

The First Friends of Veterinary Medicine

IN CONSIDERING THE SOURCES of information on animal disease prior to 1800, it is evident that these were at best intermittent, desultory, or merely incidental. In the absence of a regular medium for the reporting of disease—animal or human—this is not so surprising as it is unfortunate. The reports of travellers, undoubtedly honest souls at heart, frequently are colored by imagination, or distorted by inadequate observation. Most of the books on veterinary subjects were either frank British reprints, or “tainted” by British thinking in the sense that they did not reflect the actual situation in America. And while some altruism can be ascribed to the authors of native works, none are entirely devoid of commercialism. No single writer, George Washington excepted, produced any substantial volume of first-hand observations on animal disease and related matters, and it must be accepted as fact that he did not give overt thought to veterinary medicine per se as a necessity in the expanding economy of the New World.

Credit for the first recognition of veterinary medicine as an essential force in America, and for the first conscientious reporting of animal disease, must go to the Philadelphia Society for Promoting Agriculture. This group, which numbered among its membership such luminaries as Washington, Franklin, Noah Webster, and Benjamin Rush, was founded in 1785, but

it is not until the publication of the first volume of its *Memoirs* in 1808 that we have any record of its advocacy of veterinary medicine. It is significant that practically all of the pioneer advocates of veterinary medicine in America were members of, or associated with, the Society. In particular, three of its members, Judge Richard Peters, and the physicians, Benjamin Rush and James Mease, can be accounted the first staunch friends of the yet unborn veterinary profession. The contributions of each of these men, therefore, will bear examination at some length.

RICHARD PETERS, JUDGE

Richard Peters, a prominent patriot, lawyer, and country gentleman, was the first public figure to call for the establishment of a veterinary profession in America. In 1805 he became president of the Philadelphia Society for Promoting Agriculture, and a year later was responsible for the Society offering a gold medal:

for the best essay and plan, for promoting veterinary knowledge and instruction, both scientifically and practically, under the circumstances of our country. . . . Aid to schools and establishments for this, among other agricultural purposes, ought to be given by the national and state legislatures. . . . Animals are abandoned, when diseased, to all the calamities attended on ignorance of their maladies, or cure. Pretenders and empirics, of the most contemptable character, prey on the necessities

and credulity of those who are compelled to apply to them on this subject. . . . If it [veterinary medicine] has held an inferior rank in the classification of science and knowledge, it is entirely owing to the unmerited neglect with which it has been unaccountably treated. It is time it should be rescued from obscurity, and placed among the most commendable and necessary branches of medical education.

How much earlier he had this interest is suggested by his statement in 1807, at the age of 37:

For a great portion of my life, I have occasionally endeavored to prevail on professional men, to assist the business of agriculture, by devoting part of their time and talents to veterinary subjects. It is truly unfortunate, that veterinary knowledge is so rare, and so little valued by medical characters, that necessity compels, and accident alone favours experiments, in the hands of those, who have no assistance from professional attainments.

Until Benjamin Rush responded to the Society proposal, Peters commented, concerning his own efforts:

I have never succeeded. . . . Whatever may be thought by others, of this first compliance [by Rush], with my long continued endeavours, I deem it the cornerstone of some future valuable building.

Rush's lecture delivered before the Society in 1807, calling for medical men to pay more attention to veterinary medicine, however, evoked no immediate response. Commenting on a paper on sheep diseases by a Dr. Petrikin in 1811, Peters noted:

until this communication we have had no instance of the good effect produced on medical men, by the important example set in that lecture. So our domestic animals are either, from necessity placed in the hands of ignorant and fraudulent quacks, and low pretenders to veterinary knowledge, or abandoned to their fate. The latter is in most cases, the safest alternative.

Hoven Cattle

Peters himself, however, did not sit idly by, expecting others to provide the material he called for. In fact, in addition to being a pillar of the Philadelphia Society, he may be considered the first substantial contributor of first-hand observations on

veterinary matters. In 1805 he read a paper "On Hoven Cattle," in which he attributed the recent increase of this ailment to the replacement of "worn out and sterile" pastures with clover. The latter, he considered good for agriculture, but when hungry cows are turned into lush pastures, it is "most productive of this disease." After recognizing the symptoms, Peters directs:

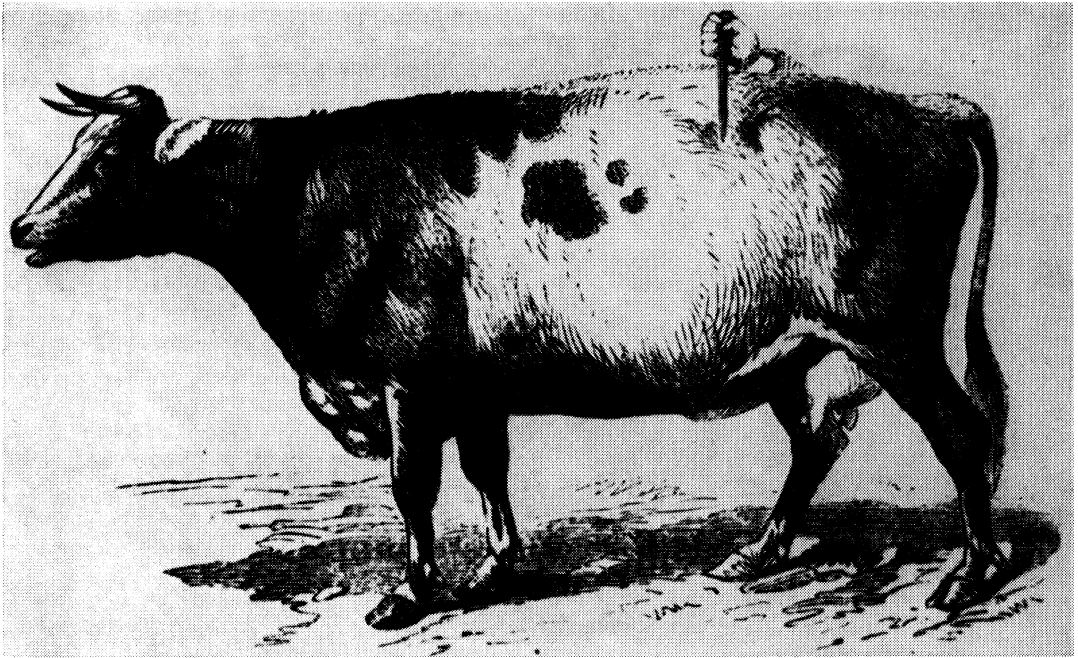
Immediately stab the animal, on the left side, between the hind rib and the hip bone . . . be not nice as to this. The disease will certainly be mortal, unless instantly relieved, therefore think not any remedy too daring. . . . I can vouch on my own experience, for the efficacy and little danger of the operation. Let nature cure the wound.

Other remedies he suggests include: forcible withdrawal of the tongue: "raking the beast . . . often practised by farriers"; and drenching with oil or salt water. He warns:

Some will suppose the beast poisoned . . . some, astonished at the suddenness, hideous symptoms and rapid progress of the malady, will pronounce, very gravely, that it is the effect of madness, or secret mischief and witchcraft. However absurd they may appear to persons of intelligence, I have been present when such causes have been seriously assigned. . . . The knife is the surest remedy for, and antidote against, this imaginary poison. It instantaneously dissolves the fancied spells of the ideal practitioner in witchcraft. It banishes from the brains of those who prove themselves no conjurers, all apprehensions on this score; more decidedly and promptly than even the old horse shoe, nailed on the door sill.

A case of "croup" in a calf in 1812 gave Peters the occasion to extol the virtues of post-mortem examination — something for which his treatment, if carried on extensively, would provide ample subjects. Peters relates:

I had the calf copiously bled; and directed castor oil to be thrown down the throat, through the neck of a bottle; after opening the passage of the windpipe with a flexible twig. . . . It finally died, by suffocation, in a spasmodic, or convulsion, fit. . . . I had it dissected (not very neatly) by my old farmer . . . a sort of ill digested greyish pus, filled up the passage.



The trocar was recommended for bloat (hoven) in cattle as early as 1805 by the prominent agriculturalist and Philadelphia judge, Richard Peters, who also was the first proponent of veterinary education in America. *American Agriculturalist*

On the subject of post-mortem examination, Peters urges:

Every fact relating to accidents or diseases of our stock, is interesting, in the present dearth of veterinary information. Those who neglect to attend to such facts, deeming them trifling and unimportant, are either culpably careless, or reprehensibly fastidious. Let every farmer and owner of stock, inform of any uncommon occurrences or diseases in domestic animals, happening under his observation; and a body of facts and information will be accumulated, which may, by men of medical science, and intelligence on such subjects, be turned to the greatest advantage. It has always been my habit to cause to be opened, and examined, every beast which could furnish instruction, for my own, or the benefit of others, when, on my farms, the animal had died by disease, or accident. Every farmer should follow this practice; and note the appearances, or probable causes, occasioning, or supposed to have produced, the loss of the animal. A knowledge of disease will point to remedies; and both himself and his neighbours may derive future advantages from his present misfortune.

Haws in Horses

In a paper "On the Haws, or Hooks, (so called) in Horses," in 1813, Peters blames much of his misfortunes with horses on: "a conceited driver of my carriage, who believed himself exclusively acquainted with the management of the affairs of the stable." This wretch:

stopped every crevice in the stable, through which air could be admitted; and fed unsparingly, contrary to my frequent injunctions. The consequences were, that several of my horses were seized with violent fevers, and particularly in morbid affections of the eyes. . . . My servant knew, as he believed, effectual remedies. "My horses had the *hooks*," as the *haws* are vulgarly denominated. — "These must be cut out of the eyes."

But Peters, who earlier had had a horse ruined in this manner, would not permit the operation (excision of the third eyelid), and substituted bleeding and purging. Peters also mentions lampas, or congested

palatal mucosa, for which "burning is usually practiced . . . but I never suffer it to be done."

On the subject of servants, Peters blames himself for:

unusual remissness in frequent visits to my stables. Such negligence every owner of horses should cautiously avoid. True, we cannot control or command servants in this country; in which *Saturnalia* are celebrated every day in the year. Among the ancients, the servants were satisfied with one annual, but short, term of equality.

He mentions the exemplary conduct of George Washington, who:

commenced every day with a visit to his stables: in which he minutely examined and directed every necessary arrangement: and no person of his day knew better how to treat the horse.

In a paper "On Sheep-killing Dogs," read in 1810, Peters urges:

We owe to the community, to be assistant in every way; and particularly to the execution of the laws on the subject. . . . Death is the only effectual remedy. . . . If numbers were lessened, those retained would be well fed; and few or none compelled to wander in search of prey. . . . It should be made disgraceful and uncivic . . . [to] keep supernumerary, worthless, or starved dogs.

Commenting on the recently enacted Pennsylvania dog law, Peters says: "Our *dog law* is a good one." This imposed a light tax on one dog, but increasingly heavier assessments on additional dogs kept by one owner as "a check on the unreasonable multiplication of the numbers of dogs." Owners of dogs which had killed sheep were required to kill the dog, and indemnity was paid the owner of the sheep from the tax funds in proportion to the value of the sheep.

Yellow Water

From the veterinary standpoint, the contribution of Peters that merits him lasting recognition is his article: "On the Yellow Water of Horses," read before the Philadelphia Society in 1807. Peters had lost three

of four horses affected with the disease in 1799; the constitution of the fourth horse "vanquished both his disease, and the *remedies*," and was living 20 years later. Although he admits: "I am not scientifically informed," he is satisfied that a "*violent remedy* must be pursued." This included bleeding — a gallon at first, and half a gallon daily for several days ("Few know the great quantity of blood, a tolerable sized horse can lose, without injury.") and strong purges. A drench of three or four ounces of nitre daily, injections of snake root and peach leaves, with shad pickle, salt, soap, and molasses in various combinations, brewers yeast, rowelling, blistering, and back-raking "are very efficacious."

A friend who had used "immediate and plentiful bleeding and nitre," had lost none, "though the horses, very generally, through the neighboring country, died of this disease. He took, at various times, from 6 to 8 gallons of blood from an horse." And while it is evident that Peters is convinced of the utility of copious bloodletting, he says:

I shall not enter the lists, for or against *plentiful blood letting*. The *lancet* is held by some, in human subjects, to be the magick wand of *Hygaeia*; and by others, the minister of death. So may they deem the *fleam*, applied to horses.

On the matter of contagion, in which he notes disagreements of opinion, he says: "The wisest course, is not to risque a well horse, among the sick."

On symptoms, which he says he cannot accurately describe, Peters is quite precise: these include dullness of the eyes, with the whites being jaundiced; pendant ears; tail projected horizontally; inclination, but incapacity to eat or to stool; flanks tucked and hollow; frequent shivering; and high fever, as indicated by a pulse rate above 45 — the pulse was neglected by most farriers. Also: "The hind legs are stiff, and straddling wide; but finally all the limbs fail," whereupon the horse writhes in circles on the ground: "hence some country people call the disorder 'the circles.'" Only the livers were seen to be affected:



Urinary problems were common — or at least frequently diagnosed — throughout the nineteenth century, “yellow water” of horses being a common complaint during the first decade. The straddling posture was considered an unfailing diagnostic sign. Manning: *Stock Doctor*

parts of the liver were hard and scirrhus . . . dry and friable. . . . The disease appears to be an highly malignant bilious fever. The secretion of the bile is obstructed by the morbid state of the liver and the gall is retained in the blood: and thus tinging that and the urine, possibly gave the name to the disease, of the *yellow water*.

Peters continues with full details of feeding, and notes that “exercise excited the lurking disease.” The disease, he feels, is much the same as the *yellows*, or *jaundice*, described in British works. He states:

It is an *hepatic* affection; and as a farrier who attended my *anatomical theatre*, and had opened many horses with this disease, called it the “*liver disorder*” for want of a more appropriate term.

More or less in summary, he suggests:

At any rate, this almost resistless destroyer, should add to our motives for using more *oxen*, and fewer horses, on our farms.

This disease apparently was diagnosed frequently toward the end of the eight-

eenth century and later, for a Dr. F. B. Sayre, in the *Medical Repository* for 1800, entitles a communication: “Observations of the Disease Commonly Called Yellow-Water in Horses.” According to Sayre, the disease was first seen in New Jersey in 1793, and was characterized by loss of appetite, highly colored urine, and swellings about the throat. It was believed to be contagious: “Therefore, the farmers assiduously separated the disordered from the sound.” The common treatment — bleeding and purging — Sayre considers to have been inadequate, and rowelling to be of no significance. In his own experience he effected cures by bleeding to faintness and using strong calomel purges.

Peters’ Legacy

Peters’ account is of considerable interest from several standpoints. It is perhaps the first full description of any animal disease in America; and in all too many in-

stances for another century or more emphasis was upon treatment alone — especially in those cases which terminated successfully. The treatment administered by Peters can be considered only as reflecting contemporary thinking — or lack thereof — upon the subject of animal disease. He at least admits: “The remedies are by no means well ascertained,” and, “I have no theory to establish.” He displays to perfection the enlightened interest of the landed gentry in the welfare of animals, and was among the first few to consistently call for greater attention to veterinary matters. Not only did he have relatively complete necropsies made, but evidently a number of farriers also did this as a matter of course. At this time there were no graduate veterinarians in America, the first having come to these shores in 1800.

Peters again pleads for greater attention to veterinary medicine in his eulogy on the horse:

It is to be earnestly wished, that intelligent medical characters here, would turn their attention to the disease of that noble animal, *the horse* — The companion, the faithful servant, and friend to man, — he deserves our grateful attention, and care. He shares and lessens our toils, promotes our health, administers to our comforts and amusements, fights with us our battles, and contributes largely to our wealth and prosperity.

Peters’ final plea appears in his comments on an article in the final volume of the *Memoirs* of the Philadelphia Society (1826), on the death of a horse from worms:

This and a thousand other misfortunes occurring to our domestic animals, loudly impress the indispensable usefulness of veterinary knowledge. . . . Many years have passed away since our Society, and myself individually, have warmly and feelingly recommended a veterinary institution, and that it should be part of the education of medical men, to know how to treat the diseases of the animals composing our stock. Let this part of the acquirements necessary for those who practice in the country, be rescued from the low state in which it now is; by being made essential to the education of medical men; and countless advantages will accrue to our farmers and breeders of stock. It is vain to raise valuable animals, without ensur-

ing, (so far as human means can accomplish it,) their safety, when attacked by diseases, or injured by accidents too frequently occurring; and often fatal through the want of skill in their treatment.

Peters’ advocacy of veterinary medicine did have palpable results, if only in the contributions of Benjamin Rush and James Mease. The continuity of the work of this triumvirate, however, ceased with the suspension of the Society *Memoirs* in 1826, and none of the three lived to see their aspirations materialize. How much impact Peters may have had beyond his intimate circle is perhaps a moot question, but his writings leave no doubts about the merits of the claim of his being the first friend of the veterinary profession in America.

BENJAMIN RUSH, PHYSICIAN

Even a casual study of the life and work of Benjamin Rush reveals hardly a facet of colonial and post-Revolutionary culture in which he did not demonstrate some interest. Among his manifold medical interests was his advocacy of veterinary education, a sidelight of his rich life which has received only the briefest notice by medical historians. In urging the study of the diseases of domestic animals by medical students and physicians, Goodman, his biographer, credits Rush with being “the earliest proponent of the study of veterinary science in America.” It is obvious, however, that this writer was unaware of the endeavors of Richard Peters. Rush’s principal veterinary contribution was his response to the request of the Philadelphia Society for a “Veterinary Essay and Plan.” While Rush is something of a controversial figure with regard to his contributions to medicine, there need be no doubt that his advocacy of veterinary medicine can be taken at face value.

Colonial America had its physicians, and had asserted its independence in medical education by the establishment of the Medical School of the College of Philadelphia in 1765. Despite the interruptions of war, several additional schools of medicine had been founded to 1800. Beginning with scattered contributions in the eighteenth

century, an impending voluminous medical literature found its fountainhead in the *Medical Repository* in 1797. A number of colonial physicians already had become world figures in medicine. Colonial America early recognized its need for physicians, and, whether graduate or nongraduate, the doctor was an important man in the New World.

In Europe, it is understandable that veterinary medicine should have been a subject beneath the notice of the average physician or surgeon. While veterinary and human medicine had flourished side by side in ancient times, the separation between the two disciplines had become absolute during the twilight of the Byzantine era. With animal medicine securely in the rough-and-ready hands of the farrier and cow-leech, there was little left of the once fundamental identity of veterinary and human medicine. In America however, many rural physicians forgot their hereditary antipathy for animal medicine and treated animals and man without discrimination. Undoubtedly many of them came to grips with the unescapable fact that a medical education did not always supply them with the necessary weapons for this guerilla warfare. What is remarkable is the number of eminent physicians, foremost among them Benjamin Rush, who recognized the need for veterinary education at a time when livestock owners did not see beyond the confines of their own barnyards and pastures. Undoubtedly there were occasions when they lamented the lack of qualified medical care for their stock, but none had raised the issue of how this problem should be met.

In compliance with the request of the Philadelphia Society, on November 2, 1807, Rush addressed the medical students of the University of Pennsylvania upon: "The Duty and Advantages of Studying the Diseases of Domestic Animals, and the Remedies Proper to Remove them." It is perhaps more than a little significant that Rush expected veterinary medicine to develop at first along with human medical study. While he did "lament the want of

a veterinary institution in this country," he apparently acted in accordance with the desires of the Society for a "practical" approach to the problem by urging medical students to study the diseases of domestic animals, for:

In vain will be the efforts of public bodies and private individuals to disseminate veterinary knowledge in our country, without a provision for regular and oral instruction upon it.

A Veterinary Chair

Rush apparently did envision the establishment of a veterinary curriculum as such, for he adds:

From the public spirit of the trustees of our University, and particularly from their disposition to promote every branch of science connected with medicine, there is reason to believe, that it is only necessary to lay before them the advantages of a veterinary chair, in order to insure its establishment. . . .

I have lived to see the medical school of Philadelphia emerge from small beginnings, and gradually advance to its present flourishing condition; but I am not yet satisfied with its prosperity and fame, nor shall I be so, until I see the veterinary science taught in our university.

The University of Pennsylvania did establish a school of veterinary medicine, but not until 1884, 71 years after the death of Rush. In keeping with the tradition Rush might have wished to father, the school was established largely through the efforts of a lineal descendent, the eminent Philadelphia physician, Rush Shippen Huidekoper, who became its first dean.

While Rush also foresaw the possibility that veterinary medicine might develop in conjunction with agricultural education, and not without profit to both, it is in some respects unfortunate this did become the pattern for the development of most of our veterinary schools. Beginning as veterinary science departments of agricultural colleges, and designed to render a necessary service to agricultural interests, most of our veterinary schools had to evolve without the guidance of experienced medical edu-

cators and the salutary stimulus of a medical climate. Rush states:

Should the subject of the diseases of domestic animals be connected with instruction upon the principles of agriculture . . . it would form a still more useful branch of education, not only for physicians, but for private gentlemen.

Although his "veterinary" lecture is not included in his *Selected Writings*, nor does it appear as such in an extensive bibliography of his works, Rush did include it in a volume of *Introductory Lectures* published in 1811, and it appears in the form of fragmentary lecture notes in his *Autobiography*. It would, therefore, be unjust to conclude that he had stepped outside his sphere, if that were possible, in complying with the request of the Philadelphia Society. While he mentions this request "being impressed upon me with peculiar force by the enlightened and patriotic president of that society, that I was led to select the interesting subject of our lecture," it seems most unlikely that his compliance was anything but one of sincere interest in the matter. Few men in any walk of life have before or since demonstrated so cosmopolitan and enlightened an interest in the affairs of man.

The Science of Medicine

That his convictions on the subject of veterinary medicine were not of a neoplastic nature is demonstrated in Rush's earlier writings. He had studied comparative anatomy at Edinburgh under Alexander Monro, *Secundus*, and in his "Lectures on Animal Life" in 1799, he had expounded upon the values which medicine might derive from the lower forms of animal life. Along the lines of his own philosophy, Rush stated in his "veterinary" lecture:

The science of medicine is related to everything. A mere physician, that is a physician who knows nothing but the sciences which are supposed to belong exclusively to his profession, is a non-entity. To deserve that title in its extensive import, it is necessary for us to know something of the principles and practice of every art and pursuit of man.

That Rush understood the differences as well as the similarities of human and animal diseases is evident from his lengthy description of specific symptoms of certain animal maladies. An advantage in studying the diseases of animals is that:

the number of their diseases is more limited, and their symptoms are more obvious, for they are not multiplied, nor complicated by intemperance in eating or drinking, nor are they under the influence of passions which suspend or alter them, and in some instances, to prevent their evolutions. The seats of their diseases, moreover, are more perfectly known from the greater facility of dissecting and examining their bodies after death.

Domestic Duties

In keeping with the title of his lecture, Rush mentions the moral obligations as well as the practical advantages of a study of the diseases of animals. Thus he urges:

We are bound in the first place, to discharge the important duties to domestic animals which I have mentioned, by the relation that has been established between them and us by the author of nature. . . . They live only for our benefit . . . so that there is constantly due, to them, an immense balance of debt from us. . . . By studying the diseases of domestic animals, we may rescue them from the hands of quacks, who add, to the mischievous and unsuccessful efforts of nature, the evils of absurd, painful, and destructive remedies.

Concerning the practical advantages to be derived from a study of the diseases of domestic animals, Rush says:

It is our duty and interest to attend in a more especial manner to the health of those domestic animals which constitute a part of our aliment, in order to prevent our contracting disease by eating them. A few years ago, a farmer in New Hampshire, who had overworked a fat ox in the time of harvest, killed him and sent his flesh to market. Of four and twenty persons who ate it, fourteen died, and chiefly with diseases of the stomach and bowels.

Rush's statement in this regard appears to be the first public recognition, by an eminent American, of the interrelation of certain human and animal diseases which included a practical solution to the problem.

In a sense, he anticipated a function of boards of health to which little thought, and less action, had been applied. It was not until 1884, when the Bureau of Animal Industry was established as an adjunct of the Department of Agriculture, that Rush's concept was ready for implementation upon a national basis.

Rush also urged the study of animal disease from a sense of duty to the nation and its citizens, saying:

The products of agriculture and commerce are often lessened by a fatal epidemic, brought on by diseases which blast the character of animal provisions; and many poor families have been left to suffer all the evils of penury and famine, by the death of a single horse, upon whose labor, of a cow upon whose milk, or of a hog upon whose flesh, they had relied exclusively for subsistence; all of whom perhaps perished by diseases that might have been cured.

A plague which killed large numbers of animals in a frontier community was a real calamity which stripped away the thin veneer of civilized comfort afforded by the work or food potential of the wealth represented by domestic animals.

In speaking to a group of medical students, it is logical that Rush should include a reference to the advantages accruing to medicine itself from a study of animal disease, a subject he had alluded to in his previous writings:

By extending our knowledge of the causes and cures of the diseases of domestic animals, we may add greatly to the certainty and usefulness of the profession of medicine, as far as it relates to the human species . . . there is scarcely a form of disease mentioned in our systems of nosology, but what is to be met with in domestic animals. . . . By acquiring this kind of knowledge, you will add to the resources of medicine as far as it relates to the human body and by disseminating it gratuitously in your neighborhood, you will become the benefactors of your country.

Modus Operandi

Rush adds:

For a while your knowledge in this branch of science, must be acquired by reading, observa-

tion and experiments; for as yet no societies or schools have been established for cultivating, or teaching it in the United States.

Regarding such societies Rush states:

In St. Domingo [Dominican Republic], a society called the "Philadelphians," was established many years ago, consisting chiefly of physicians, whose principal business was to investigate and cure, what they called epizootic diseases, that is the diseases of domestic animals.

The society, however, had gone out of existence.

Rush concludes his lecture, saying:

I have then gentlemen, laid before you a brief detail of the obligations we owe to our domestic animals, and the reciprocal advantages to be derived from extending to them, the benefits of the science of medicine. In performing this task, I have endeavored to become the organ of speech for the dumb, and a suppliant for creatures that are unable to plead for themselves. Permit me to recommend the subject to your attention in your future studies. . . . Take care of the health of domestic animals.

What the impact of Rush's plea for the study of veterinary medicine may have been is perhaps too subtle to determine. Certainly nothing as concrete as his determination to see veterinary science taught in "our university" came about in his lifetime, nor for long years afterward. As influential as he was in the affairs of the university, and the nation as well, public opinion had been too long one of indifference to the necessity for veterinary education. On the other hand, Rush's address apparently did stimulate the thinking of leading agriculturalists. John Skinner, editor of the *American Farmer*, not only reprinted Rush's address, but made repeated pleas of his own for the establishment of veterinary schools. Like Rush, he advocated the inclusion of veterinary instruction in the medical curriculum until veterinary schools should come into being. In addition, he fostered the reprinting in America of the leading veterinary works of Britain. In 1846 an unacknowledged summary of Rush's address, in his own words, appeared in the *American Agriculturalist*.

Rush's colleague, James Mease, delivered the first of "A Course of Lectures upon Comparative Anatomy and the Diseases of Domestic Animals" before the Philadelphia Society in 1813. Mease actually worked in the field of comparative pathology for some thirty years, and is noted for his pioneering work on Texas fever of cattle. Perhaps as an indirect result of the efforts of Rush and Mease, Robert Jennings, a student at the Pennsylvania Medical College of Philadelphia, delivered a series of veterinary lectures to his fellow students from 1846 to 1850. And in 1850, with the aid of a group of medical men of Philadelphia, Jennings organized the short-lived Veterinary College of Philadelphia.

JAMES MEASE, EPIDEMIOLOGIST

One of the results of Rush's lecture appears to have been: "A Course of Lectures upon the Comparative Anatomy and the Diseases of Domestic Animals," by James Mease, M.D., who was secretary, later a vice-president, of the Philadelphia Society. The introductory lecture of Mease's course, which was given in the winter of 1812-1813, was published in the *Memoirs* of the Society for 1814 and as a separate publication.

Mease (1771-1846) was a younger contemporary of Benjamin Rush (1745-1813), and while the two were friends and co-members of the Philadelphia Society, Mease did not hesitate to differ with his colleague when the occasion arose. Thus Mease's concept of rabies in 1792 was far more advanced than that of Rush in 1805. At the time, and for logical reasons, rabies was considered to be entirely a medical problem. Mease not only rejected the current concept of the spontaneous generation of the disease, but held advanced views on the contributions to the problem that might be made by a study of comparative pathology. On the other hand, Mease and Rush held almost identical views upon the need and means of increasing veterinary knowledge. Rush's manifold interests undoubtedly prevented his making more than

passing observations upon animal disease. Mease, perhaps stimulated by Rush's plea for investigation of animal disease on the part of physicians, actively worked in the field of comparative pathology for more than thirty years. In addition to his contributions in this area, Mease also published papers in the Society *Memoirs* on such diverse subjects as pine forestry, smut in wheat, manures for clover, varieties of wheat, and thorn hedges, but his contributions of greatest interest and value are those on animal disease.

Veterinary Medicine vs. Farriery

In his introductory lecture upon comparative anatomy and diseases of animals, Mease thought it "very probable that a part of my hearers are entirely unacquainted with the subject upon which I am to lecture, and even with the meaning of the words '*Comparative Anatomy*.'" In explaining his subject, he says that one of his objects is "to point out its intimate connexion with Veterinary Medicine." The more widely read veterinary writers of the time had done little to enlighten their readers upon comparative anatomy; most of these works were little more than farriers' guides which placed primary emphasis upon cures. Little or no thought was given to the anatomy of the principal subject, the horse, much less to physiology or pathology, or to the diseases of other animals.

That Mease intended to approach his subject in an entirely different manner, a manner largely unknown in America, is evident from his statement:

A distinction must be made between veterinary medicine and farriery. The first is founded upon science, whereas farriery disclaiming any connexion with science, proves itself a mere practice, habit or routine, and as it rests on nothing regular or solid, so it must ever be variable. The course of veterinary medicine and farriery are indeed the same, but with this difference, that the former condescends to admit a guide, while the latter prefers to ramble at risk and hazard.

Among the advantages which have resulted

from a study of comparative anatomy, Mease mentions the elucidation of the structure and function of man, and the improvements in surgery resulting from experimental investigation. And:

Comparative anatomy is as essential to the successful practice of veterinary medicine, as a knowledge of the structure of the human body is to the cure of the diseases and accidents incident to mankind. It is owing to a want of this knowledge of their structure, that our useful domestic animals are so mismanaged by farriers, and pretenders to animal medicine; and that diseases, trivial in their nature, or that slight surgical cases often end in death, or lameness, which might have been easily prevented by a scientific treatment.

Such ignorant practices as giving the horse when sick "the drench from a horn, whether the disease be pleurisy or colic," will:

necessarily continue so long as veterinary medicine is not studied scientifically, or until medical gentlemen cease to think it beneath their notice; and I may add, until the owners of fine horses will by pecuniary rewards, encourage men of respectability and knowledge to engage in its practice.

The proper plan of study, he adds:

requires a leisure and education, far beyond the capacities and circumstances of those to whom the care of our animals has been hitherto abandoned . . . we might suppose, that a greater degree of judgement and penetration are requisite for the physician of animals than of mankind.

Status, Then and Now

Mease points out that in ancient times: "Veterinary medicine was esteemed among the most important objects, and worthy of the consideration of an inquiring mind." Not only did eminent physicians of times past practice upon man and beast without discrimination, but later, when veterinary medicine had been far outstripped by its parent science, the leading medical minds were less apt to disparage the values of animal medicine than were the lesser lights in surgery and medicine. Even so, it was not until long after the establishment of schools

of veterinary medicine in late eighteenth-century Europe that public opinion toward veterinary medicine began to be more favorable.

Recognizing that a separate system of veterinary schools could not come into being before there was a public acceptance of the distinction between farriery and veterinary science, both Rush and Mease urged the acquisition of veterinary knowledge by medical men. Mease says:

If we consider the present state of animal medicine in this country, under its appellation of farriery, we see it in as deplorable a situation, as was the art of medicine, during the barbarous ages, when the gross ignorance of its professors brought disgrace upon the art itself, and when many diseases, which now yield readily to judicious treatment, raged without control; yet that the veterinary art, like human medicine, in the hands of a judicious person, is made respectable, we may see by the example of ancient times, and by the present example of several nations of Europe. . . .

It remains for this country . . . to follow those examples; and by advancing the art to a height as yet unattained, to make amends for the neglect we have hitherto shown it. Indeed I am persuaded that in a short time the public attention will be called to the subject, and that men of education will think it no derogation from their medical character, to become acquainted with the diseases of cattle, or to lend their aid in the removal of them when required.

In recommending the study of animal disease to the rural practitioner, Mease says, "The veterinary science offers a new and respectable means of employment to its professors," and this will not only be the means of "extending the sphere of his utility, but his personal consideration" as well. As a practical example of the debt of medicine to such study, he cites the case of John Hunter, who not only fostered the establishment of the Veterinary College of London (1791), but also attended the practice of the college infirmary upon occasion. It was his observation of phlebitis following the bleeding of horses, and the dissection of the veins of affected subjects, that led Hunter to the seat of the condition in similar cases in man.

In response to an inquiry, Mease wrote in 1816:

I cannot recommend any book on the diseases of cattle. I have read every one that ever was published in English, and am disgusted with the absurdity and inhumanity of the practice they advise. In the northern states our cattle are, fortunately, healthy, if justice be done to them. In the southern states, the chief diseases they are subject to arise from shameful neglect and poverty; and until a planter makes up his mind to house his cattle in storms, and supply them with plenty of wholesome juicy food, it is better that he should not have medical books, as he will pester the animal with drenches instead of good hay, pumpkins, turnips, potatoes, and corn meal. In the winter of 1813, I gave a course of lectures on the diseases of domestic animals, with the hope of exciting the attention of medical gentlemen to the subject. . . . I hope the trustees of the University will establish a professorship of Veterinary Medicine, when I will furnish the person appointed, if desired, with the result of my researches on the subject.

Mease on Mad Dogs

On the subject of rabies, Mease, who had in 1792 made the first real contribution to this problem in America, stated: "it still continues to humble the pride of the medical profession." Mease rejected all of the commonly accepted causes of rabies in the dog, particularly that of spontaneous generation and the redoubtable "worm under the tongue" (lyssa) claimed by innumerable authors since Pliny. Concerning the latter cause, Mease states: "The idea of a worm is utterly false, no such thing exists." While Mease's statement leaves some doubt that he knew of the existence of the fibrous lyssa in the tip of the dog's tongue, the history of rabies would have been saner had this structure escaped notice altogether. Generations of hardy practitioners had removed the lyssa from healthy dogs as a preventive, and from rabid dogs as a "cure."

Unlike some of his medical brethren who claimed to cure human hydrophobia, Mease states emphatically that the disease has never been cured, but

We must not despair; for I cannot think that Providence has determined to permit this disease to be *forever* incurable, and can any

more powerful argument be adduced for investigating the diseases of domestic animals, than the knowledge of this fact, that all of us are every day of our lives liable to the attack of an awful and incurable malady from one of them?

Mease gives a summary of the important outbreaks of epidemic diseases among domestic animals in America, and suggests that by a greater knowledge of them we might be led to anticipate fatal epidemics and provide the means of guarding against them.

"I shall demonstrate"

There seems to be no record of the other lectures delivered by Mease, other than evidence that he did advertise: "lectures will be given every Tuesday, Thursday, and Saturday afternoon at half past three o'clock" during the winter of 1812–1813. In his introductory lecture, he states that it is his intention to adopt the following plan:

1. I shall demonstrate the structure of different animals.
2. Explain the use and functions of the several parts, and compare them with those of the human body.
3. Point out the causes, nature and symptoms of diseases in our domestic animals, with the method of cure.
4. Give the natural history, operations, and doses of medicines.

In summary, he says:

From this plan it will be seen, that farriery, strictly so called, or what relates to the fashionable operations on a horse, makes no part of the course. By thus separating the scientific from the merely mechanical part, the veterinary science will be at once put in a condition to go hand in hand with human medicine.

Mease recognizes the propriety of teaching the proper methods of shoeing the horse, but his insistence upon the separation of the scientific from the mechanical aspects of the art was largely forgotten by later veterinary educators until long after the heyday of the horse.

What the immediate effects of Mease's lectures may have been would be difficult

to determine. Certainly they were the first efforts in this direction in America. There would seem to be little doubt that his lectures stimulated a continuing interest in animal diseases on the part of members of the Philadelphia Society. Inasmuch as practically all of the early promoters of a veterinary profession in America were associated in some way or another with the Society, it would seem a safe assumption that Mease's lectures had some influence in moulding veterinary perspective.

Texas Fever

In his introductory lecture of 1813, Mease mentioned the fact that he had investigated a fatal cattle disease in 1796, the particulars of which "I shall hereafter detail." The one fact, and an important one, he mentions in the body of his lecture is that the reservoir of the disease was a small area of South Carolina, and that apparently healthy cattle from this area infected all others with which they mixed in being driven north. He says:

A singular fact attending this disease is, that the cattle alluded to, have the power of infecting others with which they associate, while they themselves are in perfect health.

The existence of the disease, later designated as Texas fever had been reported as early as the 1760's, and in 1766 the colony of North Carolina had passed laws to control the movement of cattle from South Carolina or Georgia. Mease's investigation of 1796 and his report of 1814, however, are the first scientific contributions on the subject.

While Mease did not identify the tick as a vector in spread of the disease, his identification of immune carrier cattle was largely forgotten until scientists of the Bureau of Animal Industry began a frontal attack on the problem in the 1880's. In the open-minded spirit characteristic of the true investigator, Mease did not discount the value of observations made by those closest to the problem; his identification of immune carriers was based upon informa-

tion which had been told him "by an intelligent drover." In a similar vein it was the faith of the veterinarian, Fred Kilborne, in cattlemen's observations on the tick that led him, in spite of professional ridicule, to the final incrimination of the tick.

In an article in 1826 on "An Account of a Contagious Disease Propagated by a Drove of Southern Cattle in Perfect Health," Mease reported his earlier observations on symptoms and epizootology in great detail, thus providing an invaluable first chapter in the written history of Texas fever. By this time the disease was widespread in eastern Pennsylvania, and was commonly denoted as the "bloody murrain" inasmuch as "some discharged bloody urine, others bled at the nose." Mease continues:

Upon being opened, the kidneys were found inflamed, and sometimes in a state of suppuration, and the intestines filled with hard balls. I prescribed strong purgatives. To one I gave two ounces of calomel, in sweet oil, on the second day of the disease, but without producing any evacuation. Bleeding was tried, without success. The blood was in a state of decomposition, and did not coagulate. As a preventative I recommended smearing the nose, horns, forehead, hoofs, and tail with tar, to counteract the contagion of the disease, by creating an artificial atmosphere around the animal, and also the obvious expedient of an entire separation of the old stock from the strangers. None of the southern cattle died. . . .

The useful deduction of which the foregoing statement admits, is a caution in respect to the mixing northern and southern cattle, without the performance of a kind of quarantine by a strange drove, before they are permitted to associate with the stock already on the farm.

Mease makes it clear that the southern cattle were confined "for one night in a ploughed field," and that the northern cattle which became affected "had no intercourse with the drove." With additional observations of similar instances, it might be supposed that a logical thinker such as Mease might have arrived at the deduction that some intermediary agent, in this case the cattle tick, must have been operative in producing the contagion. At this time,

however, the tick had not been recognized as more than a minor depredator in its own right. In the absence of knowledge of the real cause of the disease, it is not surprising that Mease's treatment of affected animals, although based upon accurate post-mortem finding, would avail little, particularly in arresting the contagion. As health officer of the port of Philadelphia, however, Mease had demonstrated sound principles of quarantine in dealing with yellow fever; segregation similar to but more stringent than that suggested by Mease was the only effective means of arresting the spread of Texas fever before the role of the tick was fully elucidated.

Ergotism

In addition to having made the first scientific observations upon rabies and Texas fever, Mease also may be credited with being the first American to identify ergot poisoning among domestic animals. While Mease in his report of 1826 "On the Hoof Disease from Eating Hay Affected with Ergot," credits a Dr. Arnell with having made a similar observation in 1820, Mease's own observations go back to 1803. He states that cattle which ate hay infested with ergot "became affected with a disease in their hoofs, causing them sometimes to drop off." Concerning Arnell's description of the disease, Mease says:

The facts detailed by him, leave no doubt of the deaths of numerous cattle in his vicinity being caused by their eating hay made from some grass that was affected with the species of ergot, observed in the produce of the meadows before mentioned.

Had the observations of James Mease been made during a time of great activity in the field of veterinary investigation, not only would he still have been a giant among men, but his contributions would have received just recognition. Because of the lack of interest in animal disease during Mease's lifetime, and for some decades later, no appropriate vehicle for the reporting of observations upon animal dis-

ease existed. Due largely, perhaps, to the increasingly metropolitan character of the city of Philadelphia, publication of the *Memoirs of the Philadelphia Society for Promoting Agriculture* was suspended with the volume of 1826. Thus the veterinary contributions of Mease were buried in a once respected, but later little-remembered tomb, until they were resurrected recently by Bert Bierer in his *Short History of Veterinary Medicine in America* (1955).

PETER BROWNE, PROFESSOR

In 1837, Peter Arrell Browne, a lawyer and professor at Lafayette College, Easton, Pennsylvania, published:

An Essay on the Veterinary Art; Setting Forth its Great Usefulness, Giving an Account of the Veterinary Colleges in France and England, and Exhibiting the Facility and Utility of Instituting Similar Schools in the United States.

This essay formed the basis of an address to the Philadelphia Society on January 23, 1838 and was published in the *Cultivator* the same year. He also sent the essay to the president of the British Veterinary Medical Association, and abstracts from it were published in the *Veterinarian* in 1839, in connection with which the editor stated:

This, indeed, is erecting a veterinary school on a noble foundation. That it may fully answer the expectations of those to whom it owes its birth, is our ardent wish.

This implies, as did Browne's pamphlet, that the school—Rittenhouse College—was in operation. While such a school was chartered in 1850, this had no connection with Browne's scheme, and it is evident that Browne's institution existed only on paper. His concept of what constituted an adequate system of veterinary instruction, however, is worth reproducing at some length. Browne states that while the college was formed to give instruction in literature and science:

there is now attached to it a separate department for teaching, theoretically and practically,

the following branches of useful knowledge:

1. The different *species* and various *races* of the domestic animals.
2. The breaking, educating, training, and fattening certain domestic animals.
3. *Commercial jurisprudence* as regards domestic animals.
4. The study of the outward forms of domestic animals . . . [and] the indications of their *age*.
5. The internal structure of domestic animals — their *anatomy* — their *comparative anatomy*, and the most humane and economical use of their *strength* and *speed*.
6. The various medicines used for the nourishment of different domestic animals.
7. The various medicines required for domestic animals — the most approved methods of *raising*, *curing* and *preserving* those that are *botanical* — a general knowledge of those that are *mineralogical*, together with the manner of *mixing*, *preparing*, and administering both.
8. The most effectual methods of *preserving* domestic animals from *disease*, and curing those that *contract disease*, together with the methods used to prevent contagion and infection.
9. The *accidents* and *injuries* of domestic animals, and the *surgical operations* that are required.
10. The most approved methods of *shoeing*, either generally, or when the animal is diseased or lame.

For these purposes, Browne says, “there is . . . a theatre for lecturing, a museum, a library, a dissecting room, a forge, hospitals, sheds, &c.” In addition to a director, there were listed four professors — anatomy; botany; chemistry and pharmacy; and pathology, surgery, and farriery — in addition to four other teachers, a head farrier, librarian, and attendants. Inasmuch as Browne remained active in civic affairs for another twenty-five years, it may be presumed that he had ample time to reflect upon his somewhat premature announcement.

Although the agricultural journals had been alluding to veterinary medicine — rather than farriery — for a number of years, the editor of the *Cultivator* in printing Browne’s essay in 1838 observes:

As it is not generally understood what is implied by the term veterinary art, we make

the following quotation from Dr. Brown’s essay by way of explanation.

After defining “Science” and “Art,” Browne had explained:

The VETERINARY is a SCIENTIFIC ART in the strictest sense of the term. . . . Veterinary comprehends a knowledge of the external form, as well as the internal structure and economy of domestic quadrupeds, the appropriate management of them, and the nature, causes and cure of their diseases.

In giving the subjects detailed by Browne as belonging to the veterinary art, the editor states: “Such are among the important and useful studies which would be taught in an agricultural school.” To support the veterinary department of his school, Browne proposed to raise a subscription of \$50,000 in shares of \$50 each, and to extend certain privileges to the subscribers, as had been done by the London Veterinary College. Those who have recently opened new schools of veterinary medicine will be interested to know how Browne expected to spend the \$50,000:

He estimates the cost at \$47,500, viz. 125 acres of land, at \$100, making \$12,500, buildings \$30,000, and library and apparatus \$5000.

Thus a tidy \$2,500 would be left for unanticipated expenses.

New Venture in New York

There is little doubt that the editor of the *Cultivator* (Albany), Jesse Buel, who was an eminent agriculturalist, expected veterinary medicine to develop as an appendage to agricultural education. In addition to his remark above, an article printed the same year concerning a proposed agricultural school for New York State leaves no doubt on this issue: “The chief object of the school should be to form practical mechanics . . . veterinary surgeons and practical agriculturalists.” One of six professorships was to be “Comparative Anatomy and the Veterinary Art”; liberal studies were to be the province of the preparatory schools. At the end of the

second year of more general studies, six of "the most distinguished pupils," apparently one for each professor, should be selected to serve as "adjunct professors." In return for free tuition, these were to assist the professor and coach the dullards. During the third year of "special" studies, the students:

should be actively engaged in the kinds of business for which they design to prepare themselves . . . under the direction of the professors of the branches they pursue.

The library should include: "books on the veterinary art," and the farm should have: "an hospital for the reception of sick animals and for veterinary practice." Whether these student veterinarians were to be turned loose on the countryside is not made clear, but it is possible that such a system would produce a fair number of hospital cases within its own fences. Later it is stated:

There are more quacks in the veterinary art, than in the profession of surgery; and it therefore stands the intelligent breeder in hand, to qualify himself to become, in some measure, his own cattle doctor.

In fairness to Buel, however, in reference to an inquiry about animal disease, he states:

We are not skilled in the diseases of cattle; and we are satisfied that we are suffering immense losses annually, in the death, by diseases, of our domestic animals, which might be avoided, had we schools, like those of Europe, to teach and promulgate correct knowledge in the veterinary art.

And elsewhere he prints a contribution from a Britisher, who states: "The cure, it has been hinted, must generally be left to the veterinary practitioner in the complicated diseases of the horse." With precious few qualified veterinarians in the United States at this time, it is likely that the plan espoused by Buel would at least have been some improvements on the *status quo*.

OTHER PHILADELPHIA FRIENDS

A number of scattered articles on animal disease in addition to those mentioned above appeared in the *Memoirs* of the Philadelphia Society in the five volumes published from 1808 to 1826. The irregularity of publication, however, would suggest that the time was not ripe for a bona fide agricultural journal. In the first volume there was reported a method of "Cutting off the horns of Bull Calves" by means of a sharp gouge "when a calf is about a month old, and the horns have risen above the skin."

In an article "On Sheep and their Diseases," a correspondent reports that he had observed "the worm in their head," which he supposed to be caused by the "sheep bee," and for which: "I know no cure." To prevent the condition he smeared their noses with tar. On intestinal worms, he mentions:

I frequently find the tape worm, to the number of four or five, in one sheep, and four or five yards long. I lately killed a lamb with eleven: the animal was fat: these seem to be least injurious to sheep, as those in which I have have found them have the fewest knobs on their bowels.

Those which cause "knobs," he says are more injurious, but less so than the "small round worms, about one inch long." He notes: "sheep are much more healthy here, than in England," but reprimands American farmers for not docking their sheep, "hence they often dislocate their spines, and render their limbs paralytic, by the violence with which they frisk their tails when affrighted."

In 1814, a physician, who apparently did not disdain attending livestock, necropsied several sheep belonging to a patient, who had lost 30 of 300. He found "an effusion of water around the lungs," together with "considerable inflammation of the membrane lining the thorax." He prescribed bleeding and purges, which apparently resulted in the recovery of a number. He also mentions "an inflammatory sore throat was epi-

demic among the horses throughout this country," and attempted to relate it to an epidemic of "hooping cough" in man.

Sheep Problems

In a lengthy communication "On Merino Sheep" in 1814, a correspondent from New Jersey states that he has had experience with worm in the head, prolapse, abortion, cholera, and foot rot. The worm in the head, he says:

did not come into much notice, until the last summer, when a considerable alarm was excited among merino-men by its discovery, but their fears were chiefly groundless, for they are now found to exist in a greater or less degree, in the heads of almost all sheep, producing for the most part but little inconvenience and very rarely death.

He suggests trepanning the frontal sinuses and picking the grubs out with tweezers, which he says is neither difficult nor dangerous, or causing the animal to sneeze by blowing sulfur fumes up the nostrils.

A New York correspondent to the *American Farmer* in 1823 says, "It has been but a few years since worms have been discovered to breed in the heads of sheep, though it is probable they have, from time immemorial." Unlike his New Jersey compatriot, however, he contends: "these grubs do more injury to the sheep of our country, than all the diseases with which they are afflicted." He gives a good summary of the life cycle of the sheep bot, and recommends injecting a suspension of snuff and asafetida up the nostrils.

On a related matter — that a parasite with a life cycle as simple as that of the common horse bot should have defied identification of its adult form and the mode of infection for so long, is perhaps less surprising than the fact that a considerably longer time was required for this information to become common knowledge. As late as the early nineteenth century, there were those who had had the opportunity to learn differently who believed

in the spontaneous generation of bots in the stomach of the horse — despite a proper appreciation of the facts of life concerning the sheep bot. The concept of spontaneous generation of lower animal forms, of course, was not dealt a final death blow until the work of Pasteur and others in the late nineteenth century was accepted.

Dunghill Dialectic

It is of some interest, therefore, to note an article in the *Cultivator* for 1841. Being unsigned, it presumably is authored by one or both editors, Willis Gaylord and Luther Tucker, but the information is taken from other sources. The article concerns the "eyeworm," *Filaria*, of the horse, a specimen of which had been found by a Dr. Lee of New York. After giving a good description of the parasite, a number of other parenteral forms are mentioned, following which there is a lengthy dissertation on their origin:

Perhaps the origin of these parasitic animals is one of the most difficult questions to solve, belonging to animal physiology. . . . Writers on this subject are at this time divided into three classes, those who advocate the doctrine of *spontaneous generation*; those who maintain that these worms, &c. "are produced by some living process or function of the organism" [flukes were still held by some to be the *result* rather than the cause of sheep "rot"] . . . and those who attribute the origin and presence of worms, whether intestinal or visceral, in all cases to ova.

The writer discounts either of the former theories as: "admission that we do not know how else it could be produced." And if spontaneous generation were a reality:

We should expect occasionally to see a man, a quadruped, or a bird, spring up from some dunghill or fermenting vat. . . . The old doctrine then, which attributes the origin of all vitality, to an egg or germ, is not likely to be falsified in this case. . . . It is probable that . . . by circulation in the blood, the ova of the filaria reached the eye of the horse, where, finding suitable food, it remained until it reached adult size.

Prolapse of the vagina, as a concomitant of difficult parturition, the Jersey sheepman says, is "oftentimes very troublesome," and while there had been many cases in his flock, he had lost only one — in which "the cesarean operation was successfully performed by killing the ewe to save the lamb." Prolapse prior to parturition:

may generally be reduced by raising the animal up by the hind legs, and shaking her well . . . and to use a few sutures to prevent a recurrence. . . . I have recourse always to the lancet, both as a remedy and preventive.

Prolapse of the uterus he associates with abortion. The latter he attributes to high feeding, having lost lambs from 15 of 25 ewes suffering from "too much blood." Following this loss, he practiced bleeding to the extent of a half-pint taken from the external jugular vein.

"A new and most alarming disease," causing purging and loss of appetite, and which for lack of a better designation he called "cholera" was traced to overfeeding on corn, but was confined to ewes which had recently lambed. Death was rapid: "the unexampled rapidity of its progress allowed no time for the operation of remedies." Another "new" disease in his flock was foot rot, which he says, "is certainly not contagious, [and] may safely be attributed to wet pastures." He says he has never known it to affect native sheep, or foreign coarse-woolled sheep; nor were either affected with scab.

Other Matters

On the matter of urine, Peters states in 1818:

It is asserted, that it is preferred by Horses and Cattle to Salt; and is, to them, salutary as a medicine, as well as a condiment, promotive of health, and consequent profit. . . . Many years ago, a German woman kept Cows, in a town in Maryland . . . [which] were remarkable for their goodly appearance. . . . Envy was excited: and she was narrowly watched. At length it was discovered, by her rivals, that she daily emptied the contents of

the Urinal, into the food of her Cows. She acknowledged this to have been the magical cause of the superiority of her Butter and Cream. But when the secret was discovered, she could sell no more of the celebrated articles.

Several articles on "Hoven Cattle" appeared at various times, following that by Peters in 1808. In 1811 a correspondent takes Peters to task for supposing that the gas was contained in the abdominal cavity — a common fallacy perpetuated since the days of John Fitzherbert's *Boke of Husbandrie* (1523). The advantages of the trocar and cannula are given in detail in the same volume, and of the stomach tube in 1818.

An early experimental approach to the problem of excessive salivation in horses, later a cause of great concern, was reported in 1811. The writer, believing the spotted spurge plant to be the cause "of the salivation that has occurred so frequently among horses," fed some on repeated occasions to his horse, whereupon:

A preternatural discharge of saliva took place in less than half an hour . . . I think it extremely probable, that the plant in question is the general cause of the salivation in horses.

In the final volume of the *Memoirs* (1826) there is an account of the "Dissection of a horse, whose death was occasioned by perforation of the Aorta by worms," by Richard Harlan, M.D. The abdomen of a year-old colt, the body of which was sent to Harlan by a friend, was found to contain two bucketfuls of blood, which had come from a ruptured sac surrounding the aorta. In this early report of verminous aneurism, the doctor states:

We discovered the cause of the whole mischief, viz. a great number of small worms, from a quarter to three quarters of an inch in length, attached to the internal coat of this portion of the artery; giving it truly a worm-eaten appearance.

In the one article on diseases of swine appearing in the *Society Memoirs* (1811), the author notes that this is a subject:

that few writers have thought worth while to notice . . . a subject on which it has either not been *fashionable* to treat, or perhaps from the mistaken idea “that the hog like the miser, can do good only when he dies.”

Among his hogs, of which he kept up to 250, he says the “staggers” was most troublesome, causing death of several at a time, and in less than a half-hour after symptoms appeared: “They were immediately bled under the ear and at the tail . . . a few recovered, but a greater number died.” This was until 1803, when an acquaintance gave him a British work of 1706, which advised cutting a “bare knob in the roof of the mouth,” allowing it to bleed, and then giving the hog urine to drink. The success of this procedure was such that “where I used to lose six I do not now lose more than one.” And in 1807:

an epidemic . . . raged among the swine throughout this part of the country . . . the people in the neighborhood called the disorder the *sore throat*. — A hog would come up to the trough, eat, apparently in good health, and in ten minutes after, be dead.

Nothing could be found on post-mortem examination. By accident it was discovered that feeding on clover would prevent the disease: “in consequence there was neither staggers or sore throat among them; no sickness and no deaths.”

WILLIAM CARVER, PRACTICAL HORSE FARRIER

In 1818 William Carver published his *Practical Horse Farrier; or, The Traveller's Pocket Companion* (Norristown, Pennsylvania). The title continues:

Shewing the best method to preserve the horse in health; and likewise the cure of the most prominent diseases to which this noble animal is subject, in the United States of America. The whole being the result of nearly forty years' experience, with an extensive practice.

Except for the reference to the United States, the title page reads much like any of a number of previous works, British or

American, which promised much, but delivered little beyond a rehash — or outright reprinting — of what had been offered before. Frequently a claim to years of experience might be deduced to mean experience in digesting other men's works; many were armchair compilations. Carver, however, appears to be a notable exception, for there seems to be no question that his book is literally the product of long experience, and while he acknowledges the influence of a number of British writers, much of his writing is in the first person in the form of his experiences in American practice. This latter feature makes the book doubly valuable in the present instance, for many early American works give no indication of the prevalence in this country of the conditions treated in the text.

In his preface, Carver says:

The author . . . is aware that his work will meet with objections, on account of there having been many large volumes published on Farriery by men of science, who were acquainted with the dead languages . . . [but] those languages only serve the purpose of those who wish to keep the world in ignorance. . . . The reader may think that I am an enemy to science and a friend to ignorance — but the case is otherwise. I should feel myself happy to see science flourish, stripped of her garb of mystery and quackery. . . . I have been an eyewitness to the dreadful effects of the ignorance of those who have undertaken to doctor the horse, both in this country and England. . . . I am certain that there are persons in this city [New York], who undertake to doctor the horse, that cannot either read or write their own names — and consequently know nothing of the quality or power of medicine . . . they cannot consult the state of the blood of the horse . . . or know how many times the pulse beats in a minute, in order to judge of the state of the animal, they pretend to cure.

On shoeing, he continues:

I have attempted to describe the best method that I have discovered, in thirty years' practice. . . . I have witnessed the dreadful, and the most evil consequences, of horses being placed in the hands of unexperienced shoers in this city. I have known smiths to open shops, and undertake to shoe horses, who never had shod a horse in their lives; and the result has been,

PRACTICAL
HORSE FARRIER;

OR,

The Traveller's Pocket Companion.

SHEWING

**THE BEST METHOD TO PRESERVE THE HORSE
IN HEALTH;**

AND

*LIKEWISE THE CURE OF THE MOST PROMINENT DISEASES TO
WHICH THIS NOBLE ANIMAL IS SUBJECT, IN THE
UNITED STATES OF AMERICA.*

**The whole being the result of nearly forty years' experience,
with an extensive practice.**

*To assist great nature in her wondrous plan,
Should be the study and pursuit of man.*

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Much enlarged, and embellished with three engravings

BY WILLIAM CARVER, FARRIER,

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PHILADELPHIA:

PRINTED AND PUBLISHED BY MCARTY & DAVIS,

South East corner of Nass and Ninth street.

1820.

Carver's *Practical Horse Farrier*, Norristown, 1818, was an early work based on broad experience, keen observation, and sound judgement.

that the feet have been ruined. . . . I would not permit three fourths of the smiths, of this city, to take off a single shoe from my horse's foot, was I not present at the time.

Critic Carver

On the matter of criticism of others, of course, Carver did not differ from his predecessors; most works of the time were fair subjects for criticism. But most of these overly censorious critics had little real basis for their criticism — having little better to offer in its stead. Undoubtedly, many had a base motive in doing so — the sale of their own work. On this matter, however, Carver says:

I have not written this small treatise with a view of deriving any pecuniary advantage, as I am now arrived at an advanced period of life . . . my only object is that of being useful to those who are in possession of that useful animal, the horse. . . . Although there are a great number of horses kept in this city, I do not find one citizen that makes the economy or welfare of the horse so much his study that he might examine this work, or to whom I might dedicate it. I therefore dedicate it to the public at large, leaving them to judge of its merits, and my experience or veracity.

Unfortunately, Carver was quite correct in his appraisal of the numbers of men in his fair city who had made an adequate study of the horse. Moreover, his writing vindicates his claims concerning his own experience and veracity. On the matter of practitioners unable to read or write, when nongraduates were permitted to register under the first practice act in New York in 1886, more than one, of necessity, did so by “making his mark.”

Little is known of Carver's personal life beyond what is contained in incidental passages in his book. It is obvious that he had experience in both England and America; it is apparent that he was British-born and came here some considerable time before authoring his book. Just when he might have come to New York — which he calls “this city” — cannot be determined with any degree of accuracy; he speaks of cases he had attended in “this city” in the past few

years, but his residence probably dates to some time earlier, perhaps to the turn of the century. He speaks of “a Mr. Clements, a farrier in this city,” and mentions referring cases to him “on hearing of his presence in the city.” This individual undoubtedly was J. Clements, a London graduate, who came to New York in 1804. Carver's wording strongly suggests he was in practice here before Clements arrived. What may be a more precise indication is his statement that he had attended several horses belonging to a gentleman who “arrived in this country about twenty years ago” (*ca.* 1800).

The Carver Clan

The name of Carver is most closely associated with the person of James Carver, a London graduate of 1815, who published two issues of his ill-fated *Farrier's Magazine* in 1818, and conceived the idea of a veterinary college in Philadelphia. James was the son of another William Carver, whom the author identifies as “a countryman of mine, from England, and one of the best farriers that ever came to this country . . . a man of sound judgment, and long experience. We went hand in hand in all difficult cases.” The author also states:

Attempts have been made to establish a Veterinary College in the United States, but all to no purpose. An institution of this kind could not fail to be of the utmost utility and importance, in cultivating that valuable science, veterinary surgery; but at this time, it appears to me impracticable. Mr. Carver [father of James], some time since attempted to effect the establishment of one in New York, but failed in the accomplishment of his object; I presume his son recollects the circumstances and the futility of his efforts.

Author Carver also speaks of:

my friend, Mr. James Carver, veterinary surgeon, from the Farrier's college at London . . . I have perused, with considerable interest . . . [his] work on Farriery, and am clearly of opinion that his doctrines are sound. He reasons like a man of experience and sound judgment. I should like to hold a correspondence

with him [James resided in Philadelphia]. His father and myself were as intimate as brothers, and I regret the loss of his friendship and associations.

This digression may serve to place the name of Carver in proper perspective in the annals of American veterinary history. As an examination of the *Horse Farrier* should suggest, it is its author, rather than the other William Carver — or even his son — that perhaps is the more deserving of lasting recognition for having made a definitive contribution to American veterinary medicine. At least William Carver, the author, has been more or less the forgotten member of the Carver clan.

Colleg'd Idiots

Something of Carver's character can be gathered from his writing, in particular, the principles which guided his practice. If he appears to be disdainful of graduate veterinarians, probably he had cause, for few of the early graduates of the London school distinguished themselves. Also, it may be presumed that it was the less, rather than the more, distinguished that would give up a lucrative practice in England for the uncertainties of America. In speaking of his unsuccessful attempts to treat bone spavin, Carver says:

I have many times since been applied to, for to cure the bone spavin, but declined the attempt. But on hearing of a Mr. Clements . . . who, it is said, is in possession of a diploma from the Veterinary College of London, and that he could cure the bone spavin, I advised those who applied to me, to take their horses to him: although I confess, that I did not place any more confidence in the talents of Mr. Clements, on account of his diploma, or his knowledge of the dead languages — as neither of these can give experience. During the course of my life, I have conversed with many college-bred gentlemen, who in my opinion, were colleg'd idiots. . . . If I myself am in possession of any diploma, it is a grant from the college of nature, and the credentials are, experience, reason, and common sense.

Mr. Clements, says Carver, pursued the same methods other practitioners used —

"and the horses still remained lame." Elsewhere he says:

There are many others who profess to have a thorough knowledge in veterinary surgery; overstocked with diplomas of which they boast, like coxcombs with their fine coats, and a little knowledge of the latin language; but I never saw them perform cures equal to this good old friend of mine [his namesake, William Carver].

As late as 1870, M. H. McKillip of Chicago said he had never seen a London graduate who was a proficient practitioner; they were "gropers and itinerants seeking new pastures, invariably banking on the M.R.C.V.S. rather than ability and character to distinguish them from the rabble." It should be emphasized that McKillip and, to a lesser extent, Carver had reference only to those graduates who had emigrated to America.

Nor should it be supposed that Carver was prejudiced against college training in veterinary medicine as such. As mentioned above, he thought, "an institution of this kind could not fail to be of the utmost utility and importance . . . but at this time, it appears to me impracticable." In retrospect, we would have to agree with Carver on the latter point; America was simply not ready to accept the idea of a veterinary college in 1818 — nor in 1850. Carver adds:

It has often occurred to me, that if a few young men in this country would turn their attention to the cultivation of this important branch of science, and make the veterinary art their study, they might become useful to the community and rise to opulence, by the profession. There are many who have good educations, and although there are no veterinary colleges in this country they might derive the necessary information from the study of the most celebrated authors. . . . By a proper application to these works, a young man, even of ordinary capacity, might in a short time become a proficient in Farriery . . . and acquire an ample fortune. It is by the study of those books, and an extensive practice that I have obtained a knowledge of the horse.

A New Broom

Like other intelligent men of the time, Carver had long since disposed of the buga-

boo of superstition. Hobgoblins, however, ran rampant in the minds of many of the less enlightened. Carver relates:

I recollect, a few years past, to have been called by a respectable Dutchman in this city, to see his horse, that had the mad staggers. He said to me, Mr. Carver, mine horse is bewitched—I suspect the person who has done it—I have some very bad neighbors. I laughed at the ignorance of the man, and his belief in ancient superstition! For my own part, I have long since discarded from my mind, witches, hobgoblins, and ghosts of all kinds: having swept them away from my brains, with the besom [broom] of thought! I drove the old lady, the witch, out of my employer's horse—but the poor animal lost the sight of one eye. This I did not attribute to my friend's old witch, but to the malignity of the disorder.

Carver's work follows the typical pattern of most others of the time with regard to the subjects treated. In general, his methods of treatment can be considered simple and moderate, certainly less contrary to nature than those of most of his contemporaries. His rationale obviously is influenced by James Clark, a worthy preceptor, and one of few practitioners fit to be followed. Carver says:

It should be observed to give horses as few medicines as possible, and not to follow the ridiculous custom of frequently bleeding and purging, when the horse is in perfect health. Proper dressing, feeding, and exercise will alone cure many disorders, and prevent most. . . . Having visited many stables in this city, I have found many stalls where horses have stood in their dung, to the thickness of six or seven inches, which I could attribute to nothing but the indolence of those that had the care of horses committed to them.

The custom of driving horses with blankets on them, he likewise says, is a pernicious practice: "If nature . . . had destined the horse to wear blankets, she would have sent him covered with them!"

Local Diseases

While it may be supposed that Carver's writing is directed principally toward diseases as he has seen them in America, it

is those which he specifically mentions as being frequent here that are of greatest interest. Obviously, many of the descriptions of conditions in British reprints, or British inspired works published in America, had some utility, but there is no way of knowing to what extent these conditions prevailed here. Thus Carver states:

Pleurisy, and inflammation of the lungs, is a disorder that horses are much subject to in this country. I have frequently found, by examining the carcasses of dead horses, different kinds of inflammations on the pleura.

His treatment for the condition, for which he gives symptoms adequate for diagnosis, is the commonplace bleeding, blistering and purging—with reasonable restraint. And:

Strangles is a distemper to which colts and young horses are very subject . . . [but] I have known horses, in this country, that have been eight or nine years old, to have this disorder, which I never saw in England.

Vegetable poultices on the throat and purging are recommended: nothing is said of the contagious nature of the disease. Glanders and farcy, contrary to the teaching of the London school, he recognizes as contagious; in glanders:

The horse should be dispatched as quick as possible, for fear of the contagion spreading; besides, no other horse should be permitted to stand in the same stable with a horse in this situation.

Upon being applied to for a cure:

I have recommended the owner immediately to give the horse a leaden ball through his heart or brains; and I always looked on it as folly for an author even to write on it, or prescribe any cure.

Farcy, however, which he has been highly successful in treating: "is also a distemper to which horses are much subject to in this country; and which perhaps has called forth as much, or more of my practice, than

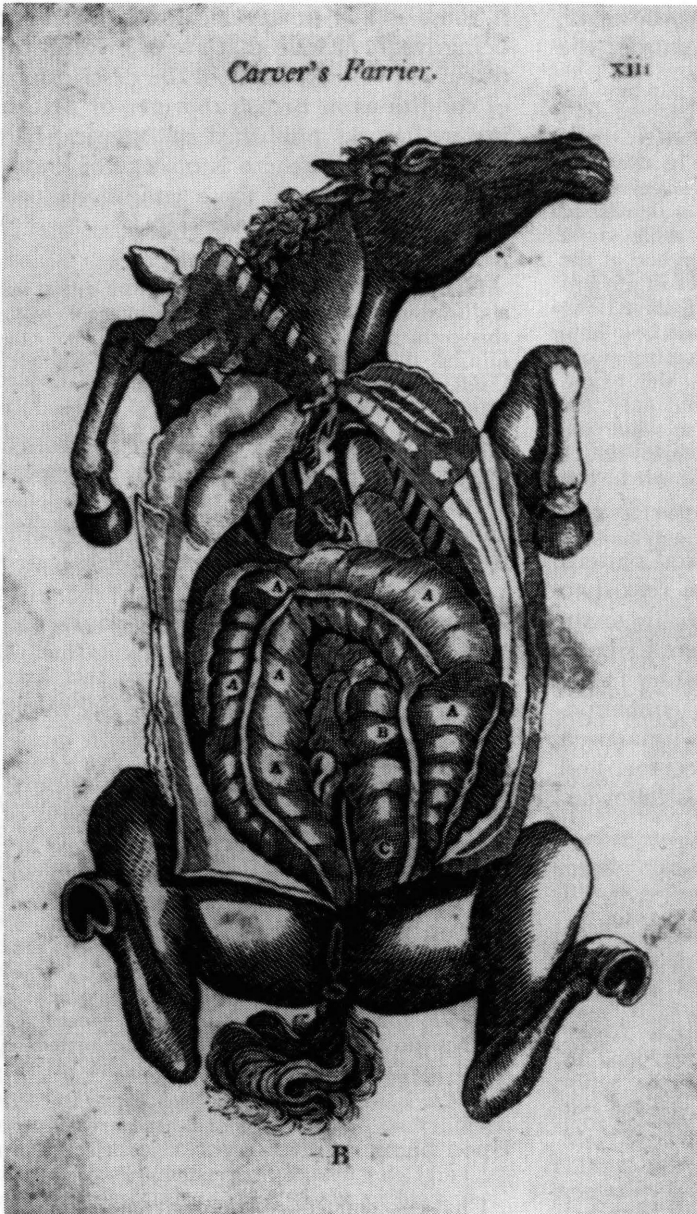


Illustration of the viscera of the horse, from Carver's *Farrier* (1818). The original plate is from Ruini's *Anatomy of the Horse*, 1598, much copied by later authors.

any other disorder." A major difficulty, he finds, is with horses at some distance:

as proper regimen, exercise, and good nursing, are very essential in performing a cure. The practitioner also has other evils to encounter, as he is seldom applied to until a variety of nostrums have been given the horse, which he has to encounter and counteract, as well as the disease. . . . Besides it is expected that he be

almost possessed of supernatural powers, so as to raise the dead to life—or perform an instantaneous cure. And his employer is not acquainted with the danger to which he is exposed, at the time he is practising on this powerful animal. Neither is he acquainted with the quantity of medicine that the horse requires, or the expense of those medicines. . . . On account of the high price of drugs . . . I have been obliged to substitute medicine of a

cheap quality, and to omit those that would have had a far better effect: for gentlemen in this country do not pay that respect to a valuable horse, that the gentlemen in England do.

These woes of the large animal practitioner, as many of this brotherhood could attest today, were not peculiar to the early nineteenth century.

With regard to bots, one of the major problems at the time, Carver urges:

It would be both needless and useless to insert all the nostrums that have been recommended to destroy worms and bots, that reside in the stomach (and intestine) of the horse.

For bots, which he says are the most mischievous, he gives milk and molasses followed by a purging ball — “in some cases with good effect.” He censures Clements for claiming — as taught at London — that:

a horse was never known to die with the bots . . . almost every superannuated old woman knows that the bots destroy numbers of fine horses . . . so much for theory and a diploma.

“Locked jaw,” says Carver,

is a disorder, that has hitherto baffled the art of the physician, and also the power of medicine to cure, either on man or beast. . . . In the course of my practice, I have had a great num-

ber of horses under my care, that have had, what is generally called the stag evil [from the arching of the neck], or lock jaw — but performed a cure on two only.

He ridicules those authors who recommend giving balls of various sorts to horses with lockjaw, saying:

I would ask those gentlemen, how a single ball is to be given, when not so much as a shilling piece can be put between his teeth; and his jaw cannot be pried open, even with an iron bar.

Sane Shoeing

The shoeing of horses, Carver insists:

is an operation of far greater importance than is generally imagined . . . [and] I am well aware, that what I shall here advance will meet with opposition, from the ignorant and prejudiced shoers of horses . . . three fourths of them are as ignorant of the structure of the foot, as the horse is of them. But I shall appeal to the understanding and judgement of the experienced few, both in this city and elsewhere, for the justness of the statement. . . . A most pernicious custom is practised in this city, by many pretended shoers, which is to make presents to gentlemen's coachmen, grooms, or negroes, in order to obtain horses to shoe.

The conscientious Carver, upon being asked by these leeches what he would offer,

Strangles was a common problem from colonial times, treatment of which — including vigorous use of the twitch — changed little until the advent of chemotherapy and tranquilizers. Manning: *Stock Doctor*



OPENING THE ABSCESS OF STRANGLES.

says: "My reply was, that I should give nothing." They told him that the common practice was to remove and apply the same shoes, and charge as for new shoes, and some owners:

told me that they believed there were more horses shod for bribes and grog, than by experienced workmen; and when they discovered the fraud, they immediately ordered the horses back to my shop.

Additional light is cast upon the character of the common shoeing smith of the time. Of "old and experienced" shoeing smiths, Carver says:

There are a few such characters in this city, and but few. The greater part of them have never made the anatomy of the foot their study. They are generally employed as journeymen, and like birds of passage, are here to-day and gone to-morrow. Talk to them of the internal structure of the foot, of the coffin, and coronet, and you will find them entirely ignorant, and know no more about the matter than the horse knows about them. . . . They are so tenacious of their own opinions, and so perverse, through ignorance that they will not be taught. Since I have given up the business of horse shoeing, I have frequently, at the solicitation of gentlemen, gone to smith's shops and shod their horses, in order that they might travel sound. In many instances I have endeavoured to instruct smiths in the principles of shoeing . . . but the next time they attempted to shoe, they would still cut down the heels, frogs, and bars of the feet, against which I have so much protested.

Mange, Carver states:

is a disorder that horses are subject to in all countries. . . . This distemper is contagious and is frequently caught by infection. I have known men who have taken care of horses with the mange to have caught the itch from them. . . . When a horse is labouring under this disease, by taking a microscope and looking at him [?] through it, you may discover a number of small live insects in the pustules.

Carver apparently did not use the microscope himself, but his reference to identification of the mange mite by use of the microscope (hand lens?) is an early one in veterinary literature, perhaps the first in America.

The Doctor on Docking

Carver appears to have had strong humanitarian instincts; he laments:

The docking and nicking of horses is a cruel practice, and ought to be abandoned by the whole race of mankind . . . but that creature called man, attempts thus to mend the works of his almighty wise Creator, and in the execution of which, he frequently spoils and disfigures them.

Carver admits to having performed these operations a few times at the insistence of clients, and he details what he considers the best methods to save the horse from some of the barbarities perpetrated upon this hapless animal. He says, however:

Contrary to my pecuniary interest . . . if I can prevent one owner of a horse from performing this brutal practice on the animal, my wishes, in some measure, will be gratified.

More or less as a valedictory, Carver states:

As the first edition of this work [1818] was disposed of in the course of eight months, it was thought advisable to publish a second [1820], under the impression that the first met the approbation of the public . . . this may probably be the last time they may hear from me on the subject of that most excellent and noble animal the horse; wishing that my fellow beings called *man*, may perform their duty through life as well as the beautiful creature I have just mentioned, and long admired, and endeavoured to relieve when in distress, and to protest against the brutality of the worst of all animals, *Man*. . . . Hoping this work may prove of utility to the owners and lovers of horses, the author takes his leave of the public and subscribes himself—Their obedient servant, William Carver.

It appears, however, that Carver did not take his leave for some time. An item by him on the management of horses appears in the *New York Enquirer* in 1830, in which he says, "I presume none of my fellow-citizens will doubt but I have some knowledge of the structure and economy of horses, after years of extensive practice."

What, then, is to be our evaluation of this man and his work? Every man to some degree, of course, is a product of his times,

and the *Practical Horse Farrier* is not without its faults, either of omission or commission. But judged against the backdrop of his own time — the only fair criterion — it is obvious that William Carver was far in advance of his contemporaries, and the over-all tenor of his writing is acceptable even today. A little immodest at times, he was less so than most of his fellow practitioners and authors, and it may with good reason be said that he had more cause to have a good opinion of his practice than others had of theirs. What is of greatest consequence to the historian, he has given what appears to be an honest and conscientious picture of conditions as he found them in practice — rather than in the writings of others. Certainly, veterinary medicine in America, and thus the public, would have benefitted if this second edition of his work had not been “the last time they may hear from me on the subject.”

JAMES CARVER, PROFESSIONAL FARRIER

As indicated above, it was James Carver, a London graduate of 1815, who is the best known of the Carver clan, primarily because bibliographers of Americana give his ill-fated *Farrier's Magazine* (1818) perhaps greater recognition than it deserves. At least from a veterinary viewpoint it is less revealing of conditions as they existed here than is William Carver's *Farrier* — which as a book is dismissed rather lightly, being presumed to be of the same genre as others. Actually, Carver's *Magazine*, while apparently intended to be issued serially (only two issues appeared), was more in the nature of a repository which could just as well have been published as a book. There is no intention, however, to detract from its value as an historical item; considerable insight is offered on Carver's intentions to see veterinary medicine raised to a more proper status.

In the introduction to Part II of his *Farrier's Magazine*, Carver states:

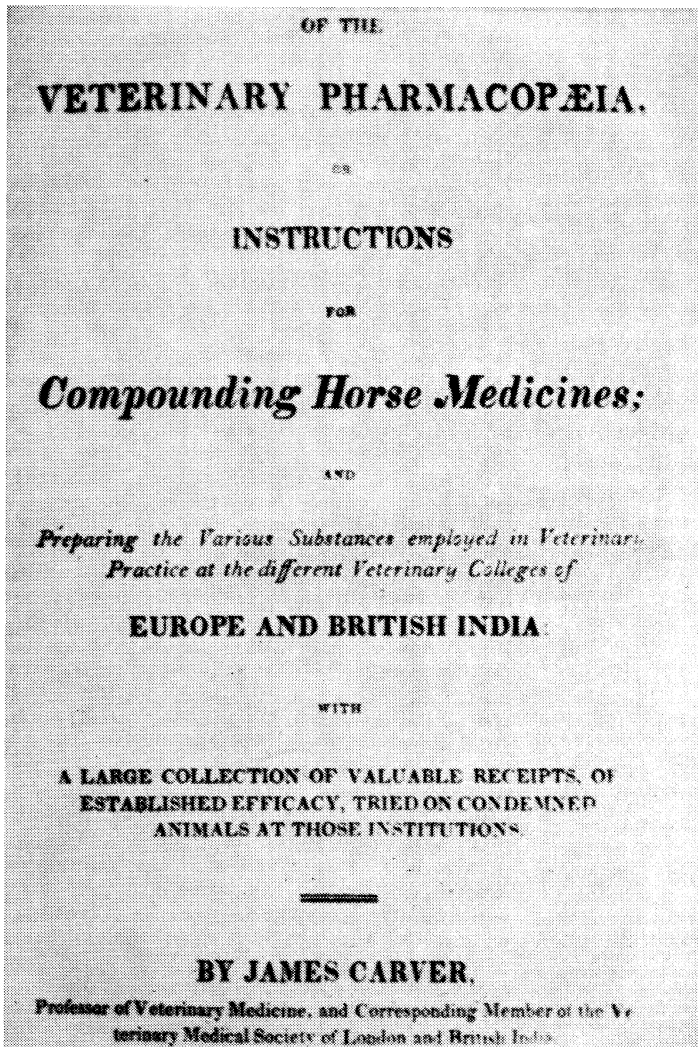
It is only within these last thirty years that veterinary medicine has been placed on the footing of a science. The institution of the

Royal Veterinary College of London is the great era from which this improvement may be dated, and the sequence of this has been, that ignorance and error have been detected, so as to establish what may be termed the difference between random routine and scientific practice; and the first professor, M. St. Bell, a Frenchman, showed (as I may be doing for this country) what now might be done during the short time he possessed the appointment. . . .

The greatest skill is requisite to form a judgment on the diseases of brutes . . . can there be a greater burlesque, than the supposition of a man's ability to give physic for a horse, excepting in very common cases, merely because he knows how to groom and shoe him? The plea of experience is futile; for the utter inability of illiterate and uninformed men to investigate the principles of science, and their total want of opportunity to acquire, even by rote, a rational system of practice. The whole stock of medical knowledge of these practitioners usually consists of a number of receipts, handed down from Tom and Dick to Harry, with which they continually ring their charges in all cases, right or wrong, hit or miss; and so fiercely are they bigoted to their own particular nostrums, they are totally incapable of all advice or improvement, the common and unavoidable fate of confirmed ignorance, since it is the highest point of knowledge to know and feel that we still need information. . . . Into such hands do men commit their distempered animals, who have it not in their power to reproach their masters with their accumulated sufferings. Mankind, from prejudice, indolence, and want of feeling, neglect those creatures which they can purchase with their money; and the progress of veterinary medicine, grounded, as it necessarily must be, on a proper knowledge of the anatomy, physiology, and pathology of disease, will in this country, as it was in Europe, be rapid or slow according to the diligence of those enlightened practitioners which the college has sent forth. . . .

The number of horses annually lost in all the public cities of the United States, and particularly in the mail stage departments, either from evils attendant bad shoeing or other mismanagement, is incalculable, and calls aloud for the attention and interference of government. . . . In endeavoring, therefore, to obviate this defect, I trust I am performing a most useful and acceptable task to the community.

Among Carver's essays in this publication is one addressed to Judge Peters and several medical men of Philadelphia, among others, on the importance of veterinary science. In this:



Internal title page from James Carver's *Farrier's Magazine*, 1818, a collection of essays on veterinary subjects. Although serial publication appears to have been intended, only two issues were published. R. R. Shomer collection

I cannot forbear offering some remarks respecting the Veterinary profession, independent of the subject of the new Veterinary Forges I am now establishing in this city, with a view of laying the foundation stone for ameliorating the Diseases of Quadrupeds in general, and in order to give encouragement to those who may still feel a want of confidence in not knowing its having assumed the form of a science, as if it were a derogatory and hopeless profession . . . to accomplish this, however, some time must be allowed. . . .

Some disappointment has, without doubt, arisen, from unfounded expectations of relief in desperate and hopeless cases, where human art could not avail; and some, not finding their interest served in this respect, have become rancorous enemies to the establishment of the

New Forges, as well as to the profession. . . . Still there can be no doubt, that if human medicine and surgery have been aided by public establishments, the Veterinary art must admit of improvement by the same means; and that cloud of *imbecility* that has so long obscured and stigmatized the profession in this country, now promises gradually to be dispelled; and no doubt that in a few years, there will not be a city, a town, or a country village in the United States, but will have to boast a practitioner, whose abilities may do honour to a great national institution.

Forging Ahead

Following this, Carver inserts an "essay" promoting his proposed forges:

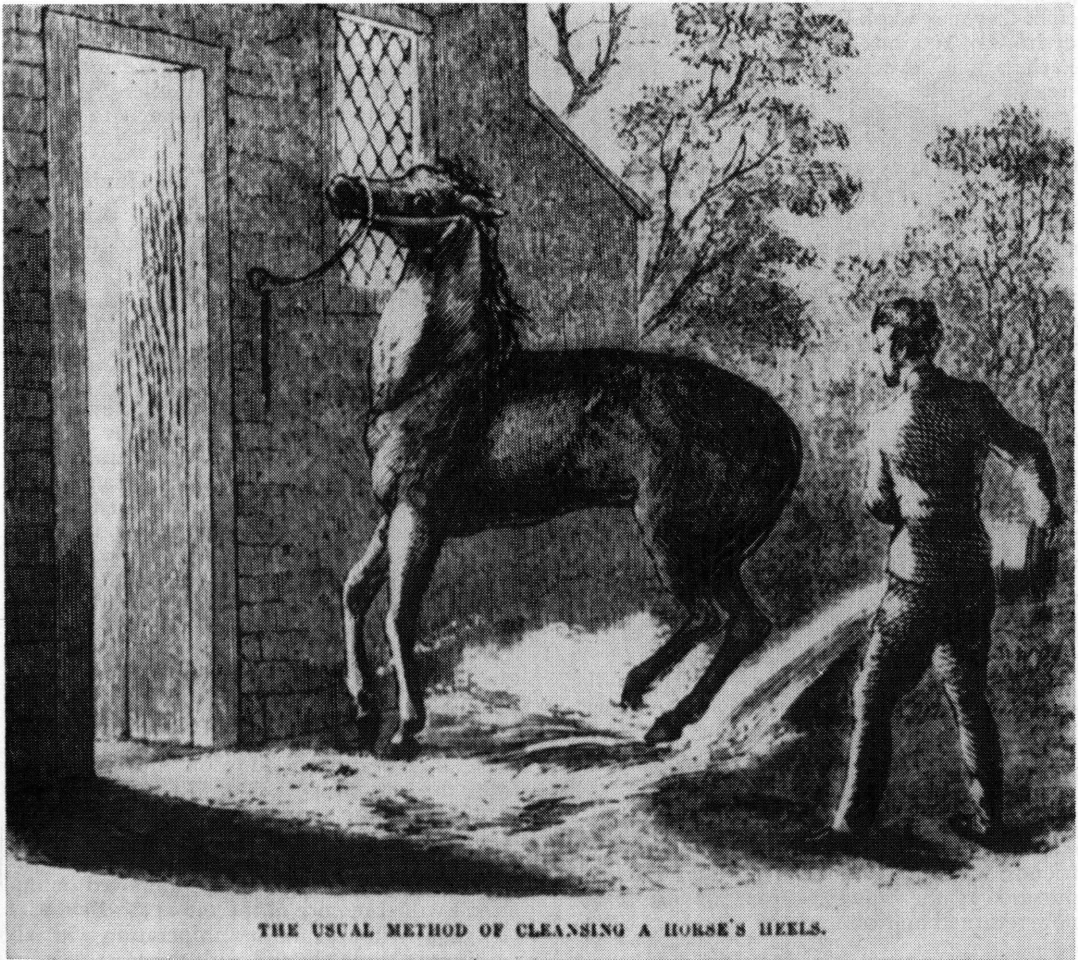
Cities, Country Towns, and Villages, and Proprietors of Mail and Stage Coach Establishments, will find it an object of great commercial, as well as domestic importance to their own interests in obtaining smiths, and inviting them to receive instruction, and to establish themselves on their different lines. . . . The following gentlemen, therefore, seeing the ignorance and incompetency of farriers, and others, who have hitherto practised on the diseases of horses in this city . . . have cheerfully stepped forward to sanction and support it.

Among the several patrons listed by Carver are Drs. Chapman and Hewson, Professors

of Anatomy, and Dr. Mease. He continues:

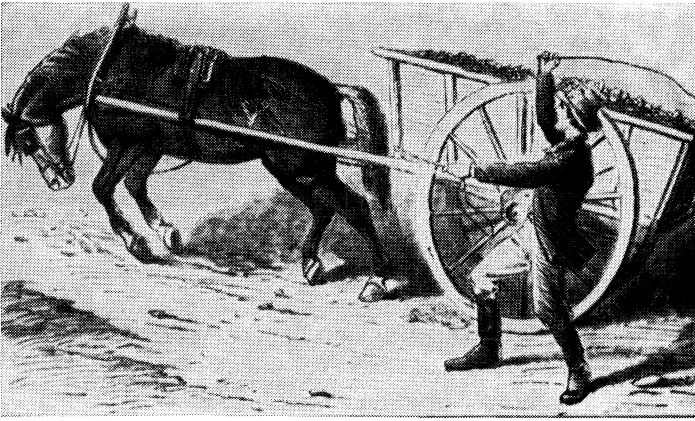
Country smiths, respectable young men desirous of emulating in this branch of the Veterinary Art, as well as to learn the surgical, operative parts of the profession, will do well to apply before the ensuing winter. And every person being so instructed, and found qualified, will receive a proper certificate, signed by the medical patrons, gentlemen and professor of the aforesaid establishment, as being better qualified to practise with advantage to themselves and to the public.

Carver adds that he has established a small laboratory, where:



THE USUAL METHOD OF CLEANSING A HORSE'S HEELS.

Although the aphorism "No foot, no horse," had been repeated since ancient times, few horsemen paid heed—but paid in terms of horses made useless before their time. Mayhew: *Horse Doctor*



Overwork of horses, especially on stony streets, was often cited as a cause of foot troubles. *American Agriculturalist*

gentlemen may be supplied with what Medicines they may want. City and country druggists, desirous of retailing . . . may be supplied also. Each article containing a regular practical treatise on the complaint intended to be removed.

Carver then lists some twenty-eight

Subjects which will be taught and demonstrated to every smith on receiving instruction at the New Veterinary Forge . . . [concluding with] how and why the shoeing art has for so many ages been involved in a cloud of darkness. With conclusions how this branch of the Veterinary Art may be drawn from contempt to respectability.

In an "Advertisement to the Faculty, Gentlemen, Farmers, and Graziers of Pennsylvania, and the United States in General," Carver gives a concise history of the veterinary art in antiquity, and an outline of the history of the schools of France. In this he states:

Dr. Rush, whose heart was ever warm for the introduction of any new branch of science, which might tend to promote the welfare of the animal creation, conversed much with me on Veterinary subjects, and laboured hard to prevail upon me to establish that pursuit in this city—but not having then obtained it scientifically, I proposed to Dr. Rush and other friends, already mentioned, my then intended pursuits at the college,—from whence I am now returned and commenced practice.

In a history of the London school, he mentions that one of its promoters, Granville Penn,

is of the Penn family of Pennsylvania . . . strange it is, that the very man who laid the foundation of the London Veterinary College, should be an American. . . . May we not, therefore, hope, ere long, to see another Penn rise up and lay the foundation stone of a Veterinary institution in this country?

Carver's statement about the family ties of Granville Penn is correct, but it may be doubted that this made him an American.

Professional Qualifications

Carver then speaks of "The Character of a Veterinary Surgeon," saying:

There is, undoubtedly, no profession in which greater natural qualifications are required than our own. The more liberal nature has been in her gifts, the more carefully the first impressions have been cultivated by rational education—by so much better will a man be fitted for the practice of it. Youth, firmness, dexterity, acute sensation, sound judgement, and humanity, are the qualifications which may be considered as necessary for a surgeon, whether his patient be a man or a quadruped.

In elaborating on these, he says:

He that begins to study on the brute . . . from the earliest period of life, will be most likely to acquire reputation . . . *Firmness* . . . implies resolution to go through his operations, however hazardous or severe, undisturbed by any accidental circumstances—unmoved or unawed by the presence of spectators . . . *Dexterity* . . . enables him to finish an operation with all convenient dispatch, and with the least pain to the patient. . . . *Acute sensation* . . . is necessary to distinguish the true state of the pulse . . . *Sound judgement* . . . enables him to form

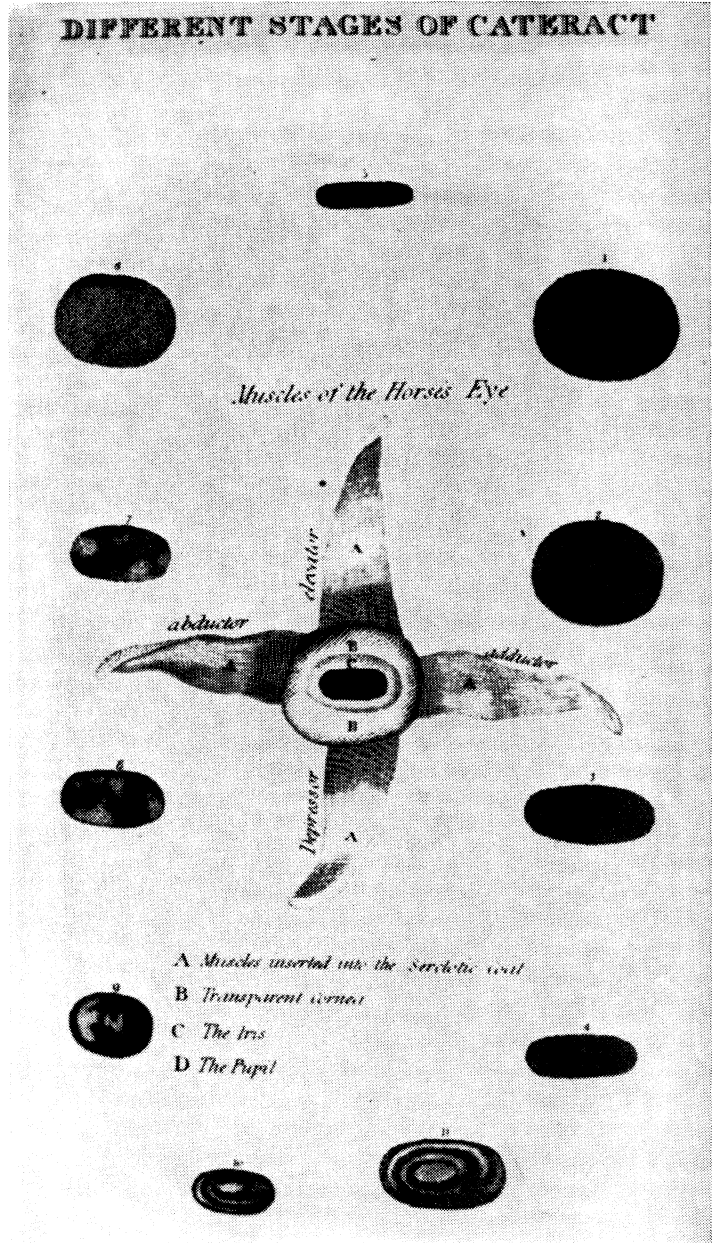
judicious prognostics . . . *Humanity* . . . is the cardinal qualification of all; it reflects a lustre on the rest, and completes the true character of the man, as well as the surgeon.

Of the "acquired knowledge necessary to make a good Veterinary Surgeon," Carver says the most important are "a knowledge of the power and properties of medicines

. . . [and] a complete and thorough knowledge of Comparative Anatomy."

Carver's publication closes with a listing of his qualifications and testimonials as to his abilities; an invitation to the students of the University of Pennsylvania "to attend a Course of Lectures on the Foot of the Living Horse; and the various diseases

In his *Farrier's Magazine* (1818) James Carver gives a good description of the horse's eye and of the operation for cataract, learned while he was a student at the London Veterinary College. R. R. Shomer collection



attendant on Quadrupeds in general" and an advertisement for his "Veterinary Bath." Finally, he gives: "Heads of Subjects to be treated of in Dr. Carver's proposed Publications," which is essentially what might pass for the table of contents of any standard work on farriery. Thus it would appear that Carver had intended to continue his magazine "In order that the public may be put in possession of all of the necessary information in Veterinary Science."

Manure Factories

The second issue of the *Farrier's Magazine* contains several essays on the eye of the horse and its diseases, some sixty-eight pages in all, undoubtedly some of the best veterinary writing that had appeared to this time in the United States. It would appear that this is primarily the substance of what was taught on the eye at the London school. Carver does, however, add some comments from his own experience. His belief, reinforced by teachings at the London school, was that ophthalmia and other affections of the eye were due largely to poorly ventilated stables, which he says, are converted into "storehouses and factories of manure." One of his objects is:

to point out and expose whatever I may have seen and witnessed, particularly on Long Island and among the Pennsylvania farmers, as well as in the city of Philadelphia, what I know to be so productive of causing so much blindness, as well as every way prejudicial to the general health of that noble animal. For, on Long Island, it is notorious, that three horses out of every five through the island, is blind with cataract; and if any one will only take the trouble for the space of one week, to walk up and down Market-street [Philadelphia], he will, I believe, find that I am not very far out of my calculation, as respects this state and city . . . if people are determined to continue on,

in their old way of stable deception, by suffering their horses to stand literally on hot beds of manure, and are determined to give no ventilation to their stables, certainly, as a veterinary practitioner, the more grist will continually be coming to my mill.

Carver is especially harsh on some of the practices of ignorant practitioners, as that of blowing powdered glass into the eye to cure "moon blindness." And in decrying the practice of farriers in cutting out the frog, he says:

In order to show the evil tendency which this abominable practice at one time produced in the British army, the officers of the regiment were obliged to pass a martial law, that every farrier who was found guilty of this crime, was branded *on his posteriors* with a hot iron in front of his regiment. And if some of the sons of Erin, at the south end of the town, were to have this operation performed on them a few times, I am confident there would not be so many lame horses in Philadelphia as there now are; for I have been witness to the abominable practice, and stood by and seen them deprive the frog of large slices, which I am confident it was not in the power of nature to replace in as many months.

In several articles on "The Epidemic Fever, or Influenza . . . in and about the City of Philadelphia," Carver leaves no doubt that he had correctly identified the disease, but gives no satisfactory evidence as to how extensive it was. He says:

The cases in and about the city, from every account that I could collect, have been numerous, and I have this day learnt that it is still prevailing very much about Darby, Chester, and Wilmington.

Most of his material, however, relates to the history of the disease in Europe, and to a number of cases he had personally attended.