt, as they are founded upon an exact knowledge of the anatomy of a horſe, till I ſhall be able to mention with certainty his method of docking a horſe, and of the deſcription of the machine he has invented for performing that operation.

As I have laid down to myſelf a plan of never giving any thing to the public but what is certain and confirmed by infallible experiments, I will firſt prove it to myſelf before I communicate it.

FINIS.


Fer Turque
Anglois
Allemend
A Espagne de côté
A Espagne
Croissant
François.
Clou pour le Fer