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ANCIENT POEMS ON INFANT HYGIENE

By JOHN FOOTE, M.D.

WASHINGTON, D. C.

DIDACTIC poetry, perhaps one of the earliest forms of verse, has become a rarity in modern times, esteemed chiefly as a curiosity of literature. Indeed, some critics are positive that the words didactic and poetry are of themselves so incompatible that no real poetry can be didactic. And yet, Hesiod, that shadowy rhymester, who seems as composite an individual as Homer himself, wrote the first didactic poems of which fragments have come down to us, and the elegant Aratus and Lucretius and Virgil followed in the footsteps of the rustic singers of ancient Greece. This could not fail to impress and influence those students who in later days read Greek and Roman literature. So it was that the intensive study of the old languages and the classical authors which came with the “revival of learning,” and the practice of writing Latin verses which was a fashionable affectation of erudition in the Renaissance period and later, caused a revival of the study and imitation of the ancient poems in European countries which influenced writers for at least two centuries. Indeed much didacticism is found in late eighteenth-century poetry; Pope was essentially a didactic poet.

Like some primitive civilized peoples who put all their knowledge into verse, so that their learned men forgot nothing old yet originated nothing, these later didactic poets forgot little of the ancient learning, good or bad, and in their passion for precedent learned little that was new. Their scope was wide and versatile—they instructed the public in philosophy, astronomy, agriculture, religion and especially in medicine. Nauseous as the remedies of that day certainly were, the prescriptions were sweetened and sugared with rhyme, so that no patient with a soul attuned to verse could well refuse them. There is, for example, the very ancient regimen of health of the University of Salerno, claimed by some to be as old as that venerable shrine of learning itself—and conservatively placed as early as the thirteenth century—the equivalent of our modern books on personal id.
hygiene. It is a little difficult to realize that people were interested in hygiene in that remote period—yet here is the proof.

The eighteenth century witnessed a perfect flood of medical didactic verse, some of the type of Garth's "The Dispensary," a poem which endeavored to reduce the excessive charges of the apothecary—a very serious evil in that day. Not only were many English medical poems written at that time, but a fairly large number were translated from other languages into English.

We are learning slowly enough that there is nothing very new under the sun, but we always mentally reserve certain ideas of the present day which are so peculiarly identified in our minds with modern thought and modern progress as to constitute themselves a landmark between old times and modern days. One of these is the idea of educational propaganda by means of books and pamphlets to prevent infant mortality. Because of this it will come as something of a surprise to learn that in the didactic poetry of the eighteenth century at least two such treatises were translated into English from foreign languages—one, "The Nurse," by Tansillo, from the Italian by Roscoe; the other, "Pædotrophia; or, the Feeding and Upbringing of Children," by St. Marthe, a French writer of Latin verse, translated by H. W. Tytler, M.D. "The Nurse" was printed in London in 1798 and reprinted in New York in 1800, while St. Marthe's poem was translated from the Latin into French, exhausted ten editions in its native tongue and was given two separate English translations, the last published in London in 1797.

In 1776, more than two decades before either of these translations appeared, Dr. Hugh Downman, an English physician who dabbled in classic literature, wrote a didactic poem in his native tongue called "Infancy, or the Management of Children," which went into seven editions. As a historical source it has little value as compared with the translations by Roscoe and Tytler, though it is probable that its publication may have stimulated interest in the foreign literature on the same subject. Throughout the six books the author seems more concerned with airing his classic lore than anything else, and the anxious mother would have a difficult time to remember his florid axioms, excellent though they were. Both Tansillo and St. Marthe expressed themselves both more succinctly and more wisely than Dr. Downman—because they really wrote for the mothers of their day. "Infancy" deals with breast feeding, accessory feeding, weaning, diet for older children, clothing and bathing, walking and exercise, and the simpler ailments.

In the sixth book Dr. Downman pays a tribute to Lady Mary Montagu, and credits her with having established the practice of inoculation to prevent smallpox. As this work was published in 1776, it precedes Jenner's publication of vaccination by many years. Though the poet says inoculation has "saved thousands," he details no personal experiences with it.

She hath been the cause
Of heartfelt joy to thousands; thousands live
And still shall live through her. . . .

Yet Downman corroborates the statement of Klebs and others that inoculation against smallpox was widely used in England before vaccination was shown to be of greater value. There are so many apostrophes to eminent physicians—Armstrong and Garth (the medical poets), Cullen, Hunter, Mead, Hewson, Codrington and

2 "Pædotrophia; or, the Art of Nursing and Rearing Children," translated from the Latin of Scèvole de St. Marthe by H. W. Tytler, M.D. London: 1797.
many others, to say nothing of long and intimate talks with Fame, Duty, Affection, Habit and many other qualities, virtues and vices, that the more one reads the more he is convinced that Downman was writing up to his literary and medical friends rather than down to the uninformed, or at least uninstructed mother of his day. This not only takes away from the author's originality but also from the vivacity of his narrative, in marked contrast with Tansillo, who ignored his contemporary physicians, or St. Marthe, who recognized them only for the purpose of confounding them.

I. THE NURSE

William Roscoe in his translation of Tansillo's "La Balia," or "The Nurse," placed a scholastic chip on his shoulder by paralleling his translation with the original on the opposite page. Tansillo, born about 1510, was by profession a soldier and by avocation a poet. He was a very good soldier, as his progress in the profession of arms attested, and his contemporary, Torquato Tasso, spoke of his sonnets as elegant, while Zeno averred that they would not suffer by comparison with Petrarch's—proof enough, it would seem, of his poetic ability. "The Nurse" was not his only poem. Early in his career he wrote a dialogue in verse called "II Vendemmiaatore," which, while admittedly witty, was generally condemned for its licentiousness, and indeed resulted later in having all of his works placed by Pope Pius IV on the "Index Expurgatorius." This was a very serious matter to any Italian author—as serious as the plight of a modern war correspondent who has fallen under the displeasure of the censor. Besides Tansillo seems to have been of really good character, and the interdiction hurt his reputation and his position. Chaste was my life, though wanton was my page Nor shall one blot deform my riper age.

So he wrote in his apology which took the form of an ode to the Pope appealing for the removal of the ban on his writings. Whatever may have been the influence of this appeal Tansillo's works were not forbidden in the next edition of the "Index." Besides "The Nurse," Tansillo wrote some comedies and a long didactic poem "Il Podere"—"The Country House." His writings were long neglected and "The Nurse" was not published till 1767, two centuries after the author's death.

We may safely assume from the context of this poem alone that Tansillo was a husband and a father. No mere bachelor could feel so strongly concerning the advantages of maternal breast-feeding as compared with the mental and physical dangers accompanying the practice of abandoning babies to the care of a wet nurse. The poem is, in fact, a pamphlet against an evil that at various periods of the world's history among the wealthier nations has engaged the attention of the philosopher and the propagandist. In Alexandrian Egypt, as in the Athens of Pericles, the Rome of the Caesars or the France of Louis XIV, and Elizabethan England—wherever and whenever, in fact, wealth and luxury and artificial standards of fashion set their mark upon maternity—mothers have been in the habit of delegating the task of nursing the infant to foster mothers of a lower social order, and foster mothers have always been found venal enough to neglect their own babies in return for money and creature comforts. "The Nurse" is not only interesting as a document in the social history of Italy in the sixteenth century, but also because of its value to the medical historian in giving an authoritative retrospect of the practices and beliefs concerning wet-nursing maintained during the period in which it was written. That these same practices and beliefs existed in England two hundred years later would seem incredible, if the translator did not naively inform us that such was the case.4

4 Luigo Tansillo: loc. cit.
“Such is the coincidence between the state of manners in Italy in the sixteenth century and England in the eighteenth,” he tells us, “that the translator though intending to accommodate the poem to modern times has seldom found it expedient to vary from the original in the slightest degree.”

The practices of wet-nursing and baby-farming were notorious evils in seventeenth- and eighteenth-century England. Animal milk was not used in artificial feeding to any extent, not only because of the unsanitary conditions surrounding its production, but for other reasons. London in the sixteenth and seventeenth centuries was crowded and filthy—cows and other animals were often kept in noisome cellars. It was soon found that children fed on cow’s milk died of “the watery gripes.” The “Booke of Children,” the first English nursing manual, written by Thomas Phayre (1551), and also the works of his successors, Walter Harris and John Pechy of the succeeding century, warned against the use of cow’s milk. And so pap and Lisbon sugar and similar feeding adjuncts were employed, with or without breast milk, so that nutritional diseases were widespread and rickets came to be known on the continent as the English disease. For while Jacques Guillemeau described beading of the chest in infants in 1609, it was the English physician, Glisson, who named and studied what he called “an absolutely new disease, rickets,” publishing his classical study in 1650. The fashionable woman who wished to wean her infant, and there were many such, usually came to grief unless she could secure a wet nurse. As a natural result good wages were paid young country girls who had breast milk to sell. Moreover, these young women were unusually well cared for and well fed so that their milk might be of good quality. The moral effect of this condition of affairs was pernicious. Large numbers of young women became mothers of illegitimate children which were immediately placed in baby-farms, while the mothers proceeded to dispose of themselves as wet nurses to more fortunate infants. The baby-farms had a tremendous mortality, as might be expected, and as really was expected. This state of affairs became such a notorious evil in the eighteenth century that legislation was passed in an attempt to at least regulate if not control the conditions producing this tremendous mortality. From 1775 to 1796, 99.6 per cent of 10,272 children admitted to the Dublin Foundling Hospital died. At about the same time the Paris Foundling Hospital had a mortality of over 80 per cent. And the private baby-farms were, if possible, worse than these public institutions.

Tansillo’s poem was translated at about this time, 1798, the year in which Jenner announced his work on vaccination, and St. Marthe’s was published the previous year. Both translations were undoubtedly part of the propaganda for reform that was in the air concerning infant mortality and children’s diseases. Underwood had just written his text book, the first complete treatise in English, comprising not only a consideration of children’s diseases, but also completing the work on the care and nursing of the infants begun by Walter Harris in the preceding century and Cadogan in his own day. George Armstrong too had written his “Essay on Nursing” and conducted his dispensary and small hospital for poor children in London where he spent time and money until lack of support forced him to close it. The translation of poems bearing on infant hygiene at this particular time cannot, therefore, be looked upon as a mere coincidence or an accidental happening.

The practice of not nursing the infant indulged in by fashionable mothers was one of the evils which was prevalent in England in Roscoe’s day as it was in Italy in Tansillo’s.

The poet refers to this tendency rather forcibly in the following:
What fury hostile to the human kind
First led from Nature's path the female mind,
Th' ingenuous sense by fashion's laws represt,
And to a babe denied its mother's breast?

Very early in the book the poet asks this question, which he rhetorically neglects to answer in his lyric fervor against the mother who takes every care of the embryo child only to refuse it natural care after it has come into the world:

Hopeful that pity can by her be shewn
Who for another's offspring quits her own.

Most of the medicine of Tansillo's day was based on the works of Celsus, Galen, and other classical writers. It is not surprising, therefore, to discover that he has borrowed some of his ideas from the "Noctes Atticæ" of Aulus Gellius. The philosopher Favorinus holds forth in the "Attic Nights" on this very theme, in sentiments almost identical with Tansillo's. He also asserts the belief maintained by most ancient writers that milk and blood are practically identical substances, differing only in color, and that premature checking of breast secretion must cause serious derangement of bodily functions. The translator points to a similar quotation in Gellius and cites Nicolas Puzos, the famous French teacher of midwifery, in support of the view elaborated in the following stanzas:

Check ye the milky fountain as it flows?
Turn to a stagnant mass the circling flood
And with disease contaminate the blood?

O crime! with herbs and drugs of essence high
The sacred fountains of the breast to dry,
Poured back on Nature's self the balmy tide
Which Nature's God for infancy supplied!

There is really little difference between this practice and infanticide, says Favorinus. His Italian follower, is, if anything, more insistent.

Social customs, even more than history, repeat themselves when certain favoring conditions are present. Kipling's "Judy O'Grady and the Colonel's lady" had really fewer points in common than the matron of Rome in the first century revealed when compared with the fashionable mother of London in the eighteenth. The ancient writers were nothing if not logical, whatever their premises may have been. And so, once admitting that milk and blood are identical, it would follow that any woman who can bear a baby can also nurse it. Tansillo puts this rather more elegantly:

'Tis his, not hers—the color only changed
Erstwhile through all the throbbing veins it ranged;
Poured through each artery its redundant tide
And with rich stream incipient life supplied.

To shape and strength th' unconscious embryo grows
But when 'tis born then Nature's secret force
Gives to the circling stream another course.

Probably in every age philosophers have ruminated on genetic problems of some sort or another. No one has ever quite satisfactorily explained the reason why animal pets increase in inverse ratio to the human birth rate. Plutarch records how Julius Caesar walking through Rome saw some strangers playing with lap dogs and monkeys which they carried, and asked: "Do not their wives bear children?" As it was in Caesar's day so was it in Tansillo's; the sixteenth-century poet ridicules the meticulous care taken of these imported pets in the following passage:

What fears ye feel as slow ye take your way
Lest from your path the minion chance to stray,
At home on cushions pillowed deep he lies.

Whilst your young babe that from its mother's side
No threats should sever and no force divide
In hapless hour is banished far aloof
Not only from your breast, but from your roof.

The translator testifies to the existence
two hundred years later in eighteenth-century England of "this detestable custom . . . which is probably more frequent in Italy than in this country." That it was far from infrequent in England in Roscoe's day may be deduced from Hogarth's pictures—often showing a dog or a monkey as part of the furnishings of the fashionable drawing room of that period. Monkey parties are, however, not growing in popularity in modern society.

Tansillo evidently had some misgivings as to the immediate effect of his propaganda, for he essays to give negative directions as to the proper procedure in choosing a wet nurse. Perhaps his knowledge of the medical classics was too strong even for his prejudices. Ever since medical authorities learned to write, directions have been laid down as to the qualities which a wet nurse should or should not possess. Celsus had some ideas on the subject; Aulus Gellius made his wise character Favorinus discuss it. Soranus of Ephesus, who wrote in the second century, gave most sensible and explicit directions in his work on gynecology, while the Suśruta Samhita, the great work on Indian medicine, which probably came later than the sixth century, devoted part of a chapter to its consideration. The weight of medical authority still lay heavy on the minds of men, and so Tansillo, implying with a poetical shrug, "if you must, you must, though I have warned you," continues:

But if the pleasing task you still refuse
Ah deaf alike to nature and the muse!
Let prudence then th' important choice direct
Nor let your offspring mourn a new neglect.
To seek a nurse ye trace the country round
At length the mercenary aid is found—
Some wretch of vulgar birth and conduct frail;
Some known offender, flagrant from the jail;
In mind an idiot, or deprived of life,
A shameless strumpet or impoverished wife;
Or be she brown or black, or fresh, or fair,
Or to the mother no resemblance bear,
She brings, it seems, a full and flowing breast—
Enough—your care excuses all the rest.

It was undoubtedly Favorinus of the "Attic Nights" who supplied the poet with the foregoing argument, and he it was who originally emphasized the need of choosing a wet nurse of the same type and complexion as the child. For again, "since milk is blood" why could not physical and mental qualities be acquired through breast milk? That is why such emphasis is laid on "be she brown or black, or fresh, or fair," etc. Happily these fantastic beliefs have long ago passed into the oblivion of a thousand other speculative hypotheses of the past concerning human physiology.

Avails it aught from whom the embryon sprung,
What noble blood sustained th' imprisoned young,
If, when the day-beam first salutes his eyes,
His earliest wants a stranger breast supplies?
From different veins a different nurture brings,
Pollutes with streams impure the vital springs?
Till every principle of nobler birth,
Unblemished honor and ingenuous worth,
Absorbed and lost, he falsifies his kind,
A groveling being with a groveling mind.

There is no uncertainty in the foregoing passage as to the belief—that mental and moral attributes were conveyed in the breast milk.

In the second canto of the poem Tansillo speaks of prenatal care, and elucidates the old-time doctrine of longings, desires and frights and their influence in producing birthmarks and deformities. Old-time doctrine it was and is—yet in many communities today the belief that frights and unsatisfied desires may deform the unborn child still holds undisputed sway. The translator, in a footnote, rejoices that "modern ideas have at length nearly banished an opinion formerly very prevalent and productive of great unhappiness to the female sex—namely that the child before its birth is liable to be partially affected by the imagination of the mother." The unhappiness of the poor male who had to gratify at manner of strange whims of a capricious wife under penalty of being held responsibl
for some hideous deformity, might also have won the sympathy of the translator, who was himself a married man. Perhaps his undoubted gallantry restrained him from expressing his true sympathies!

The late eighteenth century was not wholly unprogressive, for a little later Roscoe says: "The absurd custom of binding down infants hand and foot with bandages . . . has at length given away to the voice of reason and common sense."

No woman of much character would deprive her own infant to nurse another, says the poet, and in a final outburst of indignation he exclaims:

O past all human tolerance the curse,
The endless tortures of a hireling nurse!
If to your children no regard were due
For your own peace avoid the harpy crew;
A race rapacious, who with ceaseless strife
Disturb the stream of calm domestic life.

Also, there is always the possibility that the infant may learn to love this impossible and unworthy foster mother more than the real parent, the poet argues, and then conjures up new perils:

This can ye bear? Another curse awaits.
Her tribe of followers besiege your gates,
Brothers of doubtful kin and friends by dozens
With female troops of sisters, aunts and cousins;
Without reproof you hear their loud carouse,
While frighted order abdicates your house.

The dangers to her powers of lactation by the visits of lover or husband are spoken of with much more directness than poetry, and the possible disaster to the infant as a result of these visits is graphically depicted:

Self her sole object—interest all her trade,
And more perverse the more you want her aid;
Sink the poor babe without a hand to save
And from the cradle steps into the grave.

And the still greater physical danger from the loose moral standard of the wet nurse of his day, and the prevalence in that period of the most deadly of the so-called social diseases is thus emphasized:

Say, is there one with human feeling fraught
Can bear to think, nor sicken at the thought
That whilst her babe, with unpolluted lips
As nature asks, the vital fountain sips;
Whilst yet its pure and sainted shrine within
Rests the young mind, unconscious of a sin,
He with his daily nourishment should drain
That dread disease which fires the wanton's vein,
Sent as the fiercest messenger of God,
O'er lawless love to wave his scorpion rod?

Again he reverts to the innumerable exactions of the wet nurse—citing as her prototype the wolf who nurtured the founders of Rome, in contrast with the tender maternal care shown by Mary when:

. . . . At a Saviour's birth
With secret gladness throbbed the conscious earth,
Whose fostering care his infant wants represt,
Who laved his limbs, and hushed his cares to rest—
She, at whose look the proudest queen might hide
Her gilded state, and mourn her humble pride.

The plaints of nature outraged are emphasized at some length and in the ensuing lines an appeal is made to young women newly married who expect to become mothers:

Not half a mother, she, whose pride denies
The streaming beverage to her infant's cries,
Admits another in her rights to share,
And trusts his nurture to a stranger's care.

This passage, as well as much that precedes it, was borrowed almost word for word from Aulus Gellius.

Probably no difficulty existed in persuading women of the lower classes in Italy to nurse their offspring. The chubby babies of the Italian Renaissance painters were just as certainly breast-fed, as some of the rachitic looking infants of the Bruges Master and other German and Flemish primitive painters were not. Frequently the pap bowl is seen in the Dutch, German and Flemish pictures of infants of that period—reason enough for their thin, weazened appearance. But it is to the great, fashionable ladies of Italy that Tansillo appeals—witness his concluding stanzas devoted to an invocation to "Le Colonne, le Ursini, le
Illustrious Devon led Britannia's train,
And whilst by frigid fashion unreprest
She to chaste transports opened all her breast,
Joyed her loved babe its playful hands to twine
Round her fair neck, or midst her locks divine
And from the fount with every grace imbued
Drank heavenly nectar, not terrestrial food.

The Duchess was, undoubtedly, a conspicuous example of maternal fidelity in a period when society women were allowed to believe and practice the belief that it was beneath their dignity to nurse their own children. But the observation of Tacitus concerning the care which women of the Germanic tribes, regardless of their tribal station, took in nursing their children, or the historic example of that Queen mother of France who snatched the infant prince from the arms of a lady in waiting who had presumed to nurse it, and going even farther thrust her royal fingers down the little prince's throat until he expelled the less noble milk—neither of these historic citations or examples found any repetitions in the maternal customs of the eighteenth century in the period of Roscoe, Pope, Hogarth and Underwood. And yet, Roscoe's translation of a poem two centuries defunct was not the only sign post of the trend of opinion in his day. There is other evidence that the English nation, aroused partly, no doubt, by the loss of life in the Napoleonic wars to the necessity for devising all possible means to preserve the national virility, was at last attempting to take seriously the problems of infant care and infant mortality, and was writing letters and pamphlets, and—as we have seen—even poems, just as Englishmen in the past have always done, prior to going seriously into the correction of the evils, which they eventually and quite definitely dispose of.

II. PÆDOTROPHIA

Tansillo had been dead for about fifteen years and his poems almost forgotten when in 1584 Scévele de St. Marthe from his native city of Loudun, in France, wrote the dedication of Pædotrophia, a Latin poem on prenatal care and infant hygiene. He was distressed by the civil wars in his beloved country, and had just finished an extensive reading of ancient medical authorities, studied in an effort to assist in the cure of some ailment in one of his own children. He was at this time treasurer general of one of the provinces of France, "nevertheless"—as he said in his dedication to his royal patron, Henry III, "I have sought acquaintance with the muses," this acquaintance being utilized in the work of "preserving those young and tender plants against an infinite number of storms and tempests which menace and frequently destroy them as soon as born." The then rather novel doctrine that the crown or the state should be interested in the prevention of infant mortality is implied, rather timidly it is true, when he speaks of the power of the crown "not only over countries, cities, castles and other things inanimate, but also principally over many millions of souls, and of living persons, in the preservation of which Your Majesty has a notable interest; whether it be to serve in your Majesty's armies, or for letters, or for traffic, or other different occupations."7

Henry III, a weak, effeminate little man, the favorite son of Catherine de Medici, had ten years before this succeeded his brother, Charles IX, to the throne of France. In spite of his many weaknesses, however, Henry rivaled Francis I as a patron of art and literature, and he seems early to have recognized St. Marthe's ability not only as a scholar but as a statesman. William Butler Yeats enunciated in our own day the statement that only

7 "Pædotrophia," loc. cit.
dreamers are practical. St. Marthe, whether or not he was a dreamer, was not only a poet of sorts but also at various times mayor of his city, representative at the Parlements of the kingdom held at Blois and Rouen and had, moreover, proven a telling factor in recovering for the king the province of Poitou after it had deserted to the League. A monument was erected to him by the States of Loudun in recognition of distinguished services to his native city. Altogether he seems to have been a busy as well as an important man. An ample fortune and a wealthy marriage placed him beyond the need of noble patronage or royal favors.

"Pædotrophia" was destined to see ten editions in the author's lifetime, was translated from Latin into French and into ten foreign languages. It was given two English translations, the first dedicated to Dr. Garth, of which the second edition appeared in 1718. The translation of 1797 by H. W. Tytler, M.D., was dedicated to the Earl of Buchan and sold by subscription. It was a very creditable literary effort and displays a spontaneity frequently missing in translations. Tytler was not only a scholar after St. Marthe's heart, but an enthusiastic admirer of that poet, not hesitating to place Pædotrophia next in merit to the "Georgies" of Virgil as a specimen of didactic poetry. Besides, the translator was a physician and all the more qualified to value the extraordinary knowledge displayed by this poet and statesman on the subjects of nursing and medical treatment.

Again we meet quotations from Aulus Gellius, who was so much favored in Tansillo's poem, and Dr. Underwood's new book is also referred to in the preface as the favored authority. Yet, it would seem that Van Swieten's "Aphorisms of Boerhaave"


influenced the editorial notes more than any other work on medicine and nursing.

The book is dedicated to the author's wife, in a passage which contains some rather astonishingly frank compliments, recalling a warning expressed by the translator in his preface, which reads:

"If, after all the pains that have been taken, there may be still one or two passages with which some nice young ladies will be apt to find fault, I would advise such to be sparing of their censures till they are married, and in a way to become mothers themselves; when it is not unlikely but they may peruse with the greatest benefit these very places which at present they will most readily condemn." . . .

The purpose of the book, too, is expressed in St. Marthe's dedication to his wife—rather a fine passage:

Accept my song, hence thy soft cares improve,
And learn to nurse the pledges of our love;
Lest, when pale Death demands us for his own,
When iron slumbers press our bodies down,
When our departing souls disperse in air,
No son remain, no daughter's tender care
To pay the funeral rites, the loss to mourn,
And pour their tears on our neglected urn.

Pliny, in Chapter IX of the twenty-eighth book of his "Natural History," says: "The mother's milk is the natural nourishment for infants." And Favorinus, the philosopher of Gellius, in whose mouth he puts so much wisdom, declares that the woman who does not nurse her baby is not "half a mother." St. Marthe had one or the other in mind when he wrote:

A Sage declared, and with the speech I'm pleas'd,
No mother should from nursing be released,

The ancient doctrine that milk is metamorphosed blood is again expressed:

Besides since ev'ry milky fountain flows,
By the same feed from which the fetus grows,
What kinder nourishment could Nature give?
By what so proper means could infants live,
As from this sacred source to draw their food,
And with their own, to mix their mother's blood?
"Nothing can be more natural or beneficial for the child," said Van Swieten, in Boerhaave's Aphorisms, "than that it should be nourished by the milk of its mother. In the womb it had its nourishment and growth from the mother's humours; nay, it seems very probable, that, in the last month of pregnancy the milk was carried to the uterus and the foetus."

Here in the poem, is the same idea:

... the fragrant spring
The same that, ere his eyes beheld the day
While yet imprisoned in the womb he lay,
Was given by Nature for his earliest food,
And filled his slender veins with circling blood.
The dye just changes, when by winding ways
Swift through the breast the vital current strays;
Thro' glands pure white th' exulting juices flow
Leave the firm red, and melt in tides of snow;
Of milk, the colour and the name, they take
But yet their ancient nature ne'er forsake.

That snow-white colour too, most undefiled,
Suits best the nature of an infant child,
Who ne'er should tinge his tender jaws with blood,
As if from recent slaughter came his food,
Lest, from his early years, he should acquire
A cruel heart and burn with impious fire.

A discourse on prenatal precautions then follows with a poetic summary of the early signs and symptoms of pregnancy. The mother is enjoined not to emulate Gallic mothers and "gird too tight, the swelling waist," and to obtain plenty of sleep. Exercise too is prescribed, in moderation, as witness the following:

Have you not seen from lakes and marshy ground
The stagnant wave spread noxious vapours round,
But running water, from the sparkling rill,
Shines in the glass, and you with pleasure fill?
The body, thus, from exercise, acquires
New Health, new strength, and brisker vital fires.

The "fair of France" come in for some criticism for the "modern dances" of that period which St. Marthe evidently disapproves of—it was not so in the good old days, he says:

... the fragrant spring
The same that, ere his eyes beheld the day
While yet imprisoned in the womb he lay,
Was given by Nature for his earliest food,
And filled his slender veins with circling blood.
The dye just changes, when by winding ways
Swift through the breast the vital current strays;
Thro' glands pure white th' exulting juices flow
Leave the firm red, and melt in tides of snow;
Of milk, the colour and the name, they take
But yet their ancient nature ne'er forsake.

That snow-white colour too, most undefiled,
Suits best the nature of an infant child,
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"Van Swieten: loc. cit."
Ancient Poems on Infant Hygiene

St. Marthe commends as a food “Cytherea’s dove” he distinctly means the turtle dove as distinguished from the wild pigeon. Those of melancholic habit should eat of pigeons rather sparingly, observed Dr. Léméry. He prefers that these individuals eat the young turtle dove, agreeing with Galen’s observation that “it is a food neither too gross, nor too slight, and, in a word, very wholesome.”

Léméry, too, recommends the flesh of the young kid—still suckling—in contrast with St. Marthe, who says: “not till his horns are grown.” Now these various recommendations did not have as much to do with the digestibility of the proposed food, as with the effects of certain imaginary volatile principles—supposedly contained in the flesh of these animals—which were imparted to those feeding on them. Thus Hippocrates, Aristotle and Plutarch all maintained that the flesh of the female goat differed from the meat of the male goat and should not be eaten by invalids. And to point a moral and adorn a tale the learned Dr. Léméry tells us how “a certain ancient wrestler of Thebes accustomed himself to live upon goat’s flesh, and that he excelled all others of his time in strength; and this might be because the goat, being a lively, nimble and light animal, and consequently containing many exalted principles, communicated those very volatile and active principles to him.”

We need not be surprised, therefore, at the minute, and to us somewhat absurd, directions regarding the kinds of food to be eaten, for they all had excellent authority for their promulgation.

The strange and perverted appetite for unusual foods which some prospective mothers possess has from earliest times been noted and commented upon. Pliny called this condition malacia; Gorusæus called it citta, from the Greek equivalent for magpie, possibly because these appetites are as varied as the magpie’s feathers—or because the magpie accumulates strange objects without any apparent reason for doing so. That there is danger in not gratifying these desires is another time-honored fallacy which is expounded graphically in the poem:

The gastric fibres burn with fierce desire
Of food, and oft unnat’ral meats require.
Then (wonderful to tell) if you deny
The strange request, nor with their wish comply,
Avenging Nature, from unknown designs,
With spots and marks the infant’s body signs.

And! (stranger still) while in the mother’s breast
This passion sways, and rages o’er the rest,
Whatever place she scratches, or besmears
A mark, in the same part, her infant bears.
Hence, oft unseemly moles and freckles grow
On virgin bosoms white besides as snow;
O’er beauteous bodies veins and tumors steal
And, for the mother’s guilt, the daughters feel.

Just where this belief in the origin of moles, blemishes and tumors through prenatal influences arose is not clear; but there is no doubt that it is one of the most ancient and tenacious of the superstitions of medicine.

The ensuing paragraphs deal with the preparations of the mother for labor and her conduct during that ordeal. An episode describing the Garden of Eden then follows, and the eating of the forbidden apple by Eve is pictured:

She ate, she gluttoned on the food, possesst
With all the longings of a female breast,
And thus, betrayed by her impure desire
Began what pregnant mothers yet require.

The origin of the longings and the pains of labor is given in this way an explanation probably as rational as any other which could be attempted. It was an original idea, in a way, for up to this time the wonderful story of Genesis had not been told in heroic poetry, much as it was favored by the primitive painters. Milton was yet to write his “Paradise Lost”—and it is not only possible but probable that he read St. Marthe’s poem, even if he did not profit by it.

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12 Léméry, Louis: loc. cit.
The second book of "Pædotrophia" treats of the management of healthy children from birth to the time of weaning. No mention is made of artificial feeding excepting as supplementary to breast milk. The danger of keeping children too warm and excluding the external air is a point dwelt upon with emphasis by the writer. Directions are given as to the preparation of the mother's bed and the infant's cradle. Van Swieten explained the desire of the child for the motion of the cradle by a prenatal habit of the unborn acquired as a result of having been shaken "this way and that while the mother moves her body." Moschion, too, gave specific directions about the cradle, advocating the type "swinging from ropes."

There are rather minute directions to the midwife, particularly regarding the proper procedure in ligating the cord:

With dust of mastich sweet take care to stir
The finest powder of more fragrant myrrh;
Let this united fill the recent wound,
And with soft wool the shorten'd cord be bound.

In Van Swieten's day hemostatic substances such as myrrh were not used. Among the "Aphorisms" he quotes the French surgeon, Levret, who advises against either binding or cutting the umbilical cord until the child has breathed, and urges that the amputation be made not too near the umbilicus.

The prognosis of the infant based on its cry occupies a small portion of the "Papyrus Ebers"—the oldest written manuscript on medicine. It seems almost incredible that a medical superstition of this type should survive since the day when Moses was a young man, but if it did not survive it curiously reappears in the sixteenth century. Witness the following:

'Tis useful too t' observe, with cautious eye,
The signs, on which all prudent minds rely,
That may foretell long life, or early death,
To the young infant, just endowed with breath,
From languid cries, one knows not to express
But you their meaning, by experience, guess.

The danger of exposing the newborn infant to cold air—a very important point—and one still adhered to, is dwelt upon, as well as the necessity for avoiding extreme heat in summer. Soranus laid down these same principles in the second century, and they are found in the Indian Suśruta. The resuscitation of the child that does not breathe properly is discussed and St. Marthe recommends the use of wine internally, and blowing into the child's nostrils. The editor quotes Dr. Underwood, who advocates blowing into the infant's mouth rather than its nostrils.

Bathing is next discussed. St. Marthe decries the practice of bathing the infant in cold water, comparing it to the custom described by Tacitus among the barbarous Germanic tribes, of plunging the newborn baby in the icy Rhine as a test of hardihood.

In this passage, the translator again quotes Underwood in deprecation of cold bathing of the newborn which he characterizes as "savoring of unnecessary severity." That it was the practice to wash the newborn in cold water even in the middle of winter is attested by Underwood who describes just such a scene in which the infant is "itself in one continued scream, and the fond mother covering her ears under the bed clothes that she may not be distressed by its cries." St. Marthe does not approve of this ancient German practice—

But you forbear, what fame reports of old
The Germans used, a race inured to cold,
To war, to labour from the cradle bred,
And like themselves the infants fared and fed,
The newborn child, yet reeking from the womb
They took to what oft gave him to the tomb;
Lest he should from his father's strength decline
They plung'd him shiv'ring in the freezing Rhine.

After bathing the child in warm water perfumed with musk, it is advised that the infant's limbs be examined for deformities which if found should be corrected at once. From earliest times, among all the nations of antiquity except the Egyptians and the
Spartan Greeks, the practice of swaddling was utilized because of a supposed necessity for keeping straight the limbs of the infant presumably cramped in a curved position for a long period before birth. Salting, that is, rubbing the newborn with salt, was also practiced. Galen and the ancient writers advised this procedure, possibly to help in removing the greasy covering of the skin of the newborn. Both of these time-honored customs are described and commended in this poem. Dr. Tytler, however, in his commentary tells us that "the ancient method of swathing children with tight bandages is now justly laid aside."

Little food is needed at first, says the poet. The ancients of Greece and Rome used honey and water as the first food of the baby. Soranus said that no other food should be given for forty-eight hours after birth. This, too, St. Marthe approves of, saying:

No sugar is so good, no fruit so fine
No milk so rich, nor nectar more divine.

Narbonne honey is the especial variety endorsed by the poet. Dr. Lémery also praises Narbonne honey because, he says, it is largely made from rosemary flowers. Honey was the sugar of the ancients: Virgil called it "celeste donum," and Pliny "divinium nectar." Pythagoras, who lived to be ninety, attributed his long life to the liberal use of honey, while Pliny relates how one Vedius Pollio, who lived to be one hundred, told the Emperor Augustus that he had retained vigor and years by the use of honey within and oil without. As a matter of fact, honey containing a readily digested sugar was very well adapted to the purpose for which it was used in the infant feeding of antiquity.

St. Marthe believed in fresh air and combated the tendency found even today in France, of keeping infants in close, ill-ventilated rooms:

Misguided fondness make our nurses err
By heating infants and excluding air.

Not a very good rhyme, but a very good idea. He relates at length the tragic death of the son of Francis II, duke of Brittany, which he attributes to this custom. The pernicious practice of treating acute fevers such as smallpox with heat and exclusion of air survived for many generations after this poem was written, and it is certain that St. Marthe's innovation was severely criticized by the physicians of his day.

The practice of wet-nursing is roundly condemned by the poet, as well as the custom of feeding other things than the mother's milk. Van Swieten writes of the virtues of the first thin milk of the mother and quotes Munro, the great Scottish physician, in corroboration. The use of pap made from milk, or broth, Van Swieten condemns as being "altogether unfit" at this time. "A few hours before," he says, speaking of the infant, "it lived upon its mother's humours; humours of like nature are ready in the breasts, prepared in the mother's body."

Like Tansillo, St. Marthe adds some directions as to the choice of a wet nurse. A test for the quality of breast milk is also given—the finger-nail test.

Avoid what on your nail too ropy proves
Adheres too fast or thence too quickly moves.

Who first described this test? It is found in Soranus' text book in the second century and its very simplicity probably made it survive the assaults of time.

A proper regimen for the nursing mother is prescribed by St. Marthe. Fresh air is again praised, and exercise in the open where there is sunlight. Occupancy with household tasks, too, is urged as wholesome and even necessary. The technique of nursing is described—including the necessity for cleanliness, frequent washing and the removal of the first milk. And here is sensible advice as to the quantity of food:
Think well, beside, what his young frame may bear,
For, strong or weak must different methods rear,
If healthy, copious nourishment is good
If sick or feeble, spare the grateful food.

During dentition he warns against feeding the child too much, and advises giving solid food only after the teeth have come. But he also counsels:

Be light and easy still what e'er he eat.

A list of undesirable foods is given, including sweets, meat and other "heavy viands." Some quite modern directions follow:

When now you change, and give but half the breast,
Food most resembling milk is still the best;
Hence nurses give, nor shall the Muse dissuade
Broth by itself, or often mixed with bread.

Flour, meal and cereal gruels are also described as appropriate foods. Modern mothers might well heed the following:

But trust not always to his infant cry
Which not from thirst or hunger constant springs,
But oft from gripes that indigestion brings.

This, of course, is far from lyrical and let us hope that it glided more smoothly in the original tongue; but it is splendid hygiene.

The mother should nurse the child, partly or wholly when possible, for two years, St. Marthe declares. The period of breast-feeding has apparently steadily been growing shorter. In St. Marthe's day the average was two years, while in Tytier's time, two centuries later, it had contracted to six months. Underwood proposed one year as the proper period—provided the child has good digestion and has cut at least four teeth. Today it is nine months. Directions for weaning—mostly quite sensible directions—are given, and there are numerous annotations from Underwood by the translator.

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The second book of the poem closes with a description of the civil wars of France under Charles IX, and an elegy to the memory of St. Marthe's friend, "Damon," who was killed in the civil strife. "The original," says the translator, "may be compared with the finest parts of Ovid." Whatever the style may have been in the original Latin, there can be no doubt that the poem itself was an admirable adventure

New York: Paul B. Hoeber, 1919, vol. i, 177,
"Some Seventeenth Century Writings on Diseases of Children" by George F. Still; and "The History of Infant Feeding from Elizabethan Times," Proc.

"Péidotrophia," may have taken St. Marthe's statement literally, or possibly had earlier authority for the dictum that "tears are serous Humors which the brain discharges through the eye." Here was a real anatomical basis for the propriety of crying. No poet of the sixteenth or seventeenth century in the face of this could speak of tears as "idle tears," or say "I know not what they mean." Daily bathing is prescribed, and again fresh air.

Amuse him often with some blithesome tale
And take him out to breathe the balmy gale,
When air is pure, when clouds, when vapours fly,
And favouring west winds sport along the sky.

It was believed by some later writers, at least, that tears literally cleared the brain. James Primerose in his "De Morbis Puerorum," published about a century after

James Primerose: "De Morbis Puerorum." Also in "Contributions to Medical and Biological Research Dedicated to Sir William Osler, Bart., M.D., F.R.S."
into preventive medicine, displaying a great deal of common sense and freedom of thought on a subject which the author found overgrown with absurd tradition.

The third book of "Pædotrophia" deals with the treatment of diseases of infants. While his hygiene was excellent, so much cannot be said for St. Marthe’s diagnosis and treatment.

Among the disorders treated are thrush, ranula, teething, indigestion, worms, eruptions, smallpox and epilepsy. Smallpox, which evidently existed in the poet’s family, should not be treated by sweating and exclusion of the air—such is the rather revolutionary statement which he makes. Apparently this good advice was little heeded by succeeding generations since the treatment of fevers by heat, starvation and exclusion of air and light continued for full three centuries.

Of course we laugh at the therapeutics of the past—just as future generations will laugh at our remedies. Even at this date, however, we have not greatly improved the treatment of certain conditions. Lack of intestinal action was treated in the infant of St. Marthe’s time by the administration of honey. The suppository made from the root of the mallow was also used in obstinate cases. Intestinal parasites in children are treated today with santonine, the active principle of santonica or wormseed. Yet wormseed was the remedy used in the sixteenth century, and even before that time.

Use chief the chaffy seed, renowned in fame
That from the worms itself derives its name . . .
This proves a certain cure, nor need I mind
What other we from old physicians find.

For epilepsy mistletoe was recommended—and no doubt was quite as effectual as many of our more modern remedies, which is really not overpraising it. Less useful was another remedy suggested:

Or burn a human skull to ashes white
And with fine powder of those horns unite
That from the heads of deer like branches come
And add the fragrance of Arabian gum.

And yet, the use of remedies such as the foregoing was so general in his day, that it is a tribute to the poet’s good sense that he did not endorse a greater number of them.

"Pædotrophia" ends with a pious invocation and a wish that the desire of King Henry for an heir should be granted—a wish that no doubt brought the poet much favor.

All in all, these ancient poets did a good work, sowing in the ages long past the seeds that developed in our modern work in infant welfare. While there are many things in these verses that violate all the proprieties of poetry and the canons of lyric art—many passages even ludicrous to the modern reader, yet in the spirit of such compositions there is much to praise, much to endorse and, in all fairness be it said, surprisingly little to actually condemn in the nursing technique which they taught, or hoped to teach to the mothers of their day and age. And they are especially useful to the student of the history of the nursing art, since they were written in a period when the physician affected to consider the care of the child and its nursing a matter for midwives alone, in fact, the subject was thought to be rather beneath the doctor’s dignity. Even the earlier textbooks on diseases of children seem to apologize for introducing matter relating to nursing. So it was that these popular nursing manuals of the sixteenth century were written by laymen for the use of the laity, and contained much information not available in the medical textbooks. Buchan, in the second edition of Armstrong’s work, quotes John Hunter as saying: “Nothing can be done for sick children.” Whether or not Hunter actually made this remark, in his day the medical profession acted as if they believed it; and so the initiative in infant hygiene propaganda as exemplified in these old verses of the sixteenth century should be credited to the singers of songs rather than to the prescribers of pills and potions.
WALTER HARRIS, A SEVENTEENTH-CENTURY PEDIATRIST

By JOHN RUHRÄH, M.D.,
Baltimore, Md.

PEDIATRICS is a modern specialty, and the practitioner or investigator devoting his whole time and energy to the study of the diseases of infants and children is inclined to think our knowledge of the subject a thing belonging to the very end of the nineteenth century and to the twentieth. Payne has very aptly styled the present era "the Age of the Child." It is interesting, therefore, to look backward over the centuries and try to see what the medical men of other times thought or knew about morbid manifestations in the young. Garrison has given a delightful account of the history of pediatrics (soon to appear), to which the writer owes any knowledge he may have of the subject; and he is indebted to the same generous donor for the stimulus and the opportunity to study the books of the early writers.

Children were not entirely neglected by the ancients; Hippocrates and Soranus in the olden days, Avicenna and Rhazes later, and in mediæval times Metlinger, Bogellardus and Roelants (the last better known under the name of Austrius, who appropriated his writings with scant acknowledgment), all devoted a certain amount of attention to the little understood subject, writing either separate treatises or including material dealing with children in their works. Then came Felix Würtz, a delightful old character of Basle, a surgeon who wrote down what he saw or believed, and produced one of the first contributions to pediatrics based on personal observation and not on academic discussion. After Würtz came Walter Harris, a pupil of the doughty Sydenham, the master who is said to have advised him to study Don Quixote as a preparation for the study of medicine; a jest which the great master is also said to have made to Richard Blackmore, and perhaps truly, as even in these days, we know how a prosperous saying will be used over and over again. We may suspect the worthy old doctor of something of the same spirit in the remark he made about Harris' book, which Harris takes great pains to quote:

"I might add, and positively affirm, that the same excellent Author, after he had vouchsafed to read the first Edition of this Book, was pleased, out of his great good Nature, to speak to me in the following Words: 'I never flatter any Man, nor shall I flatter you, when I tell you, that I never before saw any Book that I had Reason to envy. For in Truth, I think your little Book may be of more Service to the Publick, than all my own writings.' I do not mention this from any Principle of Vanity, Self-Love, or ill Design, but as it were from the Impulse of some hidden Reason. For of what Use is Flattery, or vain popular Applause in an advanced Age? Or what can an undeserved Commendation signify to a Man, who is just leaving the Vanities of this World?"

Of Harris' life we know but little. The "Roll of the Royal College of Physicians" furnishes nearly all the biographical information which we possess. Short accounts are also given in Haeser's "History of Medicine," by Norman Moore in the "Dictionary of National Biography," and there are a few notes here and there in some of the various collections of medical biography, such as Bayle and Thillaye or Jourdain.

Harris was born in 1647, at Gloucester, England. He was sent to Winchester
School and from there to New College, Oxford, where he received his degree of B. A. on October 10, 1670. He then changed his creed to become a Roman Catholic, and resigning his fellowship journeyed to France, where he studied medicine, finally taking his doctor's degree at Bourges on July 20, 1675. In the following year he returned to London. In 1678, in consequence of the Oates plot, all Roman Catholics were ordered to leave the metropolis. This caused Harris to recant. He left the Church, publishing an article entitled "A Farewell to Popery." In the following year, 1679, he received his doctor's degree from Cambridge, and on April 5, 1680, became a candidate of the College of Physicians, being one of the censors in 1688, 1698, 1700, 1704 and 1714. He was treasurer from 1714 to 1717 and consilius from 1711 until the time of his death.

In 1581, in the twenty-fourth year of the reign of Queen Elizabeth, Richard Caldwell, M.D., a fellow of the Royal College of Physicians, and Lord Lumley, founded a surgical lectureship and endowed it with fifty pounds a year, laid as a rent charge upon the lands of Dr. Caldwell and Lord Lumley. The early lecturers were appointed for life, but later on the period was changed to five years, and since 1825, the lecturer has been nominated annually, but generally two years in succession. The Lumleian lectureship was held by distinguished physicians; but strangely enough, most of their names are not familiar. William Harvey expounded his views on the circulation as Lumleian lecturer in 1616. Richard Bright held the position in 1837. It is pleasing to note that Walter Harris was appointed in 1710, and held the position until his death on August 1, 1732. In 1711, he lectured on "De Ossibus Capitis," in 1714, on "Phlegmon," in 1715, "De Ersipelate et de Morbis Cutaneis," and in 1716, "De Febribus."

Another honor accorded Harris was delivering the Harveian oration on several occasions. This lectureship was founded by Harvey himself, who conveyed his patrimonial estate of Burmarsh to the college. This was left to promote friendship; once a month a collation was provided for such as came, "and once every year a general feast for all the fellows: and on the day when such feast shall be kept, some one person of the College . . . shall make an oration in Latin publicly." Harris delivered orations in 1699, 1707, 1713, and 1726; that of 1707 was printed.

In passing, one might comment on this pleasant custom of breaking bread together, one of the best ways of getting acquainted and fallen too much into disuse by the modern medical societies.

As a physician Harris was a pronounced success, and enjoyed a large and fashionable practice in the gay whirl when good Prince Charlie reigned as Charles II. Then came the Revolution, and on the recommendation of Archbishop Tillotson he was made physician to King William. These connections brought him into greater prominence and he enjoyed an intimate acquaintance with royalty, as King William took him to Holland on one of his campaigns, and their discussions on the absorbing topic of gardening led to Harris' publishing a description of the King's Palace and Gardens at Loo.

In 1694, Queen Mary caught smallpox, which developed into the hemorrhagic variety, and she died on the eighth day. Harris sat up with her on the sixth day of the disease. This case of smallpox led to some difference of opinion and involved the famous and thoroughly delightful John Radcliffe, three years younger than Harris, and at the time physician to the Princess Anne. According to Bishop Burnet, Radcliffe was regarded as negligent and unskillful and he was blamed for the Queen's death. He himself, however, thought differently and stated that "her majesty was a dead woman, for it was impossible to do any good in her case, when remedies had
been given that were so contrary to the nature of the distemper; yet he would endeavour to do all that lay in his power to give her ease." Harris was among those present at the necropsy. One cannot passRadcliffe by without quoting the well-known anecdote of that sharp-tongued physician: "In 1699, King William, after his return from Holland, sent for Radcliffe, and, showing him his swollen ankles, while the rest of his body was emaciated, said—'What think you of these?' ‘Why truly,’ replied Radcliffe, ‘I would not have your Majesty's two legs for your three kingdoms’.

As to Queen Mary's case, Harris himself attributes her death to her taking the advice of Dr. Richard Lower, given years before. Lower advised the Queen, when she was indisposed, to take a large quantity of Venice treacle on going to bed and so promote sweating. About two years before her fatal smallpox, she told Harris of this and he advised against the practice, warning her that "your Majesty will some time or other undergo an extreme Hazard of your Life from a Medicine so intensely hot, whensoever you shall be seized by a permanent and continued Fever." He goes on to relate:

"However, this justly admired Queen, forgetting all that I had said, and fixing the famous Lower's Advice firmly in her Memory, was pleased, at the first Attack of the Small-pox, to take Venice Treacle the first Evening, and finding no Sweat appear as usual, she took the next Morning a double Quantity of it, to throw out a Sweat in vain, before she asked the Advice of the Physicians. Thus it pleased the most wise Governor of all things, suddenly to translate the best of Queens from her unworthy People into Heaven. Never was any Mortal bewailed with so many Tears, such sincere Lamentations, and such universal Sorrow, not even the most beloved Parent by the most darling Child. For not only the Loss of the Queen was deplored, but the Ruin also and Destruction of the whole Kingdom was at that Time apprehended. But the vehement Grief which the Remembrance of so great a Calamity always renews, is much lessened to me, when I recollect that I pointed out the Rocks on which she was cast away, and admonished her of the future Danger."

He continues with an account of Her Majesty's fatal illness of which he gives a graphic description.

Harris was the author of a number of works, for the most part containing the substance of his lectures at the College of Physicians. The following list is given in the "Roll of the Royal College of Physicians":

Pharmacologia Anti-Empirica; or, a Rational Discourse of Remedies, both Chemical and Galenical. 8vo. London, 1683.

De Morbis Acutis Infantum. 8vo. Amsterdam, 1698.

De Morbis aliquot Gravioribus Observationes. 8vo. London, 1720.


Dissertationes Medicæ et Chirurgicæ. 8vo. London, 1725.

Following the account of the diseases of children in the English translation are some seventy-nine pages entitled: "Book the second. Containing Observations on several grievous Diseases." He begins:

"I have thought it not improper to add a few Cures of grievous Diseases, which perhaps will not be very displeasing, and not altogether unprofitable to the Reader. If I relate but few Observations, there will be the less waste of Time, and the Reader will not spend many good Hours idly. Let others, who love a commendable Leisure, or who have immense Treasures
of Science, or who can as easily root out any Diseases, as kill Flies, or tell Stories, let such furnish out a Medical Banquet, furnished with a sufficient Number of Observations, to satisfy the voracious Appetite of the most greedy after Learning. A frugal and philosophical Repast is at present sufficient for the Narrowness of my Circumstances. Nor is a sober and sparing Table to be quite despised, especially by Physicians, who are used to impose a Rule on others in every thing, and commonly deliver rigid and temperate Rules of preserving Health.”

There follow observations on epilepsy, palsy, diabetes, quinsy, and the like. In commenting on the use of turpentine in the relief of the flatus encountered in cases of palsy, he takes a literary flight:

“But it is not so easy to explain, as it is true to affirm, that wandering Flatus’s in the Body are the immediate and nearest Cause, both of manifold Pains which torture the Miserable, and also of this Disease, which is in a Manner anodyne and insensible, distinguished rather by a Stupidity than Pain. The Theory of Flatus’s flying through the Body, seems as hidden and unknown to us, as the Nature of stormy winds, when they war sometimes in the Sky with a great Noise and thundering, is a hard and difficult philosophical Speculation. And, indeed, as Winds sometimes raise Storms and Tossing of the Waves from the Bottom of the Sea up to Heaven, as they sometimes cause Tremblings and Earthquakes, when they are inclosed in the Bowels of the Earth; so do Flatus’s, being bred and shut up in human Bodies, cause Gripings, racking Pains, and Convulsions.”

The remaining thirty pages of his book are given over to various phases of venereal disease. He appreciated their seriousness and their devastating influence.

“The first State of this Distemper, which affects only the Pudenda, may be slighted, and made a Jest of by our Beaux and Rakes, who are wont to look upon it as a Matter of small Concern; but whenever that first Degree of Contagion, or the following ones, shall at last get into their Blood, and spread the Poison through the whole Body, they will abundantly suffer the Punishment due to their Follies.”

The modern vice crusader and the propagandist of the scientific control of venereal diseases might well quote Harris. Both classes write and teach as if they had discovered a new thing, as if no one before in the history of the world had ever suggested the methods now in use. The more one reads the earlier writers, the more one believes the dictum of Solomon. If not new, neither is his suggestion correct, as it only involves one part of the problem. Listen to Harris:

“But this we know for a Certainty, that there were formerly a great many Hospitals built among us for the Reception of leprous Persons; and I am much mistaken, if we have now so much as one single House remaining for the Reception of those who are afflicted with the Leprosy. The same Cause of venereal contagion has always exercised his Tyranny, namely, the casual and promiscuous Use of Harlots; and there has never been any Age without infamous Strumpets, who have made a vile profit by the Prostitution of their Bodies; now the Cause being given, the Effect also is given, as the Effect is taken away when the Cause is taken away. For in whatsoever Countries or Places, those Prostitutes and common Corrupters of Youth are driven far away, and the Severity of the Laws restrains all whoring, there this Disease is also banished together with the impure Harlots. But wheresoever Brothels are per-
mitted, either by the Remissness or Con-
nivance of the Magistrate; or where-
soever strumpets can securely acquire
impure lurking Places; there this Plague,
with its horrid Train of Evils, and all
it’s Family of Miseries, prevails far and
wide. And, in my Opinion, this Disease
is as certainly and naturally produced in
the impure Wombs of common Pros-
titutes, who mix their Embraces with
many different Men, as Lice and Fleas
are produced from Filth and Unclean-
liness. And because the Corruption of
the best is always the worst, may not that
venomous Disease be naturally produced
by the depraved and incongruous Cor-
ruption of the prolifick Seed, which is
designed for such great Uses of Nature?”

Lack of space prevents quoting some of
our author’s statements about the origins
of venereal diseases. He calls attention to
certain Hippocratic descriptions, to various
current opinions, but in the end he says:
“I shall leave the Learned at full Liberty to
dispute.” He pays an eloquent tribute to
the quacks and pretenders, and he tries to
inculcate the same lesson as that taught
to-day by the United States Public Health
Service in their Bulletin, and on the plac-
ards exposed in certain places, and thus
familiar, at least, to all who patronize the
Pullmans.

“But what Sort of Physicians are
these? Why, truly, Taylors and Black-
smiths most commonly, and such like
Artificers, idle Ale-housekeepers, and
Cooks, who have already lost their Credit
in their own Shops. How unhappy there-
fore and miserable is the Condition of the
Infected, who suffer double Punishment,
and are condemned not only to the Tor-
tures of a most cruel Disease, but also to
the dangerous Ignorance of an unskilful
Quack! As if any of the slightest Dis-
orders stood in need of the Skill of a
Physician, and the most doubtful of all
Diseases, that is quite fixt into the Mar-
row, might safely be committed to the
most illiterate Fellow!”

In closing his little book on several griev-
ous diseases, Harris sums up in a page or so
his via vitae and it is a page written by a
sound philosopher or at any rate by a fol-
lower of sound philosophy, whether one
accept the Ciceronian view of death or not.
He counsels honesty, freedom from avarice,
charity, helpfulness and courage. In a sense,
his philosophy is pragmatic and not unlike
that of Corin, the shepherd, in “As You
Like It.”

“I may seem to have described the
Violence of this Disease with more
Severity, than some Pretenders to Phy-
sick, who are wont to slight it, and look
upon it as nothing; that they may make
an Ostentation of a certain exquisite Art
which they have somewhere learned; but,
in Reality, in order to pick the Purses
of the Unwary, to oppress their Acquaint-
ance, and to turn everything unjustly to
their own Gain and Profit. But it is far
better for an honest Physician, who has
been instructed in the Liberal Arts, to
speak the Truth, rather than to be
seduced by any Gain, and to prefer the
common Advantage to his own. Let no
one repent of having a moderate Fortune,
provided it be honestly acquired. For a
little sometimes satisfies our Desires, and
a great deal seldom satiates the Mind.
A moderate Plenty of things necessary
for living well and conveniently is easily
supplied, and is seldom wanting to good
Men. But in heaping up Superfluities,
there is commonly no End of most griev-
ous Cares, no Weariness of the greatest
Troubles, no Bound of Rapines; as if
that dreadful Execration, or Fascination,
always accompanied the Unjust and
Avaritious, that they should be poor in
the Midst of Wealth, and be condemned
to spend a very unquiet and penurious
Life in the Midst of Abundance. Our short Lives slide away with a precipitate Course. And there is no need of a great Pomp of Provision, to make the Journey agreeable, nor is so great a Plenty necessary to be laid up for so short a Way. I think it well done by them, who pass their lives in doing well. Nor should wise Men lament the Death of the Body, which is followed by the Immortality of the Soul. For then at last it is manifest that we live, when we are departed out of this Life. How excellently did the Philosopher speak to this Purpose, when his Breast was swelling with Hope, full of Consolation, and his Mind greatly aspiring to future Joys, when he was approaching to old Age, and nobody praising it? If I err in this, says he, that I believe the Souls of Men to be immortal, I willingly err: Nor will I suffer myself to be persuaded out of this Error as long as I live.”

The little book on diseases of children was the popular treatise from his time until it was supplanted in 1784 by the work of Michael Underwood. The first edition was printed at Amsterdam in 1689, while Harris was in Holland with King William. It was reprinted in 1705, 1720, 1736, 1741, and 1745; translated into German in 1691, French, 1738, and twice into English, 1742 (Norman Moore). The English translation was by John Martyn, F. R. S., professor of botany at Cambridge, and the title-page states that it was “written originally in Latin by the late Walter Harris, M.D., Fellow of the College of Physicians at London and Professor of Chirurgery at the same College.” Martyn states that a previous translation into English “was in a most uncouth style.” This having been out of print, the 1742 translation was published with a translation of the author’s observations on several grievous diseases. Martyn states that “he wished that the learned author had used rather less prolixity in his writings and been more sparing in his “Digressions.” He wisely also omitted “the long enumeration of the Titles of the Illustrious Parents of the Doctor’s Infant Patients.”

Harris was a conceited man, of that there can be no doubt; and had Fate been kind enough to spare us his portrait there is no doubt he would have shown it in his face. Still, he disclaims any credit for his work in his preface, where the modern psycho-analyst would shrewdly discern that in attempting to keep away from a subject he overstepped it in another direction.

“For let a Piece be ever so well written, yet we ought by no Means to suffer ourselves to be proud of it. For the highest Wisdom and Knowledge of Men seems to be that which places our common Folly and Ignorance before our Eyes. And the more any one exceeds others in being conscious to himself of this common Ignorance of Things, and Deficiency of right Reason, the more I think him superior to others, and to obtain the first Place in Knowledge.”

Physicians are not able to do much for suffering humanity. Among the causes of their inefficiency Harris gives the following:

“Because of the usual Delay of sick Persons, and their foolish Procrastination, before they will consent to send for a skillful Physician; because of the great Abundance of Medicines, both simple and compound, and the avoiding of too much of a candid simplicity of prescribing, instead of which has succeeded a fine and glorious Method, but more fallacious in the Variation of Remedies, for fear the Learned should seem to others to be not sufficiently instructed in the Knowledge of the abundant Profusion of Medicines; and also because of the necessary Variation of the Method of Cure in different Countries and Climates, which is also to be changed in the same
Country, according to the various Seasons of the Year; and, because of the successive Change of Helps in almost every Age, according to the Modes of Practice that prevail; and, lastly, because of the different Opinions and dissimilar Doctrines of learned Men, who eternally differ from each other."

The difficulties and discouragements of pediatric practice made a deep impression on Harris and he is at pains to let it be known, just as he also points out what he regards as an infant and the diagnostic methods to be pursued in dealing with such uncommunicative creatures.

"I know very well in how unbeaten and almost unknown a Path I am treading; for sick Children, and especially Infants, give no other Light into the Knowledge of their Diseases, than what we are able to discover from their uneasy Cries, and the uncertain Tokens of their Crossness; for which Reason, several Physicians of the first Rank have openly declared to me, that they go very unwillingly to take care of the Diseases of Children, especially of such as are newly born, as if they were to unravel some strange Mystery, or cure some incurable Distemper.

"There can be no Doubt but that a perfect Cure of the Diseases of Children is as much to be desired by all, as any Thing else whatsoever in the whole Art of Physick. Nor is it of consequence only to the noble, the powerful, and the wealthy, who are desirous of having Heirs, and preserving them, but to all Parents of any Rank whatsoever; for Nature has instilled into all Men an almost invincible Love and Care of their own Offspring. Wherefore I shall think myself happy, if I can strike out a few Hints, which others of greater Abilities may improve, and bring to Perfection."

"By an Infant I mean not only with Galen, one of a Month, two Months, or at most three Months old, but in a more extended Sense, as it is commonly understood, a little Child something older, as far as to the fourth Year. Under the Name of a Child I comprehend all from that Age to the fourteenth Year. And the younger the Patient is, the more easy will be the Cure of any severe Disease, as I have found from the best Reasoning, confirmed by manifold Experience. For any Impression, either good or ill, is sooner made on the moist than on the dry, on the soft than on the hard, tho' in the dry and hard, when it is once made, it continues longer. Infants fall into Diseases the most easily, and unless they are unskillfully or too late taken care of, are most easily restored to Health.

"The Diagnostick of the Disorders of Children is not to be formed from their own Account, or from the Consideration of their Pulse, or from a curious Examination of their Urine, so much as from the Answers of their Nurses, and of those who are about them. For the Women are able to tell whether they are sick and vomit, and how long they have done so; whether they throw up Milk or Food curdled; whether frequent Cries, Watchings, and Uneasiness, discover them to be griped; whether they have sour Eructations or Hickups; whether they have any Cough; whether their Stools are larger, smaller, or more frequent than usual; what Colour they are of, whether white, green, or of the full yellow Colour of the Bile. They can tell whether they have little Ulcers, called the Thrush, spreading in their Mouths and interrupting their feeding. If you ask them, they can answer whether they have Convulsions, greater or less, of a longer or shorter Continuance, and whether they have frequent or seldom Returns; they can see whether any Part of the Gums grows white or swells, and therefore, whether it is their being about
their Teeth that disorders them; lastly, whether there is any Thing else of Con­sequence, whether they have a Swelling of the Abdomen, or any other Part, whether they have any Eruptions or Pustules, and whether a yellow or red Colour appears externally. As for most other Enquiries, they seem to me to belong rather to subtle Speculation than Practice.”

Hereditary influence in the production of disease in children was correctly estimated by Harris, who states that “the Knowledge of the procatartic Cause must not be totally omitted.” He dwells on this and adds an interesting little paragraph on eugenics:

“There is no one who will deny, that there are hereditary Diseases, proceeding either from one or other of the Parents; or question but that the Gout, Epilepsy, Stone, Consumption, etc. sometimes flow from the Parents to the Children. Whole Families proceeding from the same Stock, often end their Lives by the same Kind of Disease. For the prolific Seed often so rivets the morbid Disposition into the Fœtus, that it can never afterwards be removed by any Art or Industry whatsoever. But let those who prefer a strong, vigorous, and healthy Offspring before Money, take care to avoid epileptic, scrophulous, and leprous Mothers.”

With the passing of the mint julep of the South, the only julep which the mind conjures up at the mention of the word, it is not uninteresting to read a paragraph on the juleps of Harris’ day and of the pearl julep and others later on.

“The modern Juleps by the Way, derived from Distillation, were wholly unknown to the ancient Physicians. Water, Wine, Ptisan, or a Decoction of decorticated Barley; Melicraton, or an extemporaneous Mead; ὀίνομέλι, or Vinum passulatum, a Sort of Raison Wine, being expressed from dried Grapes; Sapa, or boiled Wine; Posca, Oxycratum, or Vinegar mixt with Water, were almost all the Juleps that were used by our Ancestors, in the Practice of Physick. But whether these Juleps of the Ancients, on Account of their Simplicity, Smallness of Expence, and ἐκτροφία or those in modern Practice, because they are more agreeable to the Palates of the Nice, and Desires of the Rich, ought to be preferred, I shall leave to the Determination of the sagacious, skilful, and honest Physician.”

Harris knew full well the importance of correct diet in early life and cautions especially against errors in this regard. He condemned the use of flesh in infancy and stated that the results of this regimen are “almost inseparable from the overfeeding of tender Infants.” Also, “Crude and undigested ailment necessarily produces a Putrefaction of Humours: from which Putrefaction not only Worms are generated, but various and grievous symptoms, by which the poor Wretches are wasted, very often depended upon it.”

In these dry and parlous days (July, 1919), Harris’ views on wine may not be amiss. Correctly he is against its use in early life, as was Galen of old, and there are those who agree with his decision regarding later life.

“The nearer any one approaches to old Age, the more does Wine moderately taken usually agree with him. For the languid Heat of old Men evidently stands in need of spirituous Helps, which are plentifully supplied by Wine, both for the Preservation and Increase of their natural Heat. Wherefore the Nature of Infants, being the most remote from that of old Age, is greatly injured by Wine, for their Nerves being exceedingly weak are easily destroyed thereby, and their tender Bodies are gradually dissolved, or else
rush hastily into feverish Flames, by the subtle Heat of Wine.”

How delighted, however, would the Westerville set and their followers be over the following paragraph! It reminds one somewhat of the descriptions in school physiologies.

"Wine of all Sorts taken too freely, as well as all Sorts of Spirituous Liquors, destroys the natural Ferment of all Stomachs, especially of those of Children: they impair the Appetite, burn up the Coats of the Stomach, and wrinkle them like Parchment that is scorched by the Fire; but they most of all injure the nervous Coat, which in this Case is of the greatest Moment, and by Means of this Coat, weaken all the Nerves of the Body, and most certainly drive the animal Spirits into all Sorts of Confusion. What does the least Injury to this tender Age is White Wine, which was accounted cold by the Ancients, but is not absolutely cold, but only comparatively with Regard to other Wines, whether red, tawney, or yellow. But Galen, as was said before, forbids Children to taste any Wine at all.”

In another place, after reviewing the modern writings on acidosis, the present writer was tempted to paraphrase Pilate’s query: “And what is acidosis?” We present-day moderns, as many now agree, are too prone to the vulgar error that our own opinions are new and original. As a matter of fact, for the most part, they are neither. Ideas do not die. They fall asleep, perhaps for centuries, and then come to life often simultaneously in several different places as a “Schwebender Gedanke.” Witness Garrison’s account of the caduceus used as a medical symbol by the Babylonians and disappearing to bob up in England and Switzerland in the sixteenth century.

To read the moderns is to believe that acidosis and alkalies as a cure date from yesterday. If ever any one lived who thoroughly believed in the noxiousness of acid and in the effectiveness of testaceous remedies it was Harris. Of the latter we shall speak further on. Of acidosis he says:

“All the Causes of the Diseases of Infants, which have been already mentioned, and all that may be derived from them, center in one next and immediate Cause, namely, an Acid prevailing universally.”

He describes the symptoms as follows:

“That unequal Condition of the Chyle or Nutriment, constantly owing itself to a predominating Acidity, chiefly produces a Sickness, Vomiting, and sour Eructations. If the Affair is farther prolonged, they grow paler and paler by Degrees, and the discoloured Countenance discovers a Mixture of yellow or green. Then the Stomach swells with Inflations, and flatulent Eruptions are thrown upwards. In the mean Time a red Pimple or two, a sure Sign of an abundant Acid, appears on the Skin, in some upper Part of the Body, sometimes on each Cheek, sometimes on the Chin, sometimes on the Forehead, or Neck, or sometimes lower; and the Infant daily grows worse. He wheezes also, and draws his Breath so hard as to disturb the Ears of those who stand by; [acidosis and asthma] which Symptom is always found to affect him, especially if he is fat, wherewithsoever the Disease is of the acute Kind. Besides, he is often affected with a light, dry, and sometimes suffocating Cough; a dry one, because the Acrimony of the Humours continually vellicates the Branches of the aspera arteria, which are very sensible; a suffocating one, because the Bronchia of the Lungs are grievously loaded with serous Humours distilling upon them, and not finding an
Outlet. Moreover, because they have the greatest Weakness of their nervous System, and have the highest Degree of Softness and Tenderness in their Constitution, therefore they are ready to sink under the violent Agitation of the Breast, being in a Manner suffocated, and black in the Face. But if the Coagulations already mentioned descend presently, as they often do, from the Stomach into the Intestines, they sometimes produce Gripings, sometimes greenish Stools, and sometimes violent Looseesses. But whilst the Tragedy is acted in the lower Belly, either the great Pain of the Gripes lights up an acute Fever, which, if not rightly managed, usually deprives the Infants of their Lives; or else the Pain being a little more moderate, and giving Way perhaps to some unskillful Cure, often ends in a hard Tumour of the Abdomen, [Tabes mesenterica] which in some readily serves to promote the Rickets or King’s Evil."

He paints a gruesome picture of marasmus, convulsions and death, and includes in the list of troubles owing their origin to acid, thrush, ulcers in the mouth, green stools, the watery gripes. [Cf. Howland’s and Marriott’s work on the acidosis accompanying infantile diarrheas and their suggestion of the use of sodium bicarbonate.]

Harris was not modest about his hypothesis, for he immediately starts out to disclaim any honor, a sure sign that he thought it his due.

"Here I shall note by the by, that I do not by any Means seek after the Honour, if there is any to it, of finding out a new Hypothesis, nor if I have found out, or in any Manner established an Hypothesis, do I think it my Business, to force all Sorts of Arguments, even in spite of Nature, as the Custom is, to strengthen and support such an Hypothesis."

He also foresaw a discussion with which he did not propose to bother himself.

"I know well enough, that all the subtile Animadverters, will find fault with this Notion that I have started, of an Acid prevailing in all the more remarkable Disorders of Children."

He goes on to quote at length from Hippocrates and states:

"From these, and many other Things of the same Sort, which are laid down at large in the above-mentioned Book, it is plain, that our Divine Old Man, who excels all others in Medical Knowledge, determined as a certainty, that those secondary Qualities, namely, Acidity, Bitterness, Saltiness, and such Like, being joined with the Symptoms of Heat or Cold, are to be considered chiefly as Principal and efficient Causes of Diseases. And therefore I shall make no Doubt to add that it necessarily follows, that the Cure itself is to be directed in the first Place, not so much to the extinguishing of Heat by Cold, as to the blunting of an Acid, the atempering of a Bitter, the attempering of a Salt, the cutting of thick Humours, and the rendering of such as are thin and too fluid more compact, the asswaging such as are rough, and, lastly, to the opening of the obstructed Ducts of the Body, and freeing them from their Infarctions.

“But before I attempt the Cure itself, it may seem proper, according to usual Custom, to premise some Prognosticks.”

His statement about the seasonal appearance of diarrhea is equally true to-day; we have done little to make any change in it necessary.

"From the Middle of July to about the Middle of September, the Epidemical Gripes of Children are so rife every Year, that more of them usually die in one Month, than in three or four at any other Time: For the Heat of that Season com-
monly weakens them at least, if it does not entirely exhaust their Strength.”

Harris gives Sylvius de le Boë credit for having written about acids as a cause of disease in infants, but he scorns him for his use of narcotics and applies to him the name of the “Opiate Doctor.”

As to cure, Harris wisely insisted on simplicity, which we of to-day applaud; yet some of his prescriptions look formidable enough. On this point he says:

“As their Ailment is the most simple, so the Medicines that are commonly to be given them, ought to be simple, but little receding from their natural State, and for the most Part void of too laborious an Artifice.”

Of the cure another quotation may be used:

“But if we may be allowed fairly to speak the Truth, and so not desire to lose all our Pains and Troubel, those Things which tend directly to subdue an Acid, are the only Things that promote the Cure; but whatsoever do not tend that Way, at least disturb the tender Bodies of Infants more or less.”

His idea was first to neutralize the acid and get rid of it by purgation. The first he expounds learnedly and at length, as the preparation of the acid; finally, after paying his respects to Hippocrates and Sydenham, and skillfully belittling the efforts of others, he comes to the meat of his therapeutics:

“The Preparation therefore of which we are now speaking, is not by any Means to be obtained by Sudorifics properly so called, that is, by Medicines that heat the Body, which are not in any Degree of Advantage to tender Infants or Children, but are found many Ways to hurt them. Whereas things that are quite temperate will securely absorb the prevailing Acidity, gradually assuage the Ebullication, and become powerful and safe Anodynes. Such are Crab’s Eyes and Crab’s Claws, Oister Shells, Egg Shells, Chalk, Coral, Coralline, Pears Mother of Pearl, oriental and occidental Bezoar, burnt Hart’s-Horn, burnt Ivory, Bone of a Stag’s Heart (the terra sigillate of the ancients), shavings of Hart’s-Horn, Unicorn, Armenian Bole, sealed Earth, Blood Stone, &c. Of Compounds, Gascoign’s Powder, Goa Stone, and Species of the Confection of Jacinth, will obtain the first Place.”

On the choice of these “testaceous powders or absorbents of acid,” he descants at some length, declaring that the cheaper are as good as the more expensive, albeit “For such Things as cost a great deal of Money, and are brought a great Way, are always the best in the Opinion of the Ladies.”

Of the cheaper varieties he has certain preferences:

“But yet if, among many testaceous Bodies of almost the same Nature, I would prefer one before the rest, I should commend common Oister-Shells, such as are found on the Sea-Shoar, and have endured a long Insolation, being ripened into Use by the benign Rays and vivific Heat of the Sun, and thereby far better prepared than by a Chymical Fire, and changed into a bluish or yellowish Colour.”

Of other alkalies, he has not much to say, but dismisses them with the following statement:

“I have designedly made no mention of Volatile Salts, whether they be oily or spirituous; none of Mineral, Lunar or Solar Bezoar; none of Spirit of Sal Ammoniac, none of that of Hart’s Horn; of which Spirits the use is however not to be
entirely exploded with Regard to the most tender: because they excel in a Power of Absorbing Acids; but I would observe, that they are to be used with the greatest Caution, because of the no small Heat that accompanies them. And therefore we have to Reason to extol lixivial Salts, or the hotter Cordial Waters, such as compound Peony Water, Plague Water, Aqua Coelestis, Aqua Mirabilis, strong Cinnamon Water, and such like, unless they are given in a very small Quantity, and so diluted with other more temperate Waters, so as to make their heating Power almost insensible to the Taste."

After going over his ideas on the subject of acid, he comes to the practical part designed to help the "young beginner." Some idea of his practice may be had from the following suggestions:

"But to pursue my Design, for an Infant of a Year old in a Fever, or, as it commonly happens, tormented with the Gripe, we may prescribe as follows:

"Of the simple compound Powder of Crab’s Claws, of each one Dram, divide them into six equal Parts.

"Or,

"Oriental Bezoar, Pearls prepared, and Crab’s Eyes, of each half a Dram, Species for the Confection of Jacinth one Scruple, reduce them to Powder, and divide them in like Manner.

"Or,

"Oyster Shells, prepared without Fire three Drams, Native Sulphur one Dram, Crystal Mineral two Scruples, reduce them to Powder, and divide them into twelve Papers.

"Or,

"Simple Powder of Crab’s Claws one Dram, Crab’s Eyes prepared two Scruples, Cochineal six Grains, reduce them to a very fine Powder, and divide them into six Papers.

"The Infant may take one of these Doses immediately, and repeat it, if necessary, two Hours afterwards, and then once in four Hours, except when asleep, for the first two Days. The Powder may be taken in a Spoonful of the following Julap, drinking another Spoonful after it."

His suggestions as to purges for infants are certainly sound, for after mentioning several, both simple and compound, he sums up with a strong vote in favor of rhubarb:

"Of all the purging Medicines, I know none more suitable to the puerile Age, or more innocent in itself, than Rhubarb, which is so well known, and so much in Use. It brings down the Matter of the Fevers of Infants both gently and safely: it mildly purges the Stomach, nay and the whole Body, of vicious Humours, and strengthens it also; and therefore is the fittest to be given to Infants, Children, women with Child, old Men, and such as are already weak with any Disease. Rhubarb seems better to deserve the Name of Hiera or sacred, than Aloë, which was so wonderfully extolled by the Ancients, and has not been undeservedly celebrated by the Moderns, and holds the first Place, and is the Basis of almost all Officinal Pills. Indeed, on Account of its extraordinary Bitterness, it often deserves no small praise in grown Persons; but because of it’s Acrimony, corroding, and the Heat that it gives the Body, it is not very safe for Children."

The last score of pages digress somewhat from the diseases of children to a sort of rambling philosophy on the nature of things in general. He pays his respects to the "Chymists" and their "Chymicals" which he is none too ready to use; he gets after the "bellows blowers," "quacking operators," and "old women," and gives an estimate of
the worth of the wisdom of the ancients. He closes his treatise in a pious prayer, which shall be our last quotation:

"May the great and good God, from whom, as from an ever inexhaustible Fountain, all good and happy Things continually come down, and on whose Favour and Blessing the happy Success of the Art of Physick chiefly depends, vouchsafe, out of his immense Goodness, to bless what I have faithfully written with a sincere Mind, that it may be for the Publick Benefit, which ought always to be preferred before private Advantage."

Harris was not a great physician, not a master mind, not an original thinker, but he wrote a good book that held its place an hundred years; he was a shrewd and honest practitioner; a keen observer, particularly of the action of drugs, which led him to teach simplicity, caution and common sense. As will be seen from the portions of his work cited, he was au fond one of the soundest of the earlier writers on pediatrics.

Was he bombastic? So was his teacher Sydenham, and the age in which he lived was tinctured with bombast. Was he garrulous? So was his very human contemporary Pepys; so, too, at times, were Hippocrates and Galen. Was he conceited? So have been many men who were successful practitioners but not very profound students of life. Taken all in all, he was a delightful old fellow and one with whom any present-day pediatrician might spend an hour with pleasure and with profit.

JOSEPH RODMAN DRAKE, M.D.

This year marks the centenary of the death of a young American physician whose fame as a poet far overshadows any reputation he might have acquired in his brief life as a physician.

Joseph Rodman Drake was born in New York on August 7, 1795 and died in that city on September 21, 1820. He was buried in a small cemetery in the Bronx, which some years ago was acquired by the city. Drake began writing poetry when but fourteen years old. He studied medicine under Drs. Bruce and Romagne, and received the degree of M.D. from Columbia College. There is no information extant as to whether he ever seriously followed his profession. In 1816 he married a Miss Eckford, the daughter of a wealthy shipbuilder, and it is probable that he then felt at liberty to devote himself entirely to literary work. It was in the summer of 1816 that he wrote the poem by which he is chiefly remembered, "The Culprit Fay." He and Fitz-Greene Halleck, the poet, were the closest friends and wrote much in collaboration. Halleck was at his bedside when he passed away and wrote of him afterwards the familiar lines,

Green be the turf above thee,
Friend of my better days;
None knew thee but to love thee,
None named thee but to praise.
RECENTLY the writer was able to spend some time studying evidences of paleopathology in the principal museums of the Eastern cities, which resulted in a number of new observations on the nature of many ancient diseases. It is thought worth while to present here a discussion of the new facts and those observations which correct previous false conclusions. A full discussion, with appropriate illustrations, will be presented in a treatise on paleopathology, now in course of preparation, showing the relation of these new facts to previous observations, and drawing further conclusions.

Spondylitis Deformans in the Dinosaurs.—Coalesced vertebrae have been frequently seen, described and figured, in the skeletons of the huge land reptiles of the Mesozoic, and Osborn especially has referred to them as being the resting point of the tail, which means, I assume, that these gigantic animals stood erect and supported themselves with the tail, like the kangaroos. The difficulty with this interpretation is that the coalesced vertebrae often occur elsewhere in the skeleton than at the proper point in the tail. Coalesced cervicals are known in Camarasaurus, Diplodocus and Tyrannosaurus, and doubtless close scrutiny of the known material would reveal the lesions elsewhere in the body. The condition was extremely puzzling until a series of five caudals of Diplodocus were studied in the American Museum of Natural History. A fortunate post-fossilization fracture revealed the unaffected articular surfaces of the vertebrae in two places and showed the ring-like growth of the lesion, similar in all respects to the modern advanced cases of Spondylitis deformans, seen so commonly in mammals and in man. Ruffer has reported a case of spondylitis from a Miocene crocodile of Egypt, so the disease is not unknown among reptiles. Its age, however, is greatly extended by the recent observations, and it is probable that further study will carry the antiquity of this peculiar pathological condition far back into geological time.

Spondylitis Deformans in Eocene Mammals.—Definite evidences of similar pathology were observed in two small mammals from the Eocene, one being in the tail, and the other in the anterior dorsal region. The lesions are so similar to those of human pathology that additional descriptions are unnecessary. No evidences of the incipient lipping were definitely observed, though it was suggested in a number of cases. The lesions may not have followed the same method of formation in ancient times which they follow now.

An Ankylosed Elbow-Joint in an Eocene Mammal.—A small, primitive, five-toed ungulate from the Eocene, known as Ectoconus, had in life suffered a fracture of the left humerus immediately above the condyles, resulting in the coalescence of the articular end of the humerus in the olecranal fossa. A pseudarthrosis was formed between the fractured end of the humerus and the radius particularly, though some new joint surfaces occurred also on the ulna. The joint surfaces were dense and eburnated, recalling in their ivory-like consistency, the eburnated surfaces in joint lesions of the so-called rheumatoid arthritis. The fracture had evidently been extremely septic, for the whole lateral surface of the ulna is pitted with necrotic sinuses and roughened

1 Aided by a grant from the Committee on Scientific Research of the American Medical Association.

2 I have seen a similar fracture in the femur of a bison from the plains of Kansas.
with carious bone. In fossilization the bones were all crushed flat, so a detailed study of the joint lesion would not reveal a great deal more than is shown in an external examination. This is the oldest known ankylosed elbow, with an antiquity of many millions of years.

A Subperiosteal Abscess.—The limb bones of the huge dinosaurs of the Mesozoic were seldom fractured, because of their great size and strength. A single limb bone of one of the largest animals has a length of six feet and a weight, as fossilized, of about 700 pounds. But one of the horned dinosaurs of the Edmonton Cretaceous, discovered by Barnum Brown, has suffered an oblique fracture of the humerus which healed in a very bad way, resulting, as Mr. Brown said, “In the sickest fossil bone I have ever seen.” On the anterior surface of the bone the periosteum had doubtless been greatly elevated by an ingrowth of callus, which later ossified into a bridge of bone connecting the lower articular surface with the enormous deltoid crest, and covering an enormous abscess, capable of holding several liters of pus.

Prehistoric Trephining.—The antiquity of this interesting surgical process is clearly established, and there are hundreds of trephined skulls in various museums which yield much information to the student of paleopathology. An interesting series at the United States National Museum reveals a number of interesting points with remarkable clearness. The skulls are from Peru of pre-Columbian age, a very large percentage of which show clearly that trephining was performed by the primitive surgeon to relieve fractures, either depressed or linear. The injuries to which the heads of the ancient Peruvian Indians were subject were made by: (a) Blows from the star-shaped club so commonly used by these people; (b) sling shot injuries, which would produce small depressed fractures often penetrating the two tables of the skull; (the use of sling shots is very common in Peru and men, women and children are adept in the use of this instrument; the process of trephining, if completed, would often remove all traces of this type of fracture if made with a small rounded pebble) (c) blows of other kinds or falls producing fractures; and (d) arrow point injuries. Trephining for any of these injuries falls into four categories, given in the order of frequency; (1) Sawing; (2) cutting; (3) scraping; and (4) boring.

In practice of scraping the outer table was completely denuded over a wide area, often covering six square inches of bone, and the trephine opening made in one margin of the scraped area. Sawing and cutting were done by bronze or obsidian instruments. Doctor Hrdlička showed me some of the obsidian knives which doubtless had been used for this purpose. The plaque of bone removed at the operation was seldom replaced and usually the scalp was drawn over the opening and closed with healing herbs and gums, the use of which were clearly known to the Peruvians of ancient times. Occasionally fragments of gourd was inserted into the opening and fitted to it. Metal was also used. There are some evidences of successful bone grafts in the skull, but their relation to trephining has not been clearly established. The geographical distribution of the operation was curiously irregular, but it spread northward from Central Peru as far as the Rio Grande. In Macchu Picchu no evidences of trephining were found, but from Paucarcancha, Patallacta, and Torontoy MacCurdy has described great numbers of trephined skulls, many of them trephined more than once. One skull in Yale University had been operated upon at five different times; twice in the left frontal, the openings almost contiguous, once in the vertex, once in the right parietal and once in the right occipital.

* Art and Archeology, December, 1918, “Surgery Among the Ancient Peruvians.”
The margins of these openings show clear evidences of healing. Ruffer suggested that trephining was always performed near the vertex because this was the most convenient place, but clearly the Peruvian skulls do not show this. The operator attacked the site of the injury, irrespective of location. Trephining was done on men, women and children, on deformed and normal skulls. There is, however, no evidence to show that the operation was ever performed for the removal of diseased bone, and patches of necrotic bony tissue are fairly common in these skulls. It seems probable that the prehistoric surgeon practiced his operation on dead material and reached his conclusions from experimentation and logical deduction.

Osteoporosis.—This pathological result is often evident in ancient human skulls, and is many times bilaterally symmetrical. Patches of bone in the roof of the orbits, on the parietals, frontals and elsewhere, bilaterally symmetrical, show the dissolution of the bone in the curious rounded openings, largest at the center and becoming smaller toward the periphery. Hrdlicka has described and figured the best known example of this in an adult male skull from Peru. Often, however, porosities occur which are not of this type. They often result in penetrating sinuses through the entire skull wall. Eaton has interpreted one example of this type as due to syphilis. It is probable, however, that there is some relation between these necroses and a curious type of osseous, reticular tumor occurring on the skull, a splendid example of which is in Yale University. It is hoped that Doctor MacCurdy will soon describe this interesting tumor.

Osteomata.—Small ivory-like, smooth, osteomata are often seen on prehistoric skulls very similar, in general appearance, to the button-like growths of eburnated bone seen on modern skulls. Their etiology is doubtless similar. They occur most often on the frontal, and are always single.

**Paleopathology of the Pre-Columbian North American Indians.**—The Indians of North America were relatively free from disease in general, and most of our modern virulent diseases were apparently absent. The greatest difficulty in the study of the ancient diseases of this continent is encountered in the inability to determine the age of the bones exhibiting the pathology. Intrusive burials into ancient mounds and the late formation of the burial mounds, continued for centuries after the white men reached this continent, are responsible for the difficulty. On this account it was especially interesting to learn from Doctor Hrdlicka that there is in San Diego a splendid collection of pre-Columbian North American Indian skeletons from a single locality, exhibiting many forms of pathology. All of this is ancient, and a study of this collection would result in our having a fundamental idea of the types of pathology present among our predecessors, the red men. An interesting ancient cemetery at Madisonville, Ohio, has already been explored and has yielded many types of pathology.

**American Cave Bears.**—Virchow, Mayer, Esper, Schmerling and the other founders of paleopathology did their initial observations on the diseased bones of cave bears of Europe. Esper, in 1776, initiated the subject by describing what he took to be an osteosarcoma on the femur of a cave bear. It is extremely interesting then to observe in the United States National Museum, in a collection of mammalian fossils from the Cumberland Cave deposit of Maryland, diseased bones of a large American cave bear. A right femur shows on the lower posterior surface a wide area of carious roughening, with low, blunt osteophytes. A skull of an ancient pig shows similar carious patches on the left mastoid. This collection, soon to be described by Doctor J. W. Gidley, will add much to our knowledge of disease in the American Pleistocene.

**Pathology of the Clam.**—In the Miocene
of the Eastern States there occurs a large species of clam, known to paleontologists as *Venus tridacnoides*. The shell is immensely thickened and very heavy. Doctor Gilbert Van Ingen of Princeton, to whom I am indebted for calling my attention to this species, regards the form as a pathological race of *Venus rileyi*, a normal clam occurring in the same beds. Thickening in the tests of ancient invertebrates, simulating osteohypertrophy in vertebrates, is fairly common. A careful study of this pathological clam would result in interesting data.

**Definition of the Term Paleopathology.**—The term, so far as I can learn, was first placed in the literature by Doctor Ruffer in 1914, and his definition has been given in a previous paper.\(^4\) The subject, however, had received earlier attention in this country in the paleontological laboratory of the state museum of New York, where Doctor John M. Clarke has done so much on the nature of Paleozoic parasitism, and the intimate association of primitive animals, which was the initial step of parasitism, and which is essentially pathologic. The idea, however, while original with Ruffer, had doubtless occurred to workers in other fields, and while Ruffer properly is entitled to the credit of first publishing a definition of the term, the other workers should receive due recognition.

**Caries.**—I have stated elsewhere that caries of the teeth is fairly common among fossil vertebrates, yet a careful investigation into the matter reveals the interesting fact that it seems to be the rarest form of pathology in ancient times. It is true that Dollo in the mosasaurs, Renault in fishes and Leidy in the mastodon, have described this form of pathology; yet it seems not to be common. Experienced collectors of fossil mammals have never seen a carious tooth. In one of my papers on the basis of the appearance of the photograph I figured what I took to be a carious spot in the lower premolar of a three-toed horse. Examination of the specimen, however, reveals the fact that the defect is a post-fossilization fracture and is not due to disease. Mr. Anderson at the American Museum, showed me some thin sections of a tusk of *Mastodon obscurus* which showed undoubted carious spots along the edge of the dentine. The pathology is, however, not common.

**Regeneration.**—This phenomenon is essentially not pathological but that it often follows traumatism, is my excuse for mentioning it here. Mr. Frank Springer at the United States National Museum showed me some Silurian crinoids which had apparently had an arm broken or bitten off and in the process of regeneration often two arms took the place of the lost one, the regenerated arms being usually smaller than the normal ones. Mr. A. H. Clark, of the same institution, has lately made a study of the pathology of recent crinoids, and his results will be incorporated in Volume II of his forthcoming "Monograph of Existing Crinoidea."

**Necrosis.**—The huge glyptodonts of the Pliocene and Pleistocene of South America, in spite of their heavy armoring of bone on skull, body and tail, were often subjected to injuries which became infected and produced extensive necroses in the bony carapace. Doctor Sinclair of Princeton suggests that these necrotic sinuses were caused by injuries from the saber-toothed cat, which in attacking the glyptodont and finding himself baffled by the bony armor, clawed and bit the carapace of the beast. If the giant Pleistocene cat's teeth and claws were as septic as the modern house cat's are reputed to be, sepsis may well have followed such an attack. Similar necrotic sinuses were seen in the dermal plates of the giant dinosaur, *Stegosaurus*, which bore a huge armament above his vertebral column.

**Opisthotonos.**—Paleontologists on the whole are decidedly averse to accepting the
writer's ideas that fossil animals preserved in the opisthotonos, pleurothotonos, and emprosthotonos, were the victims of disease. One pitfall in the acceptance of this idea is that they all regard these phenomena as being restricted to man, not knowing, as every sophomore medical student knows, that opisthotonos, pleurothotonos, and emprosthotonos, in the order of frequency seen, are extremely common in the laboratory animals in medical schools, whether in pharmacology, medicine, physiology, pathology, or bacteriology. These phenomena are so frequently seen that no one, apparently, has paid any attention to them, for there is no medical literature on the subject, which makes the field a splendid one for investigation. The very meanings of the terms are in doubt. "The Century Dictionary" regards opisthotonos as a disease, which it clearly is not. In view of this uncertainty in the medical world it is no wonder that one paleontologist, Bashford Dean, writing in Science, should say that opisthotonos does not occur in mammals, when as a matter of fact it is extremely common in all forms of mammals, birds, amphibians, reptiles, and fishes. Cats, inoculated with cerebrospinal meningitis, often die during the night and are fixed in the opisthotonic attitude by the "rigor mortis." If the cat were to be fossilized it would be in splendid condition to show the position in which it died, millions of years hence. We can only interpret the past by what we see at the present time, and if opisthotonos is an accompaniment of disease today, it certainly was in ancient times. Another convincing argument is that in ancient skeletons, as in modern forms, opisthotonos is the more common phenomenon, pleurothotonos being less commonly seen. The drying of the ligaments is to my mind inadequate to produce this position, for often heavy-headed animals are preserved in this attitude, and no ligament is sufficiently elastic even in life to draw a heavy head several feet or yards from its normal position. There is no data to prove that ligaments in drying contract, or, if they do, there is no data to prove that the dorsal ligaments would overpower the ventral ones. The pull is exerted by the muscles and tendons, and this pull is stimulated by some neurotoxin upon the nerve supply of these muscles while in a spastic condition. Vertebrates preserved under water would not be subject to drying and they frequently exhibit the above phenomena.

Fractures.—This form of traumatism is extremely common among fossil vertebrates, more so in some forms than in others. Nearly every modern phase of fractures is to be seen among ancient animals, the form of the skeleton, of course, modifying the pathology. A skull fracture, for instance, in an ancient teleosaur, a long-nosed crocodile-like creature, would not be of the same nature as a skull fracture in man. Fractures are especially common in the skeletons of Moropus, a large, heavy, clawed ungulate of the Tertiary, with much the appearance of a horse, though the fore limbs are longer than the hind, and are provided with huge claws. These Chalicotherioidea must have had a pugnacious disposition, for they suffered many severe fractures of the skeleton. There are many dozens of fractures evident among the five or six thousand bones of this genus preserved in the American Museum of Natural History. Fractures in this animal are interesting to the paleontologist as indicating something of the habits of life of the animals; but to the medical man the fractures are interesting in the form of pathology which is evident. Fractures in the skeleton of this beast will be described and illustrated in the forthcoming treatise on paleopathology.

Paleopathology, as Depicted on Ancient Peruvian Pottery.—Ruffer especially has called attention to the representation of

\(^{8}\) April 11, 1919.
certain forms of pathology among the ancient Egyptians, in their stelae, tomb sculpturing and other archæological objects; and his results, as well as those of Hamburger and Charcot, are well known. It is perhaps not so well known that the ancient inhabitants of Peru had a similar custom, although attention has been called to these objects by the South American writers, Tello, Tomayo, de Palma, Escomel and others, and by the American, Ashmead. An important fact in this mode of preservation of medical history is that dermatological lesions, which would be lost on the bones, are often clearly depicted on the "huacos" as the water jars are called. The most common disease represented on the ancient pottery is the "uta," the etiology of which has been so admirably described by Strong and his associates in their report of the Harvard expedition to Peru in 1913. This disease, distributed in America, from Argentine to central Mexico, properly a form of leishmangiosis, attacks chiefly the lips and nose, eating away the nasal cartilages and the entire lip. Some potteries depict a smooth clean cut surface of the upper lip suggesting that a form of prehistoric amputation of the lip was performed to prevent the further spread of the disease. A photograph of one of these pots placed alongside of a photograph of a recent advanced case of "uta" is strikingly similar in all the horrid aspects. The disease is a very loathsome one, and is very common in Peru to-day. Another disease, which so far as I know does not occur in Peru to-day, depicted on these ancient water jars is that of "goundou" or "gundu," a tropical disease seen in Africa and recently described by Schlagenhaufen from Malaysia. It is characterized by a swelling at the base of the nasal bones, giving the root of the nose a bulbous appearance. This same pathology has been noticed by Letulle in an ancient Peruvian skull from Ancon. Ashmead has figured a curious piece of pottery representing a dwarf, of the achondroplastic type, whose body is covered with skin lesions resembling those described by Strong as Verruga Peruviana, the etiology of which is given in the Harvard report. The disease is confined to South America and has doubtless been in existence there for many centuries. Amputation of the limbs was performed by prehistoric surgeons in ancient Peru, as seen in the figures depicted on these ancient water jars. An interesting example of this is in the American Museum of Natural History, where the seated figure is examining a bone cap which he is about to place over the amputated stump. These caps are often depicted in dances, indicating a means of equalizing the length of the limbs. A most interesting relic of ancient parasitism is that seen in a pair of curious water jars where human figures are seen examining the soles of their feet which are covered with large rounded openings. At the present day there is a tick known as the "nigua" which infests sandy places and deposits its egg sacs in the bare feet of the Indians. If these egg sacs are not entirely removed serious results follow. The ancient water jars then depict the results of the removal of these egg sacs in ancient times. The archeological evidences of paleopathology are thus seen to provide a new and rich field of study. There have been occasional incursions into this territory, but the whole subject has never been adequately discussed.

Crinoid Tumors.—The swellings in crinoid stems, often termed "galls," indicate in some cases infections by parasitic worms; but the care with which the interpretation must be made is evident from the fact that Fig. 4 of my paper "Studies in Paleopathology," depicted as a crinoid tumor, is not a tumor at all, but a geode, as I suggested it might be. Geodes are very commonly formed in crinoid stems and often resemble these crinoid galls. Etheridge and Graff are the students who have described these
galls in ancient crinoid stems, but so far as I could discover true crinoid “galls” are not known from American deposits.

**Ankylosed Atlas.**—Skulls, with the atlas ankylosed more or less firmly to it, have been frequently described by writers on paleopathology who have ascribed the union to Spondylitis deformans. An examination of a series of skulls in the United States National Museum, however, proves conclusively that this phenomenon is not one of disease at all, but a question of developmental anomaly. Anthropologists are not yet clear as to the meaning of this ankylosis, but it is clearly not a pathological problem. It is true that absence of parts of the atlas may result in pathology, since the congenital absence of the anterior arch of the atlas may result in paralysis, by pressure of the odontoid upon the medulla.

**The Origin of Disease.**—Some paleontologists are of the opinion that disease arose coincidently with animal and plant life on earth. Dr. John M. Clarke of Albany has suggested that the student of invertebrate fossils, which were the earliest types of animals, is seldom confronted by the obvious lesions such as are so frequently in evidence among the vertebrate remains. There have frequently been recorded lesions on the shells of brachiopods, cephalopods, and lamellibranchs, which may have been due to injuries to the mantle, caused more frequently by parasitic attacks than by external accidents. There have been many cases observed which have never been recorded, and often paleontologists, chiefly interested in the specific determination of the forms, have cast aside as useless the injured and diseased fossils. It is not unusual to find abnormal growths in the structure of the hinge line in the lamellibranchs, and occasionally in the development of such delicate organs as the calcified brachial supports of the brachiopods. The network of the ancient glass sponges is often torn and repaired, lesions which are probably entirely accidental. Among the simpler forms of the earlier faunas, among which we may look for evidences of the origin of disease, pathologic conditions seem to be intimated by biological interdependence which may eventuate in total dependence or true parasitism. Examples of true parasitism are known from the Devonian. Dr. Clarke concludes: “It is, however, indicated from present evidence that the world of life, in the earlier stages of its history, was comparatively free of associations which might be construed as pathological except, of course, so far as the activity of bacteria is concerned. Here is a large and wide-open field of great interest and very important bearings.”

**Multiple Arthritis in a Mosasaur.**—Mr. H. T. Martin of Kansas University has recently loaned me for study a nearly complete series of the left hallux of a large mosasaur, *Platecarpus*, from the Cretaceous of Kansas, showing extensive arthritic lesions in all the joints of the toe. The metatarsal is especially pathologic, flattened, shortened, necrotic and covered with a curious roughening. When compared with a normal metatarsal the pathology is very evident. Each successive joint is deformed, enlarged, necrotic, with the articular ends of the phalanges lipped, similar to the lipping observed in arthritis in human skeletons. This is the first known example of multiple arthritis in a fossil vertebrate. The primary lesion was doubtless at the metacarpotarsal junction. Whether the other lesions are to be regarded as metastases is uncertain. Microscopic study of the lesions will be made and the specimen will be more carefully described and illustrated later.
JEAN PAUL MARAT, PHYSICIAN, REVOLUTIONIST, PARANOIAC

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JEAN Paul Mara (the final “t” was added later) was born on May 24, 1743, in the village of Boudry, now in the Swiss canton of Neuchâtel, but then a fief of the Prussian crown. His racial stock—human breeds intermixed to make him—is unrecorded. His father, about whom little is known, migrated from Sardinia, and during his life worked at several occupations, being in turn a chemist, a designer, and a teacher of languages. His mother, of whom also little is known, had a French father. One of her neighbors evidently had a very bad opinion of her, because, when the Marats moved to Geneva, she sent after them an anonymous letter accusing Mrs. Marat of possessing a diabolical tongue, of being a most notorious liar, a woman of no character, and of having a husband who was a downright hypocrite and a canting humbug. The letter throws more light on the character of the writer than on that of Mrs. Marat, who was far from deserving such a castigation, while her accuser was, in theological language, possessed by a devil, or, in scientific language, so poisoned by the toxins of anger, that reason abdicated and uncurbed emotion ruled.

We possess little data as to Marat’s family inheritance and in consequence are ignorant of the real causes of his being the man he was. We also know but little of the environmental influences to which he was subjected in childhood and youth. In later life he gave in the Journal de la République Française the following, almost wholly subjective, autobiographical account, which is to be taken with several grains, indeed many bushels, of salt. He writes:

1 Read at the College of Physicians, November 6, 1918.

“Born with an impressionable nature, a fiery imagination, a hot, frank, and tenacious temperament, an upright mind, a heart open to every lofty passion, and above all to the love of fame, I have never done anything to pervert or destroy these gifts of nature, but have done everything to cultivate them.

“By an exceptional good fortune I have had the advantages of receiving a careful education in my father’s house, of escaping all the vicious habits of childhood that enervate and degrade a man, of avoiding all the excesses of youth, and of arriving at manhood without having abandoned myself to the whirlwind of the passions. I was pure at the age of twenty-one, and had already for a long time past been given to the meditation of the study. The only passion that devoured my mind was the love of fame; but as yet it was only a fire smouldering under the ashes. The stamp of my mind had been impressed upon me by nature, but it is to my mother that I owe the development of my character. This good woman, whose loss I still deplore, trained my early years; she alone caused benevolence to expand in my heart. It was through my hands that she caused the succor that she gave to the indigent to pass, and the tone of interest she displayed in speaking with them inspired me with her own feelings.

“Upon the love of humanity is based the love of justice, for the notion of what is just comes from sentiment as much as from reason. My moral sense was already developed at the age of eight. Even then, I could not bear to behold ill-treatment practiced upon another; the sight of cruelty filled me with indignation, and
an injustice always made my blood boil with a feeling as of a personal outrage. “During my early years, my constitution was very delicate; moreover, I never knew either petulance or obstinancy or the games of childhood. Docile and diligent, my masters obtained everything from me by gentleness. I was only chastised once, and the resentment at an unjust humiliation made such an impression upon me that it was found impossible to bring me again under my instructor’s authority. I remained two whole days without taking nourishment. I was then eleven years old, and the strength of my character may be estimated from this single trait. My parents not having been able to bend me, and the paternal authority believing itself compromised, I was locked up in a room; unable to resist the indignation that choked me, I opened the casement and flung myself into the street; happily the casement was not high, but I did not fail to hurt myself seriously in the fall, and bear the mark on my forehead to this day.

“The shallow men who reproach me with being a ‘tête’ (obstinate fellow) will see from this that I was such at an early age; but they will refuse perhaps to believe that at this time of life I was devoured by the love of fame; a passion that has often changed its object at different periods of my life, but which has never quitted me for a moment. At five years of age I wanted to be a school master; at fifteen a professor; at eighteen an author; and at twenty a creative genius. This is what nature and the lessons of my childhood have made me. Circumstances and reflection have done the rest. I was reflective at fifteen, a thinker at twenty-one. At the age of ten I contracted the habit of a studious life; mental work had become a veritable necessity for me, even in illness, and my greatest pleasures I have found in meditation."

He paints himself as perfect, a satisfied self-worshipper. Almost no man, and certainly no one of histrionic temperament, ever writes of the psychical experiences of his boyhood truthfully; he looks back at them through the mist of illusions of memory, is a victim of paramnesia, remembers things that never happened, because he has the will to believe in their reality, credits ideas, opinions, and emotions of his adult life to an earlier time. I doubt not, Marat described his early mental life, his psychical development, as he believed it to have been, but he so believed because he wanted such a boyhood; he was, to himself, his image of a hero, and as such he paints himself. To the psychiatrist what he wrote is valuable, because it reveals his nature all unconsciously to himself—the vanity of the man, his self-centeredness, his feeling of being persecuted, his feminineness in mistaking
feeling for thought, mistaking intuition, which is really emotional guessing, for ratiocination, and his worship of words. His writings so accurately portray his mental makeup, his temperament and character, that I have, at the risk of being almost unbearably boresome, quoted quite extensively from this source. In drawing conclusions, however, we, who are of British inheritance, must remember that in France, especially during the Revolutionary period, it was quite the proper thing not to be restrained, reserved, in talking or writing about one's self, but to take, or pretend to take, the hearer or reader to one's bosom. He may have been precocious, he probably was; but precocity means premature rotting as well as apparent premature ripening. Normal men do not believe that their moral sense was "developed at the age of eight," and do not boast of having thrown themselves out of windows at eleven because their parents punished them. Healthy children are not devoured by the love of fame.

Whatever Marat's heredity may have been, his parents were kind, and realized the value of education. Whether his home environment was of the wisest, we do not know, but in childhood and youth he certainly escaped the interference with his mental growth which many fear the American boy of the twentieth century will not escape. Outside, conditions probably were commonplace. At about his seventeenth year he left home to seek university learning, apparently with the definite idea of becoming a physician. This proves that he had qualities far above the average youth, but, like many another paranoiac in the making, he worshipped the tongue in action and measured professorial wisdom by the rapidity of the flow of words from the professorial mouth. He studied at Toulouse, Bordeaux, Paris, London, and in Holland. About 1765 he started to practice medicine in Church Street, London, and remained there approximately twelve years. It is unknown when and where he got his first degree in medicine, but in 1775 he was granted a kind of honorary degree of doctor of medicine by the University of St. Andrews at the request of two physicians, Dr. Hugh James and Dr. William Buchan. It was not unusual to confer such a degree at that time, and the granting of it carried no connotation of distinction or eminence.

While in London he wrote much on scientific and philosophic subjects. His first work was "An Essay on the Human Soul" which he later expanded into "A Philosophical Essay on Man, or the Principles and the Laws of the Influence of the Soul on the Body and the Body on the Soul." Such books appeal to minds of a certain type and continue to be published, even in this day of assumed greater knowledge and wisdom. Another book was "The Discoveries of M. Marat on Fire, Electricity and Light," which received honorable mention and approbation from the French Academy. He published during the same period pamphlets on a "Singular Disease of the Eyes" and "An Essay on Gleets," both of which are wholly sane in manner and matter, but not in the least remarkable except for his boastful claim of ability to cure any case of gleet. Since, however, some physicians of our own day do not hesitate to admit the same belief in their infallibility without being accused of mental abnormality, we must not hastily draw conclusions about Marat.

The following extract from his philosophical essay is of interest as showing his scholastic viewpoint. He, as is quite natural when we consider the age in which he lived, accepts as correct the division of man into soul and body. In searching for the dwelling place of the soul, without, however, having first defined what the soul is, he concludes:

"Anatomists agree that we must look for the seat of the soul in the head; but
they are not unanimous as to what place it occupies in that part of the body. Some place it in the pineal gland, others in the corpus callosum, others again in the cerebrum; some in the cerebellum, and some in the meninges. But of these different opinions, the last one is well founded; for, if we trace the nerves to their entrance into the membranes of the brain, we shall find they confound themselves with the meninges, and form one simple uniform substance with them.

"Hence, if the nerves only are sensible and if the sensations are not continued to the soul by these organs, we plainly perceive that the meninges must be esteemed the seat of the soul. For as the membranes and their productions are the general organs of sensation of the body, its seat must be in that part where the concourse appears, viz., at the centre of all the organs of sensation: these membranes are this centre.

"Experience likewise daily confirms it; the slightest inflammation of the meninges occasions a delirium, and a temporary insanity. The irritation of the nerves, by the fumes of wine from drinking to excess, or by the fumes of tobacco, is followed by the irritation of the meninges, and the loss of reason; this never happens to any other part of the head.

"The substance of the cerebrum or cerebellum may be taken from a living animal without the soul's being instantly affected; and though the wounds of the centre of the brain, of the pineal gland, and of the corpus callosum sometimes injure the functions of the soul, it is not because the seat of the mind is in either of these parts, but because these parts secrete a fluid which is necessary to its operations, and by reason of the irritation which wounds in these parts communicate to the meninges. In these membranes Eternal Wisdom has placed the soul, and united it to our organs by imperceptible bands; here it has fixed the seat of thought, of memory, and of will."

The following written years before he became a leader of the mob, is of interest when one considers his own conduct in later life.

"Such as are brought up in an excess of delicacy, and a continual habit of indulging themselves in every sort of pleasure, are not affected by the sufferings of others: their sensibility is constantly employed on themselves; they are altogether unconcerned about other beings, and their hearts are steelèd against the sufferings of mankind. In proportion as this love of self increases, pity decays, and frequently becomes extinct. He who melts into tears at the distress of the unfortunate, were he his enemy, instead of alleviating would aggravate his misfortune.

"Nero, who wished he had never learned to write when pressed to sign the warrant for a criminal's execution, could delight in the murder of his enemies. This tyrant, who loudly bewailed the fate of Andromache as presented on the stage, could hear without emotion the cries of those he had doomed to destruction.

"Pity is destroyed by the passions; it is even generated in the heart only by prudent reflection, is nourished only by tender sentiments, and is wholly extinguished by the frequency of those objects which ought naturally to confirm it. Let us suppose a man has never heard anyone discourse on ideas of justice, goodness, clemency, and generosity; he must remain forever ignorant of the very names of those virtues.

"By a frequent attendance at those bloody feasts, which in some great cities are given by avarice to idleness, you will soon lose all sense of the strong emotions
you had hitherto felt at the cries of the mangled animals; in time you will hear them with pleasure, and wait impatiently for a repetition of them. By frequenting such scenes, the soul becomes callous to impressions, is unaffected by the prospect of human miseries, and insensible to every tender emotion. Do not these reasons prove that pity is not a native of the human breast?"

Voltaire, who certainly had a clear head and much learning, as well as a caustic wit, did not hold Marat in high esteem as an explainer of the universe. In one place Marat, giving himself up unrestrainedly as he had a habit of doing, to the enjoyment of fine writing, i.e., writing which is sonorous but meaningless, refers rather emphatically to thought making a man enjoy nothingness. Voltaire comments: "It (nothingness) is a great empire; reign there, but insult a little less those who are something." Marat said Voltaire's contemptuous attitude was caused by grief at seeing himself put in his proper place in the "Essay on Man." This little incident is an example of how small a thing may throw a bright light on a man's nature. Marat believed he had a much greater intellect than Voltaire.

His first political book, entitled "Chains of Slavery," "a work wherein the clandestine and villainous attempts of princes to ruin liberty are pointed out and the dreadful scenes of despotism disclosed," was published in 1774. Its purpose was "to secure the triumph of liberty in England," "to paint the inestimable advantages of liberty, the frightful evils of despotism." The title, which is too long to quote in full, is suggestive to the psychiatrist, because political paranoiacs of the book-writing class are prone to long descriptive titles, and revel in the words despotism, villainy, liberty, tyranny, and such phrases as "the people's friend," "the wickedness of kings," "the sinfulness of the rich," and the like. Every collection of such books shows a family likeness in all the title pages. In describing the making of the book he says—and I quote him verbatim—he devoured thirty volumes, worked twenty-one hours a day for three months, and kept himself going by drinking excessive quantities of coffee. Like many of the writers and teachers of the newer sociology of today, he imagined that all that is necessary to become an expert on any subject is to read some books, take pen, and let the ink flow. Such men lack the ability to meditate, they do not know what meditation means: it is outside their world. Immediately on completion of the book he fell ill became stuporous, dazed, lost all power of memory, and was miserably weak physically. He recovered in thirteen days "by aid of music and repose." It is noteworthy, in the psychology of authorship, that men who make great, fundamental discoveries in science, or who by their writings on political matters help this poor old world along to wherever it may be going, are not broken by their labors and never become hysterical or histrionic, while the gentlemen who continuously, in print or on the platform, protest their love of the people, without ever in any way helping us by good deeds, are very prone to hysterical disorders. We have had illustrations of this in our recent political history, in men who have bulked momentarily large in the public eye. The explanation is simple: such men overwork their emotions and think they are overworking intellect; they are feeling, not thinking animals. The real thinkers are not troubled by unruly emotions concerning the things they write about, and have other outlets for their emotions.

Light is thrown on Marat's mental nature by his description of his troubles, many of them largely imagined, but all having a foundation of fact, in getting "The Chains of Slavery" printed. The book was written to show the wickedness of Lord North and his administration of the British Govern-
ment. It never entered Marat’s head, so con­
vinced was he that he was a savior whose
mission was to free unconscious slaves,
that the English people might regard it as
an impertinence, if indeed the mass of them
thought of the matter at all, for an unknown
and rather ignorant foreigner to attempt to
advise them how they should govern their
country. He was astonished that when he
offered the book to the printers no one cared
to publish it. Several gave no reason; but one,
Woodfall, suggested that the introduction
was of a nature to give offence in powerful
quarters. This explained matters to Marat;
the printer, he was convinced, was bought
up. The fact that the Prince of Wales’
bookseller wished his name struck off the
list of subscribers, strengthened his belief
in a conspiracy. Marat tells us he “became
heroic.” He slept for six weeks with a brace
of pistols under his pillow, in order that
he might receive in proper fashion any
minion of the state who might be sent to
seize his papers. Notwithstanding his
preparations nothing happened, and he
concluded that the British government,
having learned of his determination to pro­
tect his papers even by gunfire, had decided
to use cunning instead of brute force.
Finding publication in the ordinary way
impossible, he decided to send copies to the
so-called patriotic societies in the north of
England. But, as he believed, Lord North
heard of this, surrounded him with spies,
tried to corrupt his servants and his land­
lord, intercepted his family letters, and
indeed used the whole governmental ma­
chinery to stop the circulation of the book.
Marat then determined to put the govern­
ment off its guard by disappearing. He
accordingly went to Holland and imme­
diately returned to the north of England,
where he visited all the patriotic societies,
this bit of childish cunning being, in his
opinion, enough to mystify all the English
spies and detectives. All of the societies
gave him the civic crown, and one even
insisted on contributing to the cost of
printing the book which Marat believed the
British government had spent eight thou­
sand guineas in suppressing. The only com­
ment one can make is that though Lord
North may not have been, indeed was not,
the wisest of men, and certainly was more
than unfriendly to Marat, he was not the
sort of man to value Marat at any such
price. He may have spent eight thousand
shillings of the taxpayers’ money in the
suppression of free speech by Marat, but it
is doubtful. If he did he wasted money.

In 1777 an incongruous event happened
in the life of him who was later to be self-
styled “the people’s friend.” He became
physician to the Garde du Corps in the
Comte d’Artois’ household. Writers who
do not approve of him state incorrectly,
and rather maliciously, that his real position
in the household was that of a horse doctor.
Having obtained the position, he desired to
prove his own right of nobility, feeling he
properly belonged to the same class whose
company he was keeping, and he wrote to
the chief of the heraldry office about the
matter. The hater of despotism and the
believer in the equality of men took service
under an aristocrat of the first water and
wanted the bauble of nobility himself. He
doubtless held with Emerson, before Emer­
son was born, that consistency is the bug­
bear of little minds. He retained this posi­
tion till 1786. Meanwhile he wrote much
on scientific subjects—on light, fire, elec­
tricity, optics. None of these writings are
remarkable and they did not aid the prog­
ress of science in any way. He did, however,
at that time, have a real desire for knowl­
dge. His scientific and medical writings
were not a pose, but were honestly written
by a man interested, and somewhat trained,
in scientific matters. His own opinion of his
position in the world of science is revealed
by him in the following quotation: “Cal­
umny has flown from Paris to the Escorial
to blacken me in the mind of a great king
and an illustrious Maecenas. Who are my detractors? Envious cowards, the numerous crowd of whom does not cease to devote itself to my destruction—modern philosophers, hidden under anonymity or false names in order to defame me. Scarcely had I attained the age of eighteen, when our pretended philosophers made various attempts to drag me into their party.” He was sure one of his books was prohibited in France because certain French philosophers were envious of him. What he thought of himself as a physician the following quotations will show. “Many sick persons,” he says, “of distinguished rank, who were despaired of by their physicians, and to whom I had restored health, joined with my friends in endeavoring to induce me to fix my abode in the capital. I acceded to their persuasions; they promised me fortune, I have found only outrage, annoyance, and trouble.”

“The fame of the surprising cures I have made,” he continues, “drew to me a prodigious crowd of sick people; my door was continually assailed by the carriages of persons who came to consult me from every quarter. As I exercised my art as a physician, the knowledge of Nature gave me great advantage, no less then my swiftness of eye and accuracy of touch, and my multiplied successes caused me to be called ‘the physician of the incurable.’ ... My successes gave umbrage to the doctors of the Faculty, who calculated with sorrow the big amount of my profits. [I may say parenthetically, he never made any money, never tried to, was careless about money and financially honest. He died almost penniless.] They consoled themselves by forming a project to dry up their source. I could prove, if need be, that they held frequent meetings to consider the most efficacious means of slandering me. Henceforth, calumny spread in every direction, and anonymous letters reached my patients from all sides in order to alarm them with regard to me. A large number of persons, whose friendship for me is founded on esteem, took up my defence, it is true; but their voices were drowned by the clamour of my opponents. All these facts are matters of public notoriety.

“Disgust, inseparable from the practice of medicine, made me sigh more than once for the retirement of the library; I then gave myself up entirely to my favourite studies. Could I have foreseen that I was to make for myself a new cause for envy?”

His opinion of himself as a statesman, and a partial catalogue of his acts, is shown in the following quotation:

“All that a man of sense and a man of heart could do to save his country I have done to defend mine. Alone and without support, I have fought for two whole years against the commissioners of sections, the municipal administrators, the chiefs of police, the courts of justice, the tribunal of state, the government, the prince, the National Assembly itself, and often with success. I have exposed the black designs of the court, detected its snares, its artifices, its plots; I have disconcerted the conspirators, prepared the fall of Le Châtelet and brought about that of an adored minister. I have unmasked the Parisian general, raised the army and the fleet against their despotic chiefs; more than once I have compelled venal committees to resign, to suspend or to revise their projected decrees; I have struggled against oppressors of every kind; I have rescued a hundred thousand victims from judicial tyranny. More than once I have made the tyrant on his throne turn pale, and dismiss his frightful agents. Always in arms against the traitors to the fatherland, indignant at their crimes, and shocked at their atrocities, I have torn away their masks, I have made a
spectacle of them, their impostures, their
defamations; I have braved their resent­
ment, their fury. Exposed to their wrath,
I have been pursued again and again by
the ministers and the municipal ad­
ministrators. Twenty military expedi­
tions directed against me, and a whole
army mobilized to tear me away from
the people, have only increased my
audacity. A price has been put on my
head; five cruel spies put on my tracks,
and two thousand assassins, paid to slay
me, have not for an instant succeeded
in making me betray my duty.

“To escape the steel of the assassins, I
have been obliged to betake myself to a
subterranean life; hunted out from time
to time by batallions of alguazils, com­
pelled to flee, wandering through the
streets in the dead of night, and often
not knowing where to find refuge, in the
midst of weapons pleading the cause of
liberty, defending the oppressed with
my head on the block, and thus growing
ever more redoubtable to our oppressors
and the public rascals.

“This kind of life, the mere recital of
which freezes the most callous heart, I
have led for eighteen long months with­
out one moment complaining, without
once asking for rest or recreation, without
heeding the loss of my health, of my
estate, and without blanching at the sight
of the sword always pointed at my heart.
What do I say? I might have been ad­
vanced, caressed, fêted, if I had been
willing merely to keep silent, and how
much gold would have been lavished upon

Marat as the firebrand of the French populace.
umny, defamed by the public rascals whom I have unmasked, loaded with the curses of all enemies of our country, abhorred by the great and by men in power, and set down by all ministerial cabinets as a monster to be stifled, perhaps I shall be forgotten by the people to whose advantages I have immolated myself; happy if the regrets of patriots accompany me; but I take with me the honorable testimony of my conscience and I shall be followed by the esteem of mighty spirits.

"However frightful may have been my fate during my long captivity, and however sad the prospect that opens before me, I shall never regret the sacrifices that I have made for my country or the good that I have wished to accomplish for humanity. I have fought without ceasing till this day, and I have not deserted the post of danger till it was taken by storm. If there is in France a single man of insight and determination who dares to reproach me with having too soon despaired of the public safety and with a lack of constancy, let him take my place and retain it for only a week.

"Citizens, I ask of you neither regrets nor gratitude—do not even preserve the memory of my name; but if ever some unexpected turn of destiny brings you victory, remember to make it assured by taking advantage of your success, and never forget, to assure your triumph, the advice of a man whose life was devoted to establishing among you the reign of justice and liberty."

I have quoted so largely from Marat because the man is revealed in his writings. In all the quotations, though there is in every statement an element of truth (he was an important revolutionist, he did break many men in political life), there is shown pathological suspicion, a tendency to find evil in all men who would not follow his leadership, a total inability to measure himself correctly, intense egoism and megalomania. Political biography does not reveal any man who more strongly believed in government by murder than Marat. He was not a hypocrite, but firmly believed that the whole art, craft and mystery of statesmanship consisted in enraging the populace so that they would destroy.

Though "The Chains of Slavery" was written in 1774 and the first edition of "A Plan of Criminal Legislation" in 1780, it was about 1788 or 1789, the year of the fall of the Bastille, that he became a politician pure and simple and proceeded to attempt the task of saving humanity by preaching killing. He was a product of Rousseauism—Rousseauism filtered through a paranoiac brain.

I have not time to recite the political doctrines of Marat. Everyone knows them. He spread them by orations and by his paper, The Friend of the People. The people, according to him, meant only the propertyless and those without any occupation. They alone had the right to govern and to own, because, according to his philosophy, they alone produced and originated all wealth. He made each difference of political opinion the occasion of a personal quarrel. If anyone disagreed with him that person was a scoundrel, a criminal, a murderer; he could not conceive that any man might hold views unlike his own and yet be honest. He had almost no friends, though many followers, and his judgment of men was almost always wrong. For example, on Mirabeau's death he wrote: "People, give thanks to God. Your most redoubtable enemy has fallen beneath the scythe of fate. Riquetti is no more; he dies a victim of his numerous treasons, victim of his atrocious accomplices. . . . Adroit rogues, to be found in all circles, have sought to play upon your pity, and already duped with their false discourse you regret this traitor as the most zealous of your defen-
Jean Paul Marat, Physician, Revolutionist, Paranoiac

This is his sincere opinion of a statesman whom sane Frenchmen had hoped would live, knowing that he alone could chain the wild men and thieves who were ruining the country. Marat had no conception of constructive statesmanship; all his opinions were destructive and hence he could not in any degree comprehend a man of Mirabeau's type. Mirabeau knew that there are natural political laws, just as there are natural physical laws. Marat could not conceive this. Though he had been trained a little in natural science, his intellect was not of the kind that could really form a conception of the meaning of a natural law. He could not conceive inevitability. Mentally, in his earlier life in many ways he resembled the sentimental sympathizers with Bolshevism who are to-day making so much noise in America. It is noteworthy that almost all the American born among them have led shielded lives, have never been in contact with the realities of life, have never had to work (their fathers did that for them); the women advocates have failed in woman's first and natural function. Among the foreign born are internationalists, parasites, and those who left the countries of their birth for their countries' good.

It is not easy to discover much about his physical appearance. No one has given an unbiased, unemotional description. Carlyle, who was not a historian, but a master of a certain dramatic style, an artist, and who thought, probably correctly, that truth is greater than fact, describes him as a "large-headed, smoke-bleared, dwarfish individual with blue lips." A contemporary says he was five feet high, with bow legs, a very large head, and aquiline nose. Fleischmann, a recent writer, says he had brilliant eyes, full of fire, and as one cheek was higher than the other the two eyes were not in the same horizontal line. Madame Roland, an unfriendly and contemporary witness, relates in her memoirs that his open shirt showed a yellowish chest and that his long finger nails were filthy and his face hideous. Dr. John Moore, a sane observer, who traveled in France during the Revolution and saw him many times, says, "Marat is a little man of a cadaverous complexion, and a countenance exceedingly expressive of his despotism: to a painter of massacres, Marat's head would be inestimable. Such heads are rare in this country [England], yet they are sometimes to be met with at the Old Bailey." With one quality which under most circumstances all men praise, Moore credits Marat, but damns him for it. He writes: "This man certainly possesses a great deal of courage both personal and political. No danger can terrify him, nothing can disconcert him: his heart, as well as his forehead, seems to be made of brass."

From about 1789, he suffered continually from a skin disease which caused an agonizing pruritus. The only relief he got was from a continuous bath, and much of his writing was done while bathing. Cabanes, who made a very careful study of him, concludes his skin disease was eczema, that he was hypochondriacal, had insomnia and constant headaches and that all his mental peculiarities were largely bound up with his bodily suffering. Dr. C. E. Wallis quotes Dr. Graham Little as being of the opinion that the skin affection was probably a dermatitis herpetiformis, on the ground that the irritation and pain from which he suffered were alleviated by sitting in a bath of water, whereas eczema itself would have been aggravated by contact with water. Whatever his skin disease may have been, the agony of the pruritus was intense, and for years he had no relief save when in his tub. He stayed in it for hours, worked in it and was killed in it.

A word about his murder. Charlotte Corday, a woman lacking three months of twenty-five years of age, murdered Marat on July 4, 1793. Her life contains nothing of interest save her one act of crime, which
she believed to be an act of heroism. She was the daughter of a rather decayed gentleman, and at the time of the Revolution was living in Caen. She read with all the fervor of the time Plutarch, Rousseau, and Voltaire, and conjured up in her mind a picture of the Roman Republic such as never existed. She hoped that France would soon be a modern antique Rome. She was in sympathy with the Girondists whom Marat hated. She went to Paris, bought a knife, visited Marat while in his bath, spoke a few words and stabbed him, making a wound "between the first and second rib, traversing the upper part of the right lung as well as the aorta, and going into the left clavicle." He died. She tried to escape, or did not, according to whether you believe anarchists or sane men. She was made to confront the corpse at midnight. She bore the ordeal well, indeed was quite heroic, and said: "Yes, it was I who killed him." She was guillotined. Meanwhile the mob made a God of Marat, and then, after the fashion of the mob, very soon ceased to worship, in order to curse and destroy all memorials in his honor.

Where should Marat be placed in a psychological classification of men? Paul Lacroix, some fifty years ago, wrote: "There were two Marats—the Marat who is known to everyone, and the other Marat whose existence no one at the present day suspects: the one was the pupil and admirer of Rousseau, the lover of nature, the learned author of many discoveries worthy of mention in chemistry and physics, the energetic and brilliant writer who produced a book of philosophy worthy of the philosopher of Geneva—the one who wrote only scientific, philosophical, and literary works; he was a doctor in the Comte d'Artois' bodyguard; he died, or rather he disappeared, at the end of the year 1789, to give place to his namesake." G. Edward Wallis, in his interesting little pamphlet, explains him by the same assumption of two personalities: (1) the one, that of a scientist and philosopher, who died in 1789; (2) the other that of a fanatical journalist, pamphleteer and demagogue.

Dr. Cabanès seems to believe that his mental peculiarities were very largely the result of his physical ill health. Many of his contemporaries, not only physicians but also men of business and of affairs, solved the problem by the diagnosis of simple lunacy. A few writers of recent date, men in sympathy with his ideas, claim that far from being an insane man, he was a political genius; but one must not take them too seriously, because they are living in a mental world so topsy-turvy and in a moral world so vacuous that they regard crime as being proof of moral independence, and clear thinking as evidence of lack of mind.

Lacroix and Wallis's theory of two personalities is figurative rather than a statement of scientific fact. His case was not one of double personality. There was no break in his personality, no sudden change in his character. His behavior changed, not because he changed, but because the stimuli acting on him changed. He began to be political while still practicing medicine and many of his peculiarities, especially his megalomania, are shown even in his medical writings. As always happens in true paranoia, there was a long prodromal period, and it took years for his insanity to come to its fruition.

I cannot altogether agree with Cabanès. Pruritus, no matter how severe or how continuous, cannot cause the clinical picture that Marat presents. It is possible, however, that the pruritus was only an external manifestation of some disorder of metabolism, which acted not only on the nerve endings in the skin, but also on the cerebral cortical cells. This, of course, is purely hypothetical; but the mystery of mental abnormality surely will be explained on physical grounds. Many writers speak of his head as being monstrous in comparison...
with his height, which was less than five feet. He may have been hydrocephalic, or may have had some disorder of his pituitary gland leading to abnormal bony development, though his facial bones and hands do not indicate this (he was not acromegalic), and associated with it there may have been a congenital tendency to mental abnormality. He did not have the goodnatured temperament usually found accompanying disease of the pituitary body. The whole matter of the relation of the ductless glands to mental function is in a nebulous state; but the twentieth century may see proven that what one's attitude toward life is, how one explains the riddle of the universe, how one behaves, may depend in some degree on little glands that not so long ago were regarded as vestigial.

I have said there is not time to describe his political life and opinions. We must, however, pay some attention to them. He started his paper, The Friend of the People, at the beginning of the Revolution. He used it solely to abuse pretty nearly everyone, not only the king, the ministers and the nobles. He preached not revolution alone, which would have been entirely sane, but murder and general theft. He took a large part in arranging the proceedings of the mob of women who went to Versailles and brought the king to Paris. He urged the soldiers to murder the officers. Several times he was denounced, but always escaped by flight or hiding. In 1790 he was denounced, but the Cordeliers rescued him. Lafayette laid siege to his home, but he found asylum with an actress friend. In the same year, he proposed a law to the Assembly, that “eight hundred gibbets ought to be erected in the Tuileries to hang all traitors, beginning with the elder Mira- beau.” It failed to pass. He hated the Gironde party. He was one of the organizers of the massacres in the prisons—a butchery which Robespierre continued under shadow of law. He boasted that a dictator was needed and that Robespierre was the one fit man. He declared that it was necessary to guillotine 270,000 people in order to free France.

The gentlemen who regard him as a political genius, e.g., the sincere members of the Bolshevik party of to-day, not only in Russia but also in this country, are themselves mentally abnormal. He is not the only lunatic in history who has had a following during life and after death.

Let us sum up his life and see whether we have data enough to classify him. The test of a man's sanity is his behavior; behavior being the visible signs of mental reaction to stimuli. When it is in consonance with the time in which and the place where a man lives, his local environment, his racial and his family inheritance, and his formal education, he is sane. Of Marat's ancestral history we know nothing. We know, too, little of his parents to form a judgment as to whether they were wholly normal or not. They surely were not noticeably abnormal and his young life was passed happily. It is true that his father worked at many different things in at least three countries, and though this makes us think of the possibility of his lacking fixity of purpose, it does not prove it.

The time in which Marat lived determined the twist his mind was to take. Had he been living in America a generation ago he would have been an ardent, I will not say disciple, but rival of the leader of the Populists; to-day he would, if living in America, be a chief among the anarchists of the east side of New York, and probably would be making speeches before admiring audiences of gentle male and female feminists, with soft hands and softer heads, who think they are broadening their minds by listening to arguments in proof of the righteousness of murder, he meanwhile wondering how soon his real associates would get a chance to string his audience and all their relatives to nearby lampposts.
The French Revolution was brewing many years before it came to a head, and Marat lived in an atmosphere of moral unrest and intellectual turmoil. But environment, like all exciting causes, requires a favoring soil or it will not produce insanity. The soil is the protoplasm as it exists in germ cell and sperm cell at conception. Was the soil of Marat's personality, his protoplasm, favorable to the growth of mental disease? Undoubtedly, yes. He, as a youth, became saturated with the doctrines of Rousseau. Boys of other types react in other ways toward such doctrines, most of them merely negatively, not having understanding, while a few, those having real intellectual acumen, can see and have sympathy with the portion of truth mixed with Rousseau's emotional idealism. He had great, indeed, overwhelming ambition, mediocre intelligence, infinite conceit, was very emotional (like the murderer who weeps to see a fly killed), had no real sense of justice, was a worshipper of the god Gab, and was entirely selfish. He had a little undigested learning, but no power of reasoning. He lived in a wild time, when the crooks and the cranks led the imbeciles, of whom there are many in every country, to wholesale murder. Marat wanted to be a leader. He believed that he could rule the country if only enough people were killed. He was shrewd enough to know, that if he shouted long enough and loud enough that he was the people's friend, many would believe and follow him. His creed was simple—all that the rich own belongs to the poor because they stole it from the poor. His theory of government was equally simple. If you do not agree with me you are not a patriot; if you are not a patriot the proper punishment is death. Therefore we will kill everybody who disagrees with us, and then we will have the millennium, the brotherhood of man. So he justified himself, and as time went on his murder-lust increased. His creed, thus far, would be interpreted by many as indicating criminality, not insanity; but this opinion is unjust to him.

An important and unquestionable symptom of mental disease was his delusion of persecution. From the time of publishing his "Chains of Slavery" till his death, he was the victim of this delusion. True, he had many real enemies in the Revolution who would gladly have killed him, but everyone, the English cabinet, philosophers, men of science, everybody, was, from his point of view, intriguing against him, preventing his success in medicine, stopping by conspiracy the sale of his scientific works, keeping him from political power, just because they envied him. Another symptom was his megalomania. Statecraft, which the wisest men of all the ages have been struggling to master, he comprehended intuitively, with an infallibility of judgment equal to that of a god. Lacking all power of reasoning, of examining the facts of any question, weighing them and then drawing conclusions, he imagined he was a political genius, and more, a saviour of the people.

He belongs then among the insane, and is an example of paranoia of the political type. He presents the cardinal symptoms of paranoia, intense egoism, delusions of persecution, and an angry grandiosity. He has a common secondary symptom, viz., unlimited verbosity, the matter of his speeches being always the same, the wickedness of his persecutors, his own virtue, wisdom, and unselfishness. He had the paranoiae's intensity of manner in speaking, and the tremendous verbal diarrhoea which deceives the common man, who, overwhelmed by the cataract of talk, goes home feeling that the orator must be a profound thinker because he talks so well.

His moral code was wrong, and yet like all paranoiaes he regarded himself as virtuous. It was not a hypocritical pose. His career was cut short by Charlotte Corday, but some of his sane contemporaries say he would have been locked up as a madman in
a short time had he not been killed. They were right, because his obsession of persecution was growing stronger and stronger every month in the latter part of his life.

The alternative would have been the guillotine, which his political enemies would not have hesitated to use when infuriated by some special act of violence.

GRAVES AT SEA

Here I shall detail an anecdote of value, as furnishing an insight into the character of the man, and as it prepares us for understanding that feature in his after-life for which he was justly distinguished—namely, his collectedness of mind and vigour of action in cases of difficulty and danger. He had embarked at Genoa, in a brig bound for Sicily. The captain and crew were Sicilians, and there were no passengers on board but himself and a poor Spaniard, who became his companion and messmate. Soon after quitting the land, they encountered a terrific gale from the north-east, with which the ill-found, ill-manned, and badly commanded vessel soon showed herself unable to contend. The sails were blown out of the bolt-ropes, the vessel was leaking, the pumps choked, and the crew, in despair, gave up the attempt to work the ship. At this juncture, Graves was lying on a couch in the cabin, suffering under a painful malady, when his fellow passenger entered and, in terror, announced to him, that the crew were about to forsake the vessel; that they were then in the very act of getting out the boat; and that he had heard them say, that the two passengers were to be left to their fate. Springing from his couch, Graves flung on his cloak, and, looking through the cabin, found a heavy axe lying on the floor. This he seized, and, concealing it under his cloak, he gained the deck, and found that the captain and crew had nearly succeeded in getting the boat free from its lashings. He addressed the captain, declaring his opinion, that no boat could live in such a sea, and that the attempt to launch it was madness. He was answered by an execration, and told that it was a matter with which he had nothing to do, for that he and his companion should remain behind. "Then," exclaimed he, "if that be the case, let us all be drowned together. It is a pity to part good company." As he spoke, he struck the sides of the boat with his axe, and destroyed it irreparably. The captain drew his dagger, and would have rushed upon him, but quailed before the cool, erect, and armed man. He then virtually took command of the ship. He had the suckers of the pump withdrawn, and furnished by cutting from his own boots the leather necessary to repair the valves. The crew returned to their duties, the leak was gained on, and the vessel was saved.

William Stokes (1854).
AN APPRECIATION OF HENRY BENCE JONES, M.D., F.R.S.  
(1814-1873)  
By JACOB ROSENBLOOM, M.D., Ph.D.  
PITTSBURGH, PA.

It is now just forty-six years since Henry Bence Jones died, forty-six years in which wonderful progress has been made in that subject which was so dear to this man. He was one of the first men of our present era in medicine to value chemistry as an aid in the explanation and cure of disease.

He was born in England. William Bence Jones, the Irish agriculturist, was a brother. At twelve years of age he went to Harrow and at eighteen entered Trinity College, Cambridge. He graduated with the degree of B.A. in 1836, M.A. in 1842, M.B. in 1845, and M.D. in 1849.

On leaving Cambridge he studied medicine at St. George's Hospital in London, and chemistry with Thomas Graham at University College. In 1841 he went to Giessen and studied chemistry with Liebig, to whom he was always attached by bonds of friendship and respect because of Liebig's wonderful work. He became licentiate of the Royal College of Physicians in 1842, fellow in 1849 and was afterwards senior censor. In 1842 he married his cousin Lady Millicent Acheson, daughter of the second Earl of Gosford. In 1846 he became a fellow of the Royal Society and was from 1860 till almost the end of his life, secretary of the Royal Institution. In 1846 he was elected full physician to St. George's Hospital, resigning in 1862. He died at his home in Brook Street, Grosvenor Square, London.

Henry Bence Jones was an accomplished physician and acquired a large and remunerative practice. He was very well acquainted with the scientific men at home and abroad—a warm friend and admirer of Michael Faraday, whose life he wrote in two splendid volumes, and the physician and friend of Huxley. In Huxley's autobiography he states: "In April another good friend, Bence Jones, lent the invalid (Huxley) his home at Folkestone for three months." Darwin was also a friend and patient. In the "Life and Letters of Charles Darwin" the following passage discussing Jones's diet treatment is found: "The year 1865 was again a time of much ill-health, but towards the close of the year he began to recover under the care of the late Dr. Bence Jones who dieted him...

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severely and as he (Darwin) expressed it ‘half starved him to death.’”

Herbert Spencer was also a friend. In Spencer’s “An Autobiography,” he states: “Speaking of drugs, Bence Jones said that there is scarcely one which may not under different conditions produce opposite effects.” Spencer also states that Bence Jones approved of the bed for invalids which he had invented.

Helmholtz had a great deal of respect for Bence Jones. In speaking of his trip to London, he says: “In the first place, I went to see Bence Jones, physician, physiologist, and chemist, hoping to get news of du Bois Reymond and of the chemist Hofman. But he had gone off to du Bois’ wedding. In the evening I dined at seven with Dr. Bence Jones. Bence Jones is a charming man. Simple, harmless, cordial as a child and extraordinarily kind to me.”

Bence Jones was also physician and friend of the celebrated chemist, A. W. Hofman. In the Hofman memorial lecture the following incident was narrated: “One day when Hofman was going his usual rounds in the general laboratory of the Royal College of Chemistry, a student standing not far from him poured a quantity of concentrated sulphuric acid into a thick glass bottle he was holding in his hand which contained a small quantity of water. The consequence was that the heat evolved caused it to crack and the bottom to fall out. Some of the acid splashed up from the floor into Hofman’s eye. He had to be kept in a dark room for several weeks and during this time his old friend, Dr. Bence Jones, attended him.”

Jones was also a friend of Benjamin C. Brodie, as is shown by the accompanying reproduction of an autograph of the late Sir Benjamin C. Brodie inscribed in his autobiography which is in my possession.

I have found an interesting story of consultations held in Bence Jones’s time, in a recent book. The anecdote is told by Sir T. Clifford Albutt. “Many years ago in the days of my studentship at St. George’s Hospital, a case came under my notice which I see as vividly as if the patient were still before me. A man of some thirty or thirty-four years, of vigorous frame and apparently of vigorous constitution, lay propped up in bed in extreme agony. He complained, when he could whisper to us, of intense retrosternal pain, never absent, indeed, but returning upon him in paroxysms. The pain radiated about the shoulder or shoulders, whether it extended lower down the arm I cannot remember. The respiration was restrained in dread. There were no physical signs to betray the presence of the disease within. What I vividly recall as if burnt into my mind, is the aspect of the man, bound on a rack in the presence of death, and yet, for the agony at the centre of his being unable to cry out. Consultations were held but to little purpose, save to certify that the case, if one of angina pectoris, was a strange one, because of its continuous if still paroxysmal character, and because of the fever with it. Bence Jones, whom no man exceeded in brilliancy and rapidity of diagnosis, declared for acute aortitis. The patient died suddenly soon afterwards, and the necropsy justified Bence Jones’s opinion. On the inner surface of the ascending aorta were groups of gray semi-translucent patches disfiguring the walls of
the slack and dilated vessel; and let this be
carefully noted—no other cause of death
could be discovered. The heart and coronary
vessels were healthy."

As a physician it has been said that Bence
Jones's chief characteristics were, "Scientif­
ic truth, accuracy, and a dislike to
empiricism."

During the last years of his life he suffered
great bodily weakness and at times had a
little irritability of manner no doubt due to
his physical ailment. As a rule he was cheer­
ful to the last and interested in the progress
of the Royal Institute and of science. His
bust stands in the Royal Institute and in
St. George's Hospital, London.6

The catalogue of the Royal Society shows
thirty-four scientific memoirs credited to
Bence Jones. He was the first to describe
the occurrence of xanthine in urine7; the
priority of describing alkaloidal substances
in animals is claimed by Dupré and Bence
Jones.8 They described an alkaloid which

6 Obituaries: Ber. d. deut. pharm. Gesellseh. 1873,

they separated from the solid and liquid tis­
ues of animals and named it "animal quin­
oidine." He was the first to describe that very
interesting substance occurring in the urine,
since known as the Bence Jones protein.9

Bence Jones's first scientific memoir was
"On a cystic oxide calculus."10 Besides these
memoirs, he was the author of the following
books: "Gravel, Calculus, and Gout; the
Application of Liebig's Physiology to These
Diseases," 1842; "On Animal Electricity,
Being an Abstract of the Discoveries of
Emil Du-Bois Reymond," 1852; "The
Chemistry of Urine," 1857; "Lectures on
Animal Chemistry in Its Application to
Stomach and Renal Diseases," 1850; "Lec­
tures on Some of the Applications of
Chemistry and Mechanics to Pathology and
Therapeutics," 1867; "Croonian Lectures on
Matter and Force," 1868; and "Life and
Letters of Faraday," two volumes, 1870.

1866, 348.
1848, i, 55.
THE FINANCES OF FELIX PLATTER, PROFESSOR OF MEDICINE AT BALE

By CHARLES GREENE CUMSTON, M.D.

GENEVA, SWITZERLAND

A bit more than a century ago—to be exact, in the year 1814—the learned Pierre Bridel published the accounts of Felix Platter of income received from 1558 to 1612, that is to say, for the space of fifty-four years. As this document was published in the lay press (Les Etrennes Helvetiennes, 1814), it occurred to me that it might not be devoid of interest to bring it before the medical profession.

These accounts were found among the papers of the Bâle professor, and are remarkable not merely for their detail, but because they enlighten us on the domestic economy of the epoch when they were computed. They show the income derived from the practice of a celebrated professor of medicine, the sums obtained from his botanical garden, likewise from his silk-worm industry (the first endeavor in this line made in the Canton of Bale), and even the price of canary birds.

I here transcribe in extenso the accounts. Let me just say that the Bâle pound of the epoch was worth 12 Bâle batzen. Now, a batzen possessed, at the time, the monetary value of twelve cents, therefore the Bâle pound was worth $1.44. This having been explained, let us examine Platter's total income for fifty-four years, and up to within two years prior to his demise.

An estate of £120,020 was a formidable one for the epoch, as the purchasing value of money in those days was probably at least five times greater than at present.

Felix Platter was born at Bâle in 1536, studied medicine in his native town, and took the bonnet of doctor in that city at the age of twenty years, according to Dezimeris, twenty-one according to Bridel. I accept the latter age as more probable. After a stay at the then famous University of Montpellier, Platter traveled in France

<table>
<thead>
<tr>
<th>Description</th>
<th>Pounds</th>
<th>Shillings</th>
<th>Deniers</th>
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<tr>
<td>Private practice, citizens of Bâle</td>
<td>5,031</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Practice among foreigners</td>
<td>23,497</td>
<td>17</td>
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<td>Consultations outside the City of Bâle</td>
<td>15,050</td>
<td>2</td>
<td>9</td>
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<tr>
<td>Gifts and presents</td>
<td>2,030</td>
<td>9</td>
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<tr>
<td>Pensions as city physician</td>
<td>1,660</td>
<td></td>
<td></td>
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<td>From the Archbishop of Bâle</td>
<td>280</td>
<td></td>
<td></td>
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<tr>
<td>From the Commander of Bucken</td>
<td>80</td>
<td></td>
<td></td>
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<tr>
<td>From my office of surveyor of the mint</td>
<td>371</td>
<td>13</td>
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<td>Pension of professor</td>
<td>11,139</td>
<td>6</td>
<td>8</td>
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<tr>
<td>From my dissections</td>
<td>38</td>
<td>16</td>
<td>18</td>
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<td>From my public lectures</td>
<td>97</td>
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<td>From my published books</td>
<td>971</td>
<td>13</td>
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<td>For examinations for the Doctors of Medicine and Deanship</td>
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<td>As rector of the University</td>
<td>339</td>
<td>3</td>
<td>4</td>
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<tr>
<td>From the Pro-Rectorate, etc</td>
<td>8</td>
<td>15</td>
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<td>From the Academic Convent</td>
<td>323</td>
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<td>From the deanery of St. Peter's</td>
<td>14</td>
<td>5</td>
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<td>For showing my museum and garden</td>
<td>179</td>
<td>5</td>
<td>2</td>
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<td>For my guardianships</td>
<td>260</td>
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<td>For my divers stewardships</td>
<td>2,166</td>
<td>11</td>
<td>6</td>
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<td>Income from my country-seat</td>
<td>10,618</td>
<td>13</td>
<td>11</td>
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<tr>
<td>Sale of orange and lemon trees</td>
<td>1,255</td>
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<td>Sale of limes and lemons</td>
<td>27</td>
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<tr>
<td>Sale of rosemary</td>
<td>262</td>
<td>12</td>
<td>8</td>
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<tr>
<td>Sale of plants from my botanical garden</td>
<td>502</td>
<td>5</td>
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<td>Rent of my house and other real estate</td>
<td>29,296</td>
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<tr>
<td>Legacies</td>
<td>350</td>
<td></td>
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<td>My wife's dowry</td>
<td>625</td>
<td></td>
<td></td>
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<tr>
<td>Inheritance</td>
<td>3,144</td>
<td>1</td>
<td>6</td>
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<tr>
<td>Boarders</td>
<td>4,026</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>The sale of divers objects</td>
<td>3,254</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Small clothes of knitted silk</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Products of my silk-worms' eggs</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sale of two canaries</td>
<td>2</td>
<td>10</td>
<td></td>
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<tr>
<td>Total in Bâle pounds at 12 per batze pound</td>
<td>120,020</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Communication made to the Medical Society of Geneva, May 7, 1919.
2 Privat-docent of the History of Medicine at the University of Geneva; Vice-President of the Section of the History of Medicine of the Royal Society of Medicine of London, etc.
3 The item "boarders" refers to sums received from students or young physicians who resided with the professor, as was customary in those days.
4 In United States money Platter's estate represented the no mean sum of $172,828.00, an amount that few American physicians can boast of at the end of their careers.
and Germany and returned to Bâle in 1560.

He became professor of medicine at the Bâle University and a salaried physician to the city of Bâle (archiates), positions that he fulfilled with honor and éclat for half a century.

His reputation became world-wide, and drew a large number of students to the University of Bâle, Platter alone having created one hundred and sixty doctors. He was consulted by people of many countries, and he declined many brilliant offers at the German courts, preferring to remain in his native city. However, by correspondence, which was both extensive and very lucrative, he became by his letters of consultation, physician to several princes of the houses of Saxony, Brandenburg, Lorraine, and Wurtemburg, also of Catherine, sister of Henry IV of France.

He was most useful to Bâle during the fearful epidemics of the plague which ravished the city in 1564 and 1610. He founded a museum of natural history, as well as the botanical garden of the university.

Honored by foreigners and highly respected by his fellow citizens, beloved by the poor, he succumbed in a dropsical state on July 28, 1614, at the age of seventy-eight years, Platter was six times rector of the University of Bâle.

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DR. ROBERT LEVET

Robert Levett, or Levet (17017-1782) was “an obscure practiser in physic amongst the lower people.” Boswell says, “such was Johnson’s predilection for him, and fanciful estimation of his moderate abilities, that I have heard him say he should not be satisfied, though attended by all the College of Physicians, unless he had Mr. Levett with him.” Levett is said to have picked up his small knowledge of surgery while serving as a waiter in a café in Paris, much frequented by some French surgeons, who became interested in their English servitor and gave him the opportunity of learning something of their art. He was a hard drinking man and seems to have made a most disagreeable impression on all who met him save the lexicographer.
WILLIAM PAUL CRILLON BARTON, SURGEON UNITED STATES NAVY, A PIONEER IN AMERICAN NAVAL MEDICINE

(1786-1856)

By FRANK LESTER PLEADWELL, M.D.

NEWPORT, R. I.

WHEN it was suggested as appropriate that the United States Navy should be represented in the list of authors contributing articles to the Anniversary Volume in honor of Sir William Osler’s seventieth birthday, and I was requested to furnish the article, I immediately cast about for a suitable subject. There came to mind a small volume, discovered some years ago in an obscure corner of the library of the Naval Medical School, remarkably advanced in its thought for the times, entitled “A Treatise containing a Plan for the Internal Organization and Government of Marine Hospitals in the United States together with Observations on Military and Flying Hospitals and a Scheme for Amending and Systematizing the Medical Department of the Navy” by William P. C. Barton, M.D., Surgeon in the Navy of the United States. This was the second edition, published in Philadelphia in 1817.

It occurred to me, therefore, that a biographical study of the author of this volume might prove of historical interest in revealing the state of naval medicine at that early period in our service. There have appeared several excellent biographical sketches of naval medical officers distinguished for bravery in action and heroic self-sacrifice in the line of duty, but so far as my knowledge goes, no one has essayed to portray a character like that of Dr. Barton, less heroic perhaps, but one whose influence in the direction of medical reform and sanitary improvement in the early Navy was unquestioned. His book first appeared in 1814 and the mere fact of its having achieved a second edition three years later, is an indication of the estimation in which it was held. It contained a fund of information collected from various sources, both at home and abroad, and revealed an originality of thought and an independence of expression which stamped its author as far in advance of the times. A similar work by Dr. Edward Cutbush of the Navy had appeared in 1808, but this dealt with subjects in army administration as well as naval, and lacked the breadth and originality of view characteristic of Barton’s book.

In the following biographical sketch I have endeavored to present the outstanding facts of Dr. Barton’s career in the Navy, and particularly to reveal his work as a pioneer in the field of American naval medicine.

William Paul Crillon Barton was born in Philadelphia, November 17, 1786. He was the son of William Barton, Esq., member of the bar, and grandson of the Rev. Thomas

2 The following are noteworthy examples:


Barton, an Episcopal clergyman, who came to America from Ireland, in 1751, under the patronage of the Penn family. The Barton family was of English descent, originally from Lancashire, but having obtained extensive grants of land in Ireland, settled there during the Commonwealth, or early in the reign of Charles II. The emigration of Thomas Barton took place when he was twenty-one, soon after his graduation from Trinity College, Dublin. He first opened a school at Norristown, Pennsylvania, but later became a tutor at the Philadelphia Academy. In 1753 he married Esther Rittenhouse, the daughter of a neighboring farmer and a sister of David Rittenhouse, the distinguished mathematician and astronomer, whose close friendship Barton enjoyed until his death. He accompanied the expedition against Fort Duquesne in 1758 in the capacity of chaplain, and published a sermon dealing with the disastrous incidents of that affair. In 1759 he moved from York County to Lancaster, where as rector of St. James' he remained for nearly twenty years, dividing his time between the duties of his office and the pursuit of natural history. Notwithstanding his friendship with Wash-
ington and other distinguished officers of the Revolution, he remained a Royalist and, declining to take the oath of allegiance to the new cause, was compelled to leave his post, going to New York. From that city he intended to proceed to England, but illness prevented and he died there on May 25, 1780. His widow returned to Philadelphia, making her home with her nephew, Dr. Samuel Bard, at one time physician to Washington.

William Barton, the eldest of Thomas Barton’s eight children, and the father of William P. C. Barton, was a lawyer by profession, a gentleman of substantial literary attainments, the author of the “Memoirs of Dr. David Rittenhouse,” and the designer of the United States seal. He married Elizabeth, the daughter of John Rhea, a Philadelphia merchant, and of their marriage several children were born, two of whom became distinguished surgeons, one the subject of this paper and the other John Rhea Barton, whose name is perpetuated as the originator of “Barton’s bandage.”

Another distinguished son was Dr. Benjamin Smith Barton, professor of botany at the University of Pennsylvania, and also, in later years, the successor to Dr. Benjamin Rush as professor of the theory and practice of medicine in the University.

Thomas Pennant Barton, a son of Benjamin Smith Barton, was also a man of cultivated literary tastes and achievements. It is noteworthy that he gathered together one of the best collections of Shakespeareana in America. These, together with some ten thousand miscellaneous books of his library,
First page of the "Sick Reports" of the U.S. frigate "United States." Barton was first stationed on this vessel when he entered the Navy.
were acquired after his death by the Boston Public Library, where they are known as the Barton Collection.

From the foregoing it will be seen that the subject of this sketch came of a family of students, and as a contemporaneous writer has stated: "His forebears were eminently qualified to infuse into his mind the rudiments of knowledge and the principles of virtue."

Dr. William P. C. Barton received his classical education at Princeton, graduating with distinction in 1805. Each member of his class assumed the name of some celebrated character, and Barton chose that of Count Paul Crillon, whose initials he retained throughout life. He began a study of medicine under the direction of his uncle, Dr. Benjamin Smith Barton, and received his degree in 1808. His inaugural thesis was entitled, "A Dissertation on the Chymical Properties and Exhilarating Effects of Nitrous Oxide Gas and its Application to Pneumatick Medicine." This was considered worthy of publication and for many years was accepted as a standard treatise on the subject. Soon after graduation he made a translation from the Latin of Jacobus Gregory's "Dissertation on the Influence of a Change of Climate in Curing Diseases."

After practicing medicine in Philadelphia for about a year during which time he became one of the surgeons to the Pennsylvania Hospital, he received an appointment as surgeon in the Navy, upon the recommendation of Dr. Benjamin Rush and Dr. Philip Syng Physick. He was for several years on active duty on the frigate "United States"; on the "Essex"; at the Navy Yard, Philadelphia; as surgeon to the Marines at Philadelphia; at the Naval Hospital, Philadelphia; on the "Brandywine"; at the Naval Hospital, Norfolk; at the Naval Asylum, Philadelphia; as chief of Bureau of Medicine and Surgery; at the Naval Hospital, Pensacola, and as president of the Board of Medical Examiners at Philadelphia. He distinguished himself by his professional skill and his scholarly attainments, and particularly by his bold and fearless advocacy of necessary reforms in the medical department of the Navy and the improvement of the status of the naval surgeon. During his periods of shore duty he was not content to pass his time unemployed, but devoted himself with marked professional ardor to the publication of various works, some growing out of his naval experience, like that on "Marine Hospitals" mentioned above, and one entitled "Hints for Naval Officers Cruising in the West Indies," written in 1830, and others mainly on botany. In 1815 he was chosen professor of botany in the University of Pennsylvania succeeding his uncle, and in later years he was connected with Jefferson Medical College in a similar capacity. He was also a fellow of the College of Physicians, a member of the American Philosophical Society, president of the Linnean Society, an honorary member and surgeon of the First City Troop, and upon the creation of the Bureau of Medicine and Surgery in the Navy Department, Dr. Barton was tendered and accepted the appointment of chief of this bureau. He was, therefore, the first chief of bureau, though not the first surgeon general of the Navy. This title was not created until 1869, and was first held by William Maxwell Wood. In fact Barton was much opposed to the adoption of the title surgeon general; and in 1838, when legislation designed to create it was pending before Congress, he addressed a pamphlet to the members of the committees on naval affairs of the Senate and the House of Representatives, entitled "A Polemical Remonstrance against the Project of Creating the New Office of Surgeon General in the Navy of the United States." This publication reveals that he was also a corresponding member of the Imperial and Royal Academy of Agricul-
tured of Florence; a member of the Linnaeuc Society of Stockholm and a lecturer on materia medica, botany, toxicology and naval therapeutics in the Therapeutic Institute of Philadelphia.

While chief of bureau he introduced many reforms, corrected numerous abuses and received for his services the warm recommendation and approval of the then Secretary of the Navy, the Hon. Abel P. Upshur. His attempts to improve conditions in the Medical Department, however, met with opposition and rendered him very unpopular with those whose interests or hopes were endangered by his efforts. He was not deterred, however, and in spite of resistance accomplished much in the direction of improvement of conditions in the Navy, both medical and non-medical in character. On March 20, 1844, after holding this office for eighteen months, he addressed a letter of resignation to the President praying for approval of his "earnest wish . . . to retire from the scene of unavailing efforts." He retained his naval commission, however, doing duty at Pensacola Hospital, but chiefly on the Medical Examining Board at Philadelphia, and at the time of his death in 1856, he had been for many years the senior surgeon in the Navy.

In September, 1814, Dr. Barton married Esther, daughter of Jonathan Dickinson Sergeant, Esq. (a member of the Philadelphia bar), and a granddaughter of Dr. David Rittenhouse.

Of his character, appearance, and personal attributes, I have been fortunate in securing a reflection from several sources. The portrait which appears on the second page of this article was taken from what appears to be an enlarged photograph now hanging in the office of the Surgeon General of the Navy. This came from the Naval Medical School some years ago, but I have not been able to determine anything of its prior history. It is said by one of his descendants to whom the reproduction was shown to be a good likeness and represents his peculiar manner of dress, which even for the times was considered somewhat elaborate and eccentric. It is supposed to represent him as he looked about the time he was appointed chief of bureau. In a speech delivered in the House of Representatives, early in 1844, by the Hon. Alexander H. H. Stuart of Virginia, Barton was referred to, in connection with an investigation into the expenditures of the newly created Bureau of Medicine and Surgery, in terms which give us an idea of the impression made upon a contemporary by his manner and style of composition. Mr. Stuart stated:

"I, like others, have been somewhat prejudiced by the artificial and involved style of his report submitted to the House; a prejudice by no means diminished by his manner and style of dress, equally unnatural and eccentric. But when I knew him better and heard and saw the improvements which he had introduced into the Bureau, my prejudice vanished and I became satisfied he was a most capable and faithful officer."

The same speaker refers later to his "bold and manly spirit of independence, which induces him to shrink from no responsibility."

In the findings of his court-martial in 1818, a reference was made by the court to "the vehemence of his manner (which) imparted impressions his language and intentions would not warrant."

One of the most valuable comments on his manner and personal qualities appears in an address delivered before the Alumni Association of the Jefferson Medical College, on March 11, 1871, by Dr. Samuel D. Gross, professor of surgery in the college and president of the association. He refers to Dr. Barton in these terms:

"The instruction in materia medica, during the two Winters of my connection
William Paul Crillon Barton

In attempting to find Dr. Barton's grave in Laurel Hill Cemetery, Philadelphia, I was fortunate in getting in touch with one of his lineal descendants. This gentleman I met later and obtained from him much additional information, of a character which could not have been secured elsewhere.

Through his kindness I have been able to read a biographical sketch of Dr. Barton which was compiled in 1879 by one of Dr. Barton's daughters. In this she refers to her father as possessing "many personal attractions and accomplishments. He retained, even to advanced years, a great love for music and great conversational powers. His character was a happy combination of qualities which attracted all and repelled none. Of great courage without any bravado, of affability without servility, of true warm-hearted benevolence, his qualities of heart and of mind were well calculated to secure lasting friends among the good and true."

I also learned from him that Barton had assembled in his lifetime a very remarkable collection of musical instruments, which he recalls seeing as a child in the home on Chestnut Street. It was here that Barton lived and had his office. The house is still standing, but in reconstruction it has been joined to another, which has been built over part of the plot, formerly the garden of the Barton home.

The facts recorded regarding Dr. Barton's career in the service were found to be few and meagre, particularly with reference to his service at sea, and the chief and most
valuable sources of information regarding him were found in “Officers’ Letters,” scattered throughout many volumes, covering the years 1809 to 1848, which are filed in the Navy Department Library. These, together with allusions made in his writings to various incidents of his life and work, have constituted the main sources from which the facts of this sketch have been drawn.

The records of the Navy Department show that Dr. Barton was appointed a surgeon on April 10, 1809, to take rank from June 28. His letter of appointment also contained orders to the frigate “United States.” In a letter which was written from the Pennsylvania Hospital, and addressed to the Hon. Charles M. Goldsborough, Esq., secretary of the Navy, he accepted his appointment and requested a delay of six weeks before joining the “United States,” explaining that the delay was necessary to enable him to complete his term of service at the hospital, which ran to July first. It is apparent from this letter that he felt a deep sense of obligation to fulfill what he considered an implied contract with the hospital authorities to remain until his period of service was completed, but his request was denied, for the “Sick Reports” of the “United States,” show that he was already aboard that vessel on June 7, 1809.

On June 10, 1809, Stephen Decatur, Jr., had joined the “United States” and hoisted his broad pennant as commodore for the first time, and then began the friendship with Decatur which lasted throughout life. Very little has been found respecting Barton’s service on this vessel, which apparently continued only until about November 10, 1810, for soon after that date he is found on the “Essex.”

Practically no medical records relating to the ships of this period are to be found in the Navy Department, but, by a mere chance, two thin volumes of the “Sick Reports” of the “United States,” in Barton’s own handwriting were found in the Library of the Naval Medical School, where they had been placed in 1905 by former Surgeon General Rixey, who had discovered them in a second-hand bookstore in New York.

In the early days of the Navy, although the regulations required the commander of a vessel to keep an official log, the government did not furnish the log book. It happened therefore that a book purchased by an officer for this purpose, was often regarded as personal property, and taken away by him when detached from the ship. It is not improbable that a similar custom existed with respect to medical records. This condition of affairs may account for the absence of medical records covering this period and also for the fortuitous discovery at this late day of the “Sick Reports” of the “United States.” These reports ran from June 7, 1809, to November 10, 1810, and were entered in Barton’s handwriting in two small note books. A reproduction of the first two pages, showing the opening entries, appears in the text of this article. As one scans the pages of these small books it is surprising to note how sparse is the information to be obtained regarding the movement of disease or important daily events. Only one entry is made giving the location of the ship, that occurring on the second page, where it is noted as “Crany Island, Elizabeth River, Vir.” Unfortunately, no record of the other ports or places visited is found. The usual day’s record shows the name of the disease, complaint or injury, rarely in a scientific nomenclature, which is set opposite the name of the patient, and an entry is made of admissions and discharges for the day. The progress of a patient is sometimes stated in a word or two, such as “improving,” “better,” or “worse,” too often the latter, and deaths are not infrequent. The prevalence of “typhus fever” is noteworthy and by this, of course, is meant the typhoid fever of later days, although the
occasional sudden demise of a patient with “typhus fever” suggests typhus exanthematosus. In those days, as now, itch and venereal diseases occupied a conspicuous position in the sick returns, and the occasional appearance of midshipmen with the latter class of disease, with the added remarks, “reported to the commodore as rheumatism,” denoted a kindly intention on the part of the surgeon to shield them from the stigma attaching to these affections.

On July 15, 1810, for the first time, Dr. Barton makes extended “Remarks,” at the end of the day’s record, as follows: “The dysentery and diarrhoea are now and have been for the last ten days the prevailing diseases on board the ship. Most of the patients on the sick list with other diseases are more or less afflicted with these complaints in a slight degree. Neither of these diseases, however, are of a very violent nature.” This constitutes the only clinical observation of any moment which I could discover in a review of the seventeen months’ record contained in these reports. It is also quite remarkable how seldom mention is made of the transfer of patients to hospital. However, considering the character of the so-called hospitals then available, it is perhaps not surprising that he preferred to retain the sick aboard ship. Later in his career he urged improvement of naval hospitals with characteristic vigor, and a critical reference in his book on “Marine Hospitals,” published in 1814, with respect to the hospital at the Navy Yard, Philadelphia, was the basis of charges, made by a brother medical officer, which resulted in the court-martial of Barton. The court, however, perhaps realizing the justice of his criticism, ruled that the specification covering the alleged offense need not be answered or refuted, and thus virtually exonerated Barton of this specification of the charge. Some of the entries in the “Sick Reports” are very obscure in their clinical and pathological significance. For instance, while there can be little question regarding the nature of the disease entered as “typhus,” which caused the death of Wm. Rysela on July 6, 1809, since Barton has added “sick two months,” what did James Williams, 1st, really succumb to on August 17, 1809, under the designation “nervous fever,” when on the previous day he first appears as “very ill, typhus?”

Barton mentions in his work on hospitals that he checked several cases of sea-scurvy on the “United States” by the liberal administration of lime juice. He had much to say later, after his cruise abroad in the “Essex,” of its virtues as an anti-scorbutic, and urged its adoption by our Navy, in an official report.

In the preface to the first edition of his work on “Marine Hospitals,” Dr. Barton refers to his attempts to bring about correction of the abuses and irregularities then prevailing in the medical department, by reason of what he terms “loose administration.” As his statement there fully reflects his attitude toward the problems confronting him on the frigate “United States,” and his grave concern for the welfare of the sick, and the improvement of medical supplies, I cannot do better than quote it at length:

“Having entered the navy as a surgeon when very young, and having been ordered to one of the largest ships in it, with a complement of 430 men, stationed in a warm and variable climate—I soon found myself not a little embarrassed by the perplexities that I daily met with in my practice on board. The unhealthiness of the climate, operating upon a variety of different constitutions in an entirely new crew; the change of diet and mode of life; the necessary and unavoidable exposure of boats’ crews to the fervid rays of a vertical sun, as well as to the damp and heavy dews of night, and at all times to the insalubrious exhalations of marsh
miasma—all combined to generate such perpetual sickness, that the frigate might almost have been called a hospital ship, the average number on the daily sick-list, of fevers and fluxes, being about 40. In this situation, on board of a ship just refitted, commissioned, and equipped, I found myself without half the comforts and necessaries for the sick that the hospital department should have been supplied with; yet this department had been reported as replenished with every requisite article for a cruise of two years, and together with the medicine chest, had cost the government fifteen hundred dollars. There were neither beds for the sick, sheets, pillows, pillow-cases, nor nightcaps—nor was there a sufficiency of wine, brandy, chocolate, or sugar; and that portion which the storeroom contained of these articles, was neither pure nor fit for sick men. The medicine chest was over-loaded with the useful, and choked up with many useless and damaged articles. Such was the state of the medical department of this ship! Upon a representation of it however to her commander, Com. Decatur, he generously allowed me all the necessaries I stood in need of, and thus enabled me to administer those comforts to my patients, which they so much required. What would have been my situation, had the ship immediately proceeded to sea, for a cruise of eight or ten months, upon my joining her, and before I had an opportunity of examining into the condition of the medicine and store chests . . . which might have been the case, these having been reported as sufficiently furnished? What the consequence would have been must be obvious! The other ships were not better furnished than the one of which I am speaking—and I perpetually heard of complaints on this score.

“What was the cause of these abuses? The want of a regular board of medical commissioners, whose peculiar province it should be, to order the proper proportions and quantities of medicine, comforts, and necessaries, for the publick ships, and who should have no interest, directly or indirectly, individually or collectively—in the furnishing of articles thus ordered.

“As I was at that time a perfect novice in the routine of ship duty, and having then but recently left the Pennsylvania Hospital, an institution in which order, system, and punctuality, render the practice of medicine a pleasure, I was overwhelmed with the difficulties I had to encounter in the performance of professional duties, where every species of inconvenience and disadvantage that can be imagined was opposed to the exertions of the surgeon. My feelings revolted from the idea of continuing in such a perplexing and distressing situation—and I became disgusted with the unavailing toil attendant upon ship-practice. I communicated my sentiments on this subject unrestrainedly to my lamented friend, the late captain Wm. Henry Allen, then first lieutenant of the ship. I ventured even at that early period of my naval service, to condemn the flagrant irregularities and abuses, that I could not but believe existed to a ruinous extent. In my conversations with him I often declared, that if such was always the deplorable condition of sick men on shipboard, I wished not longer to be their medical attendant; for my feelings were every moment in the day subjected to harassment and pain, from contemplating afflictions I was unable to relieve, for the mere want of comforts so easily procured on shore. He encouraged me, however, to persevere, and at the same time that he lamented with me the want of a superintending medical board, he tendered an offer of his assistance in making any arrangements compatible with the internal economy of the ship,
that I might deem calculated to meliorate the condition of the sick. I soon found that their situation was susceptible of much relief, even on ship-board—and I was not long concluding, that if proper steps were taken to furnish the ships with sick-necessaries of a proper kind, the practice of medicine and surgery in the navy could be rendered not only more beneficial to the sick, but less offensive to the humane feelings of the medical officer. I never lost sight of the opinion I had conceived, that the errors of the medical department of the navy might be easily corrected, and its abuses abolished."

Surgeon Barton’s relations with Commodore Decatur and with the first lieutenant of the “United States,” William Henry Allen, appeared to have been most cordial and harmonious. This is evidenced by the fact that Decatur, in 1813, applied to the Secretary of the Navy for Barton to be returned to the “United States,” and in 1817 he gave him a strong letter of recommendation to the then Secretary of the Navy, and both he and Captain David Porter of the “Essex” came to his aid in support of many of the reforms he had projected. Decatur in the letter of recommendation above-mentioned testified “to the great skill and attention and success with which he (Barton) practised during the above period.” (1809-1810) Late in 1810, however, Barton appears to have had some disagreement with certain officers on the “United States,” the nature of which is not revealed, but the resulting situation made it expedient for him to leave the ship. About this time the “Essex” was preparing to sail for Europe, and since her surgeon, Dr. Stark, was on leave at some distant point inland and could not return in time to reach the ship before sailing, with Decatur’s approval, and as a convenience to Capt. Smith of the “Essex,” Barton left the “United States” and joined the “Essex.” It was during this cruise that he gathered much of the information regarding naval hospitals, and naval medical practice abroad, both in the navies of Great Britain and France, which appeared later in his writings. His observations covered a wide range of subjects, including the construction and arrangement of all the principal naval hospitals of England and France, their organization and administration; sanitary matters touching the naval services; methods of training medical officers; rations; character of supplies furnished ships, their construction, etc. He appears to have visited London from Cowes, Isle of Wight, where the ship was lying, and, while there, to have met the celebrated Dr. Lettsom through an introduction from Dr. Rush, and to have inspected several hospitals. He mentions the homeward bound voyage of the “Essex,” which lasted two months, and speaks of the efficacy of an effervescing mixture of lime juice and salt of tartar for seasickness. This he administered to two passengers on board with great success. Other than the above, surprisingly few details of this period of his career were to be found in available material.

On June 30, 1811, he addressed a letter to the Hon. Paul Hamilton, Secretary of the Navy, requesting relief from sea duty and assignment to the Navy Yard, Philadelphia. He mentioned that he had been on sea service without any intermission since April, 1809, and had just returned on the “Essex.” He asserted his willingness to act in concert with, or subordination to, Dr. Cutbush, the surgeon in charge at Philadelphia, and although a surgeon himself, was agreeable to service in a position, which ordinarily would be assigned to a surgeon’s mate. His extreme anxiety to return to Philadelphia apparently arose from a desire to establish himself in

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4 This is the same Captain Allen who commanded the “Argus” in her encounter with the British Brig “Pelican,” August 14, 1813. The “Argus” had sunk twenty-two vessels off the British coast, but was defeated and captured by the “Pelican.” Allen died of his wounds at Mill-Prison Hospital, Plymouth, England.
practice there, "the accomplishment of which is his dearest wish," to supplement his income, and help support his aged father and seven brothers and sisters. This he desired to do, moreover, while his uncle (Benjamin Smith Barton), who was in a precarious state of health, was still able to take him by the hand and introduce him into practice. He refers to his uncle as a man "the tenure of whose existence is fragile indeed . . . thus there is the brightest prospect of my professional success subject to the constant shadow of a very near cloud." His family is constantly in mind, and as the eldest son, his concern for their welfare is often reflected in his letters. The pay of a surgeon at this time, including the value of two rations, was sixty-two dollars per month, a sum wholly inadequate to the value of the service performed, and of course, not sufficient to enable him to contribute materially to the support of his family. He speaks further of the difficulty aboard ship of keeping himself abreast the times professionally. "The unsettled and wandering life on board ship not only deters the gratification of professional ambition, but absolutely generates an inanition of mind very inimical to solid improvement of any kind. The sea does not subject me to any corporeal malady, but really produces a spiritless inaction and mental debility which all the resolution I have been able to exert for better than two years has not afforded me the power to overcome." His appeal, however, appears to have fallen on deaf ears, for he was not detached from the "Essex," but did manage to get leave until September 1st. A letter dated July 11, 1811, written from Baltimore, addressed to the Secretary of the Navy, refers to a bottle of lime juice which he is sending him by Lieut. Ballard for trial "in the form of a lemonade, after allowing it to settle for a day or two." This is one of four dozen bottles which Barton brought back from England and he explains that his object in sending the lime juice is to enable the Secretary to judge of the quality of juice used in the Royal Navy, which is the kind he wishes to recommend for our own. He also mentions his intention to submit a report on this subject. This letter indicates that he had been in Washington, and was on his way to Lancaster, but had been delayed in Baltimore on account of an attack of "summer complaint." On August 26, 1811, writing from Lancaster he requests two months' extension of leave, and to be assigned to duty at the Navy Yard, Philadelphia. In this letter he makes the first reference to his intention of writing at length upon his observations abroad and upon a plan for the better government of the Medical Department of the Navy, and puts this intention forth as a reason for the change of duty requested. He also states his desire to take courses of study in the Pennsylvania Hospital. A reference is made in this letter to Mr. Latrobe, whom he has asked to see the Secretary and support his request. But it is all to no avail, for a peremptory order from the Secretary, dated August 29th, is sent to him to return as soon as possible to his ship the "Essex," at Norfolk. Barton answered this letter from Lancaster on September 4th, and voiced his disappointment at not being accorded the leisure to complete his report, but states his intention of doing so at Norfolk. This letter reveals grave discontent at being continued on duty in the "Essex," a vessel "smaller than the one he first joined when he entered the service," where "his services gave the greatest satisfaction to Commodore Decatur and the officers generally." As respects the latter, with some of whom he had been in disagreement, he states that there has been a reconciliation and he desires his transfer from the smallest frigate in the Navy, back to the

5 Benjamin Henry Latrobe, 1764-1820. An English architect who settled in this country in 1796. He became identified with the Navy Department as an engineer, and designed the first Hall of Representatives at Washington.
"United States." He endeavors to reinforce his argument by adding that, "the present surgeon of the 'United States' was a surgeon of a cutter at the time I was in the station he now occupies." It is not unlikely that he received still another order from the Secretary to expedite his return to the "Essex," for Barton wrote from Philadelphia September 18, 1811, explaining the delay in his journey to Norfolk, as being due to a continuance of the affection which overtook him at Baltimore two months previously, and that he has written Captain Porter of the "Essex" to that effect. He encloses a physician's certificate in support of his statement.

A letter written October 25, 1811, from Norfolk, transmits to the Hon. Paul Hamilton, secretary of the Navy, a number of sheets containing a plan for the internal arrangement of marine hospitals. This evidently is a further development of his proposed report, which finally grew into the book he published in 1814. The term "marine" hospital as used frequently by him was equivalent to the naval hospital of the present day. At that early period a distinction such as prevails at present did not exist. There were, it is true, "Marine" hospitals for merchant seamen, available to the Navy, which became separated from the Navy by the Act of Feb. 26, 1811.

On November 2, 1811, Dr. Barton is back in Philadelphia, on leave, in order to attend the funeral of a brother. He appears to have travelled by water from Norfolk to New York, on this occasion, in the U.S.S. "Hornet," then under command of Captain James Lawrence, thence by stage to Philadelphia, leaving Norfolk October 26, and arriving in Philadelphia November 2, which for the times was quite rapid travelling. In the preface to his 1814 publication he refers to the trip on the "Hornet" and to his visit to Washington in July, 1811, when Mr. Hamilton called upon him to submit his ideas respecting the proper rules for administration of the service hospitals, which the Secretary was required to submit to Congress at its next session. The Act of February 26, 1811, had separated the navy from the conjoint control of marine hospitals for merchant seamen and had authorized the establishment of distinct institutions for the navy, but nothing was done until 1832 toward furnishing these hospitals, except to rent temporary structures near the principal navy yards. From that date naval hospitals slowly arose at the principal stations. It was this report containing suggestions for the internal organization and government of hospitals, requested by the Secretary, which Barton refers to in the preface of his book, as having been written "during a tempestuous passage from Norfolk to New York, in the Hornet sloop of war, with the ever to be lamented captain Lawrence, under the disadvantages, too, of sea-sickness and acute mental affliction from the recent loss of a friend—a brother."

On November 18, 1811, Barton writes from Lancaster, where he had gone after his brother's funeral, renewing his request to be ordered back to the "United States," stating that his action had the approval of Commodore Decatur, and quoting from a letter received from Mr. Allen, first lieutenant, in substantiation of their desire to have him. This letter, which is addressed to the Secretary, also mentions the intention of the writer to leave Lancaster for Philadelphia on November 19th, on his way to Norfolk. His failure to return promptly to his post of duty called forth peremptory orders from the Secretary, dated November 23, and Barton replied from Philadelphia on November 27th, in effect, that he considers the Secretary's reprimand for not obeying orders as entirely unmerited, and he enters into a long explanation of the circumstances surrounding his transfer from the "United States" to the "Essex" in November, 1810. His delay at Philadelphia, he states, is due to information received
from Norfolk that the "Essex" is coming up the Delaware, and that he has remained there to await her arrival. There is a feeling of resentment plainly apparent in this letter to the Secretary which may have had its origin in the knowledge on the part of Barton that the Secretary had recently written Dr. Benjamin Smith Barton, his uncle, and referred to Barton as "too much indulged."

Still on the "Essex," then at Newport, Rhode Island, on December 26, 1811, Barton writes to Mr. Latrobe, who has agreed to intercede with the Secretary on his behalf in the matter of receiving a twelve months' furlough. He repeats his desire to enter into practice at Philadelphia, but adds another reason for the furlough, which has not hitherto come to light, although it may have been a powerful influence, in addition to others, in urging him to the repeated efforts he has made to secure the desired duty. This reason, "very dear to my heart", has to do with his engagement to Miss Sergeant, who, he mentions, is a granddaughter of Dr. David Rittenhouse, and he asks Mr. Latrobe if she is not a connection of his. Barton encloses in this letter a communication from Captain Porter approving his request, which he asks Mr. Latrobe to present to the Secretary, when he makes the plea on his behalf.

A letter under the same date goes forward from Barton to the Secretary requesting the furlough of twelve months "in order to get married and also to assist in the support and education of his youngest brother." He suggests a Dr. Miller as his relief on the "Essex." But his efforts prove fruitless, for Captain Porter receives a letter from Mr. Hamilton which amounts to a denial of Barton's request. On January 18, 1812, he renews his application but reduces the length of the furlough acceptable to him, from twelve months to four or five months. On the 21st of January, not having had any reply to his previous letters he writes he will take any length of furlough which will be agreeable to the Secretary. On January 22d he addresses the Secretary again requesting the return of the hospital plans forwarded October 25, 1811, and refers to additional work which he is doing in connection with them. On January 24th, he informs the Secretary that his father has requested him to resign, but states his unwillingness to do so, on account of a promise made to his uncle not to leave the service until after he has completed his book on Marine Hospitals and the Medical Department of the Navy. On February 13, 1812, not having had any reply to his letters of the 18th, 21st, and 24th of January, addressed to the Secretary, he sends him duplicates and also encloses a copy of Captain Porter's letter. As a possible relief for him on the "Essex" he suggests Dr. Daniel Hatfield of the "Nautilus". The next letter is dated March 8th, 1812, and in this he reports himself as ill in sick quarters at Newport, Rhode Island, with an "affection of the heart," and desires that a surgeon's mate be sent to the "Essex," as a substitute during his illness, and to relieve the surgeon of the "President" of the necessity of looking out for the sick on the "Essex" which he has done for two months. On March 20th, 1812, Captain David Porter of the "Essex" wrote him the following letter:

"It is with much pleasure I acknowledge the receipt of your highly gratifying letter of this date and it is the source of the most pleasing sensation to receive the testimony of the approbation of one whom my duty and inclination both prompt me to esteem for his strict attention to his profession and for his character as a gentleman. I cannot but regret the unpleasant circumstance that now renders your absence from duty necessary and offer you my best wishes for the speedy restoration of your health and assurances of the extreme pleasure it
would afford me to have you again attached to my command."

On March 21st, Commodore John Rodgers on the "President" granted Barton a furlough of five weeks for the benefit of his health, on the expiration of which he was desired to return to the vessel to which he was then attached. On April 3, 1812, Barton was ordered to the Navy Yard, Philadelphia, as assistant to Dr. Cutbush, and the next letter from him to the Secretary is dated at Washington April 4, 1812. In this letter he refers to certain "Rules and Regulations for the Government of Naval Hospitals," which apparently the Secretary had submitted to Barton for criticism. He addresses his reply through Mr. Goldsborough and expresses his unqualified approval of the "Rules." His duty at Philadelphia was not long undisturbed, for on June 22, 1812, he was ordered to the brig "Argus," with an intimation that after a short cruise he might expect to return to Philadelphia. His reply by letter dated June 24th, 1812, complaining of his treatment since being in the service and protesting against being assigned to a brig after service in a frigate, apparently had the desired effect, for there is no evidence that he went to the "Argus;" on the contrary, several letters from Dr. Cutbush to the Department during the succeeding months make references to Barton in connection with duties at the Navy Yard or vicinity. His official record, however, shows that on February 20, 1813, he was ordered to the "United States," but these orders were revoked for reasons which appear later.

On January 1, 1813, Lieutenant John B. Nicholson, who was with Decatur on the "United States," then at New York, had written to Barton as follows:

"The Commodore is in want of a Surgeon and has requested me to write you on the subject, and if you will go again in this ship in that situation, you will be so good as to write me immediately, and he will then apply for you to the Department. Although so long silent, believe me, I have often thought of the many pleasant moments passed in your society, and I as well as my mess will be happy to call you by the endearing name of mess-mate and friend. To Spencer Sergeant will you give my respects, and believe me to be your friend."

What answer Dr. Barton made to this letter is not known, but subsequent correspondence from Decatur to him, makes it plain that he declined the appointment. On March 11, 1813, Commodore Decatur wrote him as follows:

"Enclosed is a letter which I have received from the Navy Department with instructions to forward it to you. I apprised the Secretary of the reasons which you had urged to me, to induce the recall of the order you were under for my ship. I stated to the Secretary, that if they struck his mind with the force they had mine, you would be gratified in your wishes, and some other gentleman substituted. Will you have the goodness to let me know your determination on the subject as soon as possible. Your friend and humble servant. Stephen Decatur."

The enclosure referred to in this letter was in all probability the Secretary's order, which reads as follows:

"Com. Decatur wants a Surgeon, and from his confidence in your abilities, he has asked that you might be ordered to his ship. Anxious as I am to give him a Surgeon acceptable to him, I have to direct that you will proceed to New York and place yourself under his command. W. Jones."

I have given this correspondence at some length since Barton's declination to sea duty in time of war subjected him to severe
criticism, openly expressed in later years, when he was chief of bureau, by his enemies, of whom he appeared always to have a liberal number, who were active at the time in attempting to legislate him out of office. In 1843 a proviso was attached to the Naval Appropriation Bill which provided that any appointee as chief of bureau, in order to be eligible, should have completed at least five years' service at sea. The effect of this, if passed, would have been to vacate the offices of two chiefs of bureau, of which Barton held one. In defense of his position and in answer to the criticism that he had refused service in time of war, Barton addressed a letter to the Hon. George Evans, of the Senate, in which he referred to his declination to go to the "United States" in the following terms:

"The only order he received during the war, was one to Commodore Decatur's ship. That officer was the embodiment of honor and heroism, and that officer obtained a revocation of that very order, under a full knowledge of all the circumstances of the then employment of the undersigned in Army duty, as well as Naval duty; and with a knowledge too of the state of his health, then improving but not reinstated. . . . If such a man as Decatur saw no wrong in the declination of the order to his own ship; if he undeviatingly bestowed his respect on the undersigned, from the first of his acquaintance with him until the day of his death, can any other man in the Navy be justified in an attempt to impugn the reputation of the undersigned on that ground?"

The reference to "Army duty" in this letter brings to light the fact that in 1812 and 1813 while on the Philadelphia station he had offered to perform the duties of surgeon to the different recruiting rendezvous of the Army District.

The District Orders of February 1, 1813 read:

"His (i.e. Barton's) certificate is necessary to pass a recruit and no other physician is to be called upon to visit and pass enlisted soldiers, except in circumstances which will not admit of delay."

In his work published in 1814, he refers to this service as follows:

"In the first year of the present war, I examined two thousand recruits in the city, and from the neighborhood of Philadelphia. Twelve hundred only of this number did I pass as able-bodied men; and of the rejected number, 800, more than two-thirds were refused on account of rupture."

On May 10, 1813, Dr. Cutbush having secured his own transfer to duty in Washington, Dr. Barton made application to succeed him at Philadelphia. It does not appear that this request was denied, and at any rate he appears to have remained near Philadelphia, carrying on his service duties, Army and Navy, pursuing his practice, and delivering his lectures as professor of botany at the University. In addition he did a prodigious amount of writing, and published several books. In a letter to the Secretary dated May 25, 1813, he voices his concern at the insufficient accommodations for the sick at the Navy Yard. He states that the small building appropriated to the reception of sick, calculated to accommodate eight patients, now has twenty-four sick sailors, and suggests the necessity of some temporary arrangement. Commodore Murray declined entering into any measure without instructions from the Secretary, but approved of Barton's writing to represent the matter and, as a result, the Secretary authorized the erection of a frame building. It was his strictures on the sick quarters at this yard, appearing in his book published the next...
year, which Dr. Harris objected to as reflecting upon Dr. Cutbush and which led to Barton's court-martial in 1818. It is interesting to note just what Barton said in this connection, and to see how far his contemporaries bear him out with respect to the standards of sick accommodations available in the Navy at that time. He states:

"I have myself seen among a number of sick seamen with whom I was left in charge at the navy yard of this place (Philadelphia) where they were necessarily huddled into a miserable house, scarce large enough to accommodate the eighth part of their number—a spirit of impatience. . . . So wretched was the hovel and so destitute of every necessary comfort for sick persons, in charge of which I was left with thirty patients . . . that every man who gathered sufficient strength . . . absconded immediately."

On March 17, 1820, Commodore John Rodgers, then president of the Board of Navy Commissioners, addressing the Chairman of Naval Affairs of the Senate, represented the inexpediency of blending Navy and Marine (merchant) hospitals, in speaking of the temporary hospitals at Navy yards, stated as follows: "Cheerless and comfortless as they are, they are yet preferable to hospitals provided for seamen of the merchant marine." This comment on temporary hospitals, it will be noted, was made some seven years after Barton's statement.

A letter from Captain Chauncey, December 24, 1810, then in command of the Navy Yard, New York, to the Secretary of the Navy may be quoted as indicating the character of the sick quarters on that station:

"I conceive it to be my duty to avail myself of this opportunity to call your attention to the situation of the sick on this station, and the particular hardship upon officers who may contract disease in the execution of their official duties, to be obliged to take lodgings at great expense, which frequently subjects them to pecuniary embarrassment, or to be placed in common with the sailors and marines in a large room that is neither wind nor water tight. To give you some faint idea of what is called the hospital on this station, imagine to yourself an old mill, situated upon the margin of a millpond where every high tide flows from twelve to fifteen inches upon the lower floor and there deposits a quantity of mud and sediment, and which has no other covering to protect the sick from the inclemency of the season, than a common clap-board outside without any lining or ceiling on the inside. If, Sir, you can figure to yourself such a place, you will have some idea of the situation of the men on this station."

It does not appear, therefore, that Dr. Barton in his statement of fact regarding the sick quarters at Philadelphia had represented a condition which was peculiar to any one place in the naval establishment of those days, but one more or less characteristic of several. Under date of September 20, 1816, there appears a letter in the files of the Navy Department from Dr. Barton, enclosing one from his father, both of which were addressed to James Monroe, then Secretary of State. These letters solicited a favorable recommendation of Dr. Barton to the notice of the Secretary of the Navy, the Hon. Benj. W. Crowninshield, or to his assistant, Mr. Homans. Whether as a result of this correspondence or not, is not certain, but on September 30, 1816, Dr. Barton was ordered to report to Commodore Murray at the Philadelphia Navy Yard for duty, presumably as surgeon to the Marines. On November 7, 1817, he attained his real goal, by being ordered to the Naval Hospital, superseding a junior, Dr. Thomas Harris, in that position. This supercession of Dr.
Harris created ill feeling on the latter's part, and led to the court-martial of Barton in January, 1818, on charges preferred against him by Harris. The circumstances preceding this action were rather complex, but somewhat as follows: In November, 1817, Dr. Barton's father had succumbed to his last illness at Lancaster, and after settling his father's affairs there, Barton had proceeded to Washington, armed with a letter of introduction from Richard Rush, Esq.,6 to President James Monroe. Barton duly presented his letter, made his call on the President and asked for a more extended interview, which was granted him on the evening of the same day. At this interview Barton pressed his claim for duty at the Naval Hospital at Philadelphia. With President Monroe favorably inclined toward him, and armed also with a letter from Decatur to the Secretary, recommending him "for any vacancy that may exist in the line of his profession," he approached Mr. Homans, acting in Mr. Crowninshield's absence, and his orders to the Hospital soon followed. In acting in the manner described, Dr. Harris considered that Dr. Barton had treated him unfairly, and he proceeded to bring charges, founded partly on this incident and partly on the statement in his book, derogatory, as he thought, to Dr. Cutbush, which has already been alluded to. While the charges against Barton were pending, he received a note from Commodore Alexander Murray, in command of the Philadelphia station, asking for his resignation, or, as an alternative, an order of arrest. Barton's reply, I think, is worth quoting:

"Sir: I have received your note of the 10th Dec. 1817, by Capt. Brown, in which you say 'Capt. Brown is empowered by me to offer you the alternative of resigning your commission as surgeon in the Navy of the United States or to hand you

your arrest'; and in reply to it I have to say, that conscious of the strictest propriety in my conduct relative to the station of Hospital Surgeon of this place, I have not one minute's hesitation in rejecting the alternative proposed."

The court-martial which was convened at Philadelphia January 7, 1818, charged Barton with "conduct unbecoming an officer and a gentleman," with two specifications in support of the charge, the first of which related to a statement in Dr. Barton's book on "Marine Hospitals," previously mentioned, criticizing the condition of the hospital at Philadelphia, which Harris claimed tended falsely to degrade the character and reputation of Barton's predecessor there, Dr. Edward Cutbush, who at the time was surgeon in charge. The court ruled that no answer or refutation need be made to this specification of the charge. The second specification of the charge that Barton had, while surgeon to the Marines at the Navy Yard, Philadelphia, "insidiously solicited and procured Dr. Thomas Harris to be superseded and removed from his place at the Hospital, and obtained it for himself." It appears that Barton had "jocosely" remarked to Harris sometime prior to the time he was called away to attend his father's funeral, that he (Dr. Harris) had better look to his position at the hospital as he intended getting it for himself if he could, especially as his seniority entitled him to it. The court decided that the charge was sustained "to a certain extent only" and acquitted Dr. Barton of having uttered a wilful and deliberate falsehood. "The court deemed it derogatory, however, to the honor of the service, . . this shuffling for particular places, presumed to be given according to seniority or merit and which should ever be left to flow from the spontaneous choice of the guardians of our interests and our rights," and sentenced the accused to be reprimanded by the Secretary of the Navy. The court also stated in the

6 Secretary of State under Monroe, later minister to Great Britain.
letter of reprimand that they "were peculiarly struck with the number and weight of testimonials adduced in relation to your talents, your usefulness and heretofore honorable deportment."

This court-martial was unique in many respects, particularly in that President Monroe was summoned as a witness for the defense. On the back of the summons he stated that official business would prevent his appearance, but he submitted full answers to the interrogatories sent him, and these were favorable to Barton. On his trial Dr. Barton introduced a long forty-eight page letter of defense, which is a remarkable literary production, unfortunately much too long to include here, but I think his final peroration is worthy of presentation:

"I yet firmly believe the reality will sooner or later appear. There is an invincible strength and boldness in truth that rends whatever cloak dishonesty may put over it; and despite of every un­toward effort to conceal it from view, it fearlessly shows its face! Well for the inno­cent that this is so and woe to the one who meddles with and disturbs the calm and consistent operation of honest policy! A short lived triumph may be his boon, but remorse must soon destroy it and in the fullest conviction I believe with the poet:

There surely is some guiding power
Which rightly suffers wrong,
Gives vice to bloom its little hour
But virtue late and long!"

The letter of introduction from Richard Rush to President James Monroe, which has been referred to above, contained senti­ments of warm esteem and appreciation of Barton's professional standing. It refers to him as enjoying and in a very high degree deserving "the respect and esteem of all who have had the pleasure of his acquaintance. In speaking of his service in the Navy, Rush states that "he (Barton) exercises its duties (i.e., duties of his calling) with equal credit to himself and advantage to the service . . . the opportunities of a long acquaintance enables me to certify, in the warmest terms to his permanent worth." In answering the interrogatories sent to him by the court, President Monroe referred to Dr. Barton as follows: "My own impression was also favorable to him proceeding from what Mr. Rush had said, from my great respect for some of his relations, distinguished for their literary attainments, and the interest I took in the welfare of his mother. My impression now is that the Doctor urged his claim in his observations to me with delicacy towards his opponent and modesty to himself."

Between the years 1814 to 1818, during his period of duty at Philadelphia, he com­pleted and published two works on botany, one, the "Vegetable Materia Medica of the United States, or Medical Botany," containing a botanical, general, and medical history of medicinal plants indigenous to the United States, a two volume work, and the other the "Compendium Florae Philadel­phiae," containing a description of the indigen­ous and naturalized plants found within a circuit of ten miles of Philadelphia, also in two volumes. On October 17, 1814, he read a paper before the Linnaean Society, of which he was president, on Holcus bicolor, a plant used in Lancaster as a substi­tute for chocolate. In the year 1820, there appeared his "Memorial from the Professor of Botany in the University of Pennsyl­vania, to the Trustees of that Institution," praying for the removal of the professorship of botany from the faculty of natural sci­ence to the medical faculty, and urging that botany be added to the subjects requisite for the attainment of a medical degree.

These works reveal Barton as a scientist of great ability and are evidence of his zeal in rendering available a knowledge of the general and medical botany of the United States.

Barton's fellowship in the College of
Physicians lapsed for some reason in June, 1822, and, while there is little evidence to support this view, it is thought that this may have been the result of some local disagreement growing out of the movement to found another medical school at Philadelphia at about this time. As early as 1818, Barton had endeavored to obtain a charter for a new medical college, but this was strenuously opposed by friends of the University of Pennsylvania, and the efforts of Barton and his associates proved unsuccessful. Seven years later, however, the Jefferson Medical College was established.

At this time or a little later Barton appears to have been placed on half pay, and in 1823, there is evidence that he lost even this income from the government, for in a letter addressed to the Secretary of the Navy, dated April 26, 1823, he refers to being "cut off from pay by Act of Congress one year ago." In speaking of his circumstances in this letter, he refers to his writings as quite unremunerative, and of his salary as professor of botany as being only $120.00 a year, "but even this has not been available for the present year as there was no class in botany." The letter finally leads up to a request to be allowed to remain in Philadelphia for financial reasons, and because of the state of his health, which is attested as unsatisfactory by three physicians whose certificates he encloses. On April 23, 1823, in spite of the foregoing he is ordered to proceed by water to Norfolk and join the "Congress." A letter follows, promptly written to President James Monroe, requesting the revocation of the orders, on account of an engagement he has entered into, to finish a book entitled, "A Flora of North America," which it develops is dedicated to Monroe. This book is to be illustrated by colored figures, drawn from nature by Barton, and colored by his wife. His orders to the "Congress" were revoked May 1st. On November 29, 1824, he writes to the Secretary offering free instruction in botany to any medical officers who may be stationed in the vicinity of Philadelphia. On the back of this letter is a penciled approval by the Secretary, with directions that instructions be written to surgeon's mates in Philadelphia to avail themselves of the offer. On May 12, 1825, orders were issued to Dr. Barton, for duty at the "Navy Yard and Station, Philadelphia." These orders probably referred to his duty with the Board of Medical Examiners established there about this time, as correspondence between Barton and the Department now begins to appear, dealing almost exclusively with matters pertaining to this Board, and the letters extend over the succeeding four or five years. It was during this duty that Barton sought for and obtained substantial improvements in the methods of securing properly equipped medical officers for the naval service, and also, largely through his efforts, that certain professional qualifications were required for promotion. His interest in this subject is very well expressed in a letter dated March 11, 1831:

"Conceiving it of the utmost importance that a surgeon of the Navy should be a man of an exceptional character and habits and good education, either by the usual academic opportunities, or such other successful exertions, and conceiving also that his literary acquirements should be so respectable that he may not disparage, by comparison, the literary and scientific character of his country, when he shall come by conversation and professional intercourse with the enlightened medical officers of the English, French, and Spanish navies and armies, to invite such comparisons, the Board determined that it was proper and would prove useful to meritorious individuals, and certainly beneficial to the service, to require of each candidate for promotion answers and documents asked for in the accompanying circular. (Certificates relating to moral
character, etc). Several have immediately complied in a manner not only altogether satisfactory but redounding to their credit in the eye of the Department, when their credentials, which will form a part of the records of the proceedings of this Board, shall come before you. It is presumed that those who cannot procure testimonials of correct habits and moral conduct do not deserve them, since the Board believes that common even-handed justice will oblige every conscientious surgeon to report truly the points of his assistant’s behaviour on which he may be interrogated, especially as the requisition for such report is predicated on your instructions. The Board have consequently decided that with your approbation the course commenced will be pursued. The Board have directed a similar circular to be addressed to candidates for admission.”

On May 4, 1829, orders were issued to Barton for sea duty in the Mediterranean Squadron, but they were revoked on May 18, for reasons which are not revealed. A letter written May 30, 1829, to the Hon. John Branch, secretary of the Navy, acknowledged the receipt of an order appointing him a member of a board of three medical officers required by a resolution of Congress to give separate opinions on the necessity or expediency of distilled spirits constituting a part of the ration allowed midshipmen and on September 16th he transmitted his report on this subject, with a statement in explanation of the long delay, saying he desired to hold his report in order to reflect upon his conclusions sufficiently, and to change them, if more mature consideration seemed to warrant. But he stated that his opinions as framed originally, were unchanged. The views he held on this subject are expressed in full in his book, “Hints for Medical Officers Cruising in the West Indies,” published in 1830. Here in a footnote he refers to the reports, and states in his matter of fact way that

“A more robust and vigorous state of health could scarce be found, than generally prevailed in the steerage . . . and yet these gentlemen are well deserving the remark, one and all, of most entire temperance; having drunk water only in their messes, during the whole cruise. . . . The point of temperance just noticed, shows how much good a medical officer may effect, by precept seconded by example. I instilled the importance of temperance—my pupils knew me to be their friend. They gratified me by acquiescence. They were healthy, happy and have been commended by the Department for their example. . . . If any medical man of the Navy would expect to be valued for any advice, relative to temperance, he must set the example by his own habits, of the precepts he would inculcate. If a medical officer shall drink brandy, with what face can he recommend other officers to discard it as pernicious? If any professional men are imperatively called on by every sense of duty and propriety, to practise temperance, it is the medical officers of the navy. So much do I despise this practice in medical men, especially of the navy, that I shudder when I see one take brandy and water. I do more, I fear and mistrust his professional efficiency and skill. I unhesitatingly declare, that I will ever strive by my vote and influence, to keep out of the corps any who may desire to enter it, whom I may have reason to believe addicted to so dangerous a license in his habits. And I also declare I will never give my vote, if I am on the board of examination, for the promotion of any assistant to the rank of surgeon, whom I know to forget, by habitual stimulation, what is due to the high trust reposed in him; and this I would do, let his talents
or qualifications be ever so good. For, how long would they be useful to himself or the service? Besides this consideration, his bad example is ten fold the more hurtful, by reason of his being a medical man. A brandy-drinking physician! I cannot conceive of such a thing—I will not admit it to be possible. I trust there are none in the navy. If there be, shame on them to smirch their calling. If, I repeat, there be any "bingo" or "blue-ruin" doctors in the navy, they should not be there.”

On December 27, 1829, he acknowledges receipt of a letter from the Secretary which directed him to hold himself in readiness for duty on the “Brandywine.” This vessel was fitting out for special service in the Gulf of Mexico, and on January 4, 1830, Barton reports for this duty to Commodore Isaac Chauncey at New York. He remained on the “Brandywine” until July 12, 1830, and then was on leave until September of that year. It is probable that he employed this interval in writing the “Hints for Naval Officers,” mentioned above, which was published in September, 1830. The vessel “Brandywine” proved to be a damp, hence a sickly ship and during the cruise she was exposed to all the malign influences attributed to a West Indian climate, from which, however, the personnel came home in much better condition than was usual in those days. In the “Appendix” to his “Hints” appears a letter dated March 10, 1830, written on the “Brandywine” (near Sandy Hook), addressed to the commanding officer, Captain Ballard, which makes it clear that Barton was fully aware of the difficulties of maintaining the health of a ship’s crew during a cruise in the West Indies in those days, and that he was keenly alive to many of the principles of hygiene which must be applied to safeguard health while there. His views regarding the non-contagousness of yellow fever followed those of Rush, but he states its causes as plural, “the sun, the dews and the rains.”

The ship had passed the winter in a Northern climate, a season characterized that year by great severity and unusual length. As a consequence, the whole crew was transferred from the receiving vessel with heavy colds. The following day presented a sick list of fifteen. In one week there were forty, and after the lapse of a few days more, the sick had mounted to fifty-eight. “With two or three exceptions, all of these were afflicted with the diseases arising from intense and continued cold; such as frosted hands, fingers, toes and feet, chilblains, pleurisies, pneumonic affections, etc. One midshipman and five men were sent to the naval hospital with scarlet fever for the indispensable benefits of fire and other comforts. . . . In view of this state of the crew and of the fact that the ship will be in the West Indies during the season most favorable to the fatal endemic disease of that region, I cannot withhold the opinion—that a disastrous result of the cruise will most probably attend its termination.” Barton therefore advised the continuance at sea as much as possible and the avoidance of Havana and other unhealthy ports. On July 7, 1830, the ship was back in Hampton Roads, having visited Santo Domingo, Havana, Vera Cruz, Tampico and Pensacola. During the cruise 488 sick had been admitted to the list, comprising various ailments, but including:

“A great proportion of cases of typhoid, pneumonia, scarlet fever, low fever of tertian and quartan types, diarrhoea and rheumatism, diseases generated by dampness. When this dampness became a heated moisture, as it soon did in the West Indies, the cases of fever were of extremely dangerous aspect, and the pneumonic and anginose affection general, and excessively distressing and difficult to manage. Sore throats running to ulcera-
tion, with dejected spirits and low state of the system, accompanied more or less, all the cases. I attribute the sickly condition of this ship . . . chiefly to an unpropitious winter . . . a foul hold and lower apartments, a bilged well, and perhaps some other causes not now necessary to be mentioned . . . Had the 'Brandywine' continued two or three months longer in the West Indies, I have no doubt that the yellow fever would have made sad havoc amid her officers and crew. Such a damp, ill-ventilated and wet ship should not again be sent thither.

In spite of the insalubrious record of the ship in a previous cruise, during which she lost forty of her crew from disease, Barton reports only ten deaths, and of these only two died from "fever induced by the climate" which Barton alleged was not yellow fever, as the cases "wanted the gastric affection of that disease."

As there was considerable evidence of a foul hold, after arrival at Norfolk, and upon Barton's urgent representation, the ship was evacuated of personnel, and the hold broken out. This was found to be in an excessively foul condition. On the expiration of his cruise on the "Brandywine," on July 12, 1830, Dr. Barton was granted unlimited leave, but on September 2, 1830, he received orders to report to the Norfolk Hospital, and here he remained until December 1, 1831. Little is to be found reflective of his activities during this period. Soon after his arrival there he requests that a suitable boat and boat's crew be furnished the hospital, and there is correspondence with the Department relative to the rations of hospital patients, and their laundry. For a number of years subsequent to his Norfolk duty, Barton was president of the medical examining board at Philadelphia, in which position he introduced many reforms governing the examination requirements for candidates for admission, and for promotion. In this work he always had the interests of the service at heart but he was by no means blind to the individual officer's rights and privileges.

On June 10, 1833, he writes to the Secretary of the Navy stating that a vessel had just arrived from Manila, on which is a Dr. Burroughs, who has a limited quantity of essential oil of camphor and oil of cajuput. This he states is the first importation of these medicines into America, and Barton being anxious that the Navy should benefit from an opportunity to test their reputed virtues, particularly the oil of camphor, said to be a sovereign remedy for cholera, recommends the purchase of a few bottles. The camphor is quoted at $15.00 per bottle and the cajuput at $22.00. The Secretary's pencil memoranda on the back of Barton's letter, approves the purchase of two bottles each of these medicaments, and suggests that their contents be split up into a number of smaller bottles for distribution to the service, the larger number to go to the hospitals at Norfolk and New York. We hear nothing, however, of results of the use of these remedies. In 1827 Barton published another book entitled, "Outlines of Lectures on Materia Medica and Botany delivered at the Jefferson Medical College, Philadelphia," and in 1833, the "Prodrome of a Work to aid Teaching of the Vegetable Materia Medica by the Natural Families of Plants in the Therapeutic Institute of Philadelphia." It was the latter to which he referred in a letter written in December, 1833, asking whether the Department would purchase this volume in a number sufficient to provide one for each surgeon and surgeon's mate in the service. The action of the Secretary on this request is not recorded. In March, 1836, there comes to light a letter to the Secretary which deals with an interesting incident, namely the duel of his son, Midshipman Charles Crillon Barton, with another midshipman, while serving in the eastern Mediterranean under Commodore
Jesse Duncan Elliott. Young Barton was badly wounded and remained in Smyrna for over a year under treatment and awaiting transportation home. He is under arrest for trial for duelling, and his father prays for his release, basing his appeal for this action largely on the unusual circumstances of the duel, and Commodore Elliott's treatment of young Barton, which he alleged was inhuman. Barton's letter is a most eloquent appeal, and is moreover instructive as showing his views on duelling, "That it is an evil," he states, "admits of no disputa­tion."

On September 6, 1836, Dr. Barton declined an offer of duty as fleet surgeon of the Pacific under Commodore Ballard, alleging as reasons that he is the only support of his mother, now seventy-seven years of age, and of other members of his family, except his brother who is about to leave for Europe to be gone two years. His reluctance to accept orders to this station, may have been due also to the fact that he had made a cruise with Captain Ballard in the "Brandywine," and their relations then had not been altogether happy. He refers to this in a letter written to the Secretary of the Navy, from Pensacola, September 1, 1848, in which he seeks to justify himself for having acted independently of the commanding officer of the station in a matter which he considers was one concerned solely with the internal administration of the hospital, namely, the proper apparel of the slaves employed as attendants, who are "not only destitute of decent vestments but in absolute rags." His reference to Captain Ballard is as follows:

"My personal relations with them all (i.e. his commanding officers) with the single exception of Captain Ballard, were harmonious and kind, with an interchange of social courtesies. I have always believed and said that the medical officer who cannot get along harmoniously and in common interest for the good of the sick, must look to himself, almost always, for the fault."

On December 28, 1836, he transmits to the Secretary a copy of the "Elements of Botany," by his uncle, the late Benjamin Smith Barton, which he has re-edited and to which he has added a biography of the author. He suggests that the book be added to the list of books for naval libraries of ships.

On February 8, 1837, he writes to Andrew Jackson, then President, urging the necessity of an increase in the surgeons' list. A similar communication was previously sent to the Secretary of the Navy and was signed by a number of the senior medical officers in the service. On June 3, 1837, he acknowledges the receipt of an order to convene the Medical Examining Board (Board of Naval Surgeons) of which he is president, adding the following comment:

"Important as I think and always have thought the duty of these examining boards, in reference to the respect and efficiency of the Navy, so far as these are involved in the education, skill, and unquestionable moral character and good habits of the medical officers who may be admitted, I shall use my strenuous efforts and my best judgment to execute faithfully and conscientiously the duty you have assigned me and to realize the virtual object of the law on which that duty is predicated."

In June, 1839, Barton was called upon by the Secretary of the Navy for his ideas on recruiting and the physical standards of recruits. This was a subject in which he was keenly interested, and in his work on "Marine Hospitals" he had written at length on the defects of the system of recruiting in vogue, and suggested many improvements. In his letter to the Secretary he invites attention to the fact that existing
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regulations require a second examination of recruits by surgeons of the yards before the recruits can be receipted for by the commanding officer of the receiving vessel. The object desired is the exclusion of unfit subjects from the service. The recruiting surgeon ought to be a responsible examiner.

"If the medical recruiting service is to be revised and amended it ought to be thoroughly done, so that responsibility will be placed where the specific duty naturally places it, with the recruiting surgeon. I think the present received understanding of the nature and object of the second examination has a tendency to lead to laxity in either the recruiting surgeon or the second examiner, which must be prejudicial to the service, since a division of responsibility in any duty leads to such effect."

On August 17, 1841, he acknowledges receipt of an order for duty at the Naval Asylum, Philadelphia, as attending surgeon. On August 19, 1841, he urges reforms in the uniform dress of medical officers, and requests permission for them to wear one and two epaulettes, enclosing engravings of Army uniforms and regulations for medical officers of the Army governing this subject. He refers also to the discrepancy in pay between medical officers and those of the line, and the difference existing between them as regards promotion.

"I now presume from length of service to prefer for my colleagues more especially, as I am free to confess that I have no desire myself for any distinction or embellishing dress of any kind, but recollect when I was young how I thought and felt on this point. I ask for others what I did not myself crave. I submit a plan for uniform and epaulettes which I trust you will find in good taste."

Barton was not an advocate of the principle of selection in the promotion of officers, and he inveighs against it vehemently. In doing so he does not deny that recommendation to preferment should be based upon merit also, but he insists on combining service with this as necessary.

"I cannot in this place silently pass over, without noticing the consequences of it—the violation of that principle which is the life of naval and military service— I mean that which enforces the observance of seniority in the advancement of officers of whatever grade. The infringement of this principle demands the united efforts of the officers of the navy to discountenance and abolish it. It is not only unjust in itself, but destructive of the honourable pride and comfort of officers, and eminently subversive of that harmony, order, and subordination, which constitute the very existence of a well-regulated navy. Merit and service should never be neglected or forgotten. When appointments are founded on injustice, or made under the influence of favour they must, in the nature of things, be no less destructive of the individual happiness of officers, than inimical to the contentment of the men."

On September 1, 1841, he submits certain suggestions for the good of the service in relation to assistant surgeons, and states that lasting good must come to the medical officers from their adoption. He also recommends that the Surgeon General of the Army make similar suggestions to the Secretary of War. "If an old medical officer of the Navy thinks, nay, is confident he can benefit the Service in this way, perhaps it will not be deemed intrusive that he does so. How is the Department to get medical views?"

These suggestions may be summarized as follows:

1. Recommends that three years' sea service be required as a probationary
period preliminary to examination for promotion, instead of “at least two years,” as at present in the regulations.

2. That assistant surgeons be required by circular from the Department to perform all the minor operations directed by the surgeon, as bleeding, cupping, etc., and the dispensing and compounding of prescriptions in their own person not by delegating any of these to a “loblolly boy”, hospital attendant, dispensary steward or a man nurse. In short, not to delegate these things to anyone. They constitute the business of an assistant surgeon, and unless he executes them he positively has no business to do, becoming the fifth wheel to the coach. These officers inspire confidence in the men and officers, and he adds, “what is physic without confidence—a loaded gun without the spark to ignite.”

3. Assistants ought not to be allowed to alternate the duty of prescribing with the surgeon, and ought only to prescribe in his absence.

4. A medical and surgical journal ought to be kept by them to be presented to the Board on their second examination. The Department might furnish an outline of the kind of journal. It would discipline medical thought and induce reading.

5. When a medical officer acts as surgeon he should still not delegate his business to irresponsibles.

Thus we see how Barton paved the way to many reforms, adopted one by one in subsequent years, until now most of them have become part and parcel of Naval practice.

On June 13, 1842, he writes and refers to his letter of the 19th of August, 1841, written in Washington, relative to epaulettes and uniform for medical officers, and directs the attention of the Secretary to this former letter, adding:

“The late Board, after their labors were over, feeling a deep interest in the consequence and respectability of the Medical Corps and under the full belief that you would willingly receive any suggestions they might make, calculated in their convictions to promote this consequence and respectability, have predicated on my proposition and suggestion in reference to the subject mentioned, and requested me to forward the document.

“This I now do with an earnest hope that you will acquiesce in the reasonable request made for the Corps. There is no doubt that Medical Officers, the oldest equally with the youngest surgeons, feel acutely, and especially in ships’ service, their nonentity in the pageant part of discipline, and it would be affectation to gloss over the fact that Commanders and others representing them take no pains to prevent cause for feeling its nonentity. The epaulette and epaulettes will, if allowed, go far to abate this grievance, though nothing but a positive accredited rank will wholly reject it. I am sure of this, strange as it may seem in the abstract view. It is consistent with military show to be so. To conclude I must repeat with emphasis what I stated in my communication of the 19th of August, that what is asked for is usage in the English Navy and other foreign navies, and is usage in the United States Army.”

Section ix of his book on hospitals, 1814, dealt with the propriety of establishing the rank of navy surgeons. In this connection he states:

“It will be a matter of surprise to those who are ignorant of the fact, to learn: that at this late period of our naval establishment, the rank of a grade of officers confessedly among the most important of those who compose the navy, is not yet determined.

“The inconveniences and disadvantages of this omission are well known to the
medical and other officers of the service. I have sorely experienced them; and would venture to assert, that every surgeon in the navy has at some period or other of his service, also felt the effects of his indefinite standing as respects other officers of the Navy. . . .

"If it is ever expected that men of talents and education, who have spent much of their time in acquiring such knowledge of a difficult, a laborious, and, to most persons, a painful profession, as will enable them to serve their country with advantage, will enter and continue in the naval service: the rank of surgeons must be established. And this rank should be sufficiently respectable to give them a consequence among sea-officers, that they have not.

"For my part, I cannot but believe it essentially necessary for the welfare of the navy, that this establishment of rank be immediately made. The error is old enough, and sufficiently productive of bad consequences, to demand a quick and efficient reform. When this is the case, we shall not have surgeons who have just continued long enough in the service to be well acquainted with the nature of sea-duty, and to be of course the better prepared to benefit it by their experience, becoming disgusted with their unimportant situation, and leaving a service productive neither of emolument nor increasing respectability. I do hope therefore that this subject will claim the attention which it so eminently merits. Persuaded as I am that when naval surgeons are placed upon a more respectable footing than that they now hold, the expediency of the regulation will be manifest to all, I must strenuously urge the establishment of rank, as I have done the necessity for an augmentation of pay."

On September 2, 1842, Barton received the unsolicited honor of being selected as the Chief of the Bureau of Medicine and Surgery, a newly created office in the Navy Department. The selection was made from among the sixty surgeons then in the Navy. His position now furnished him the desired opportunity for inaugurating the many reforms he had long advocated as necessary to correct abuses and irregularities in the medical department of the Navy. As early as 1814 he had written: "The same independence which caused me to hold up my hands against the abuses of the Medical Department of the Navy, emboldens me to expose them." He consistently followed this policy while chief of bureau, and as in earlier days his "independence in expressing his sentiments on points of duty, in the Navy," made not a few enemies for him, so in this position he found himself assailed "for correcting abuses of indubitable existence." Unfortunately, upon the assumption of this office, the letters which have formed such a satisfactory source of information cease almost entirely, and the only letters reflecting his work in the Bureau relate to a period subsequent to the retirement of the Hon. A. P. Upshur, as secretary of the Navy, with whom Barton was on most friendly terms. Not so however with his successor; and Barton's correspondence with the latter indicates strained relations, and a lack of harmonious cooperation, which may have had much to do with his relinquishment of the office of chief of bureau in April, 1844. In his efforts to prevent undue waste and carelessness in the expenditure of medical supplies, particularly with respect to liquors in the medical department aboard ship, he was led to issue a "liquor circular" designed to be pasted on the inside of the lid of medical liquor cases. This circular established the contents of the case as medical liquor cases. This circular established the contents of the case as medical supplies, and required them to be restricted to the use for which they were intended, namely, the sick. There was evidence that liquor was "borrowed" from medical sup-
plies, and not always returned, and it was an abuse of this character which Barton aimed to correct. But the circular raised a storm from medical officers and others who considered their honesty impugned, and the whole subject had an airing in documents presented to Congress at the time the attempt was made to oust Barton from office. Barton’s action, however, had the full support of the Secretary and of many officers in the service, who were aware of this abuse of liquor. One of the most flagrant examples of this abuse was alleged to have taken place in the Florida squadron, and Barton’s strictures on this particular expenditure brought down on his head the bitter enmity of the squadron commander, Lieutenant McLaughlin.

A single copy of Barton’s first report as Chief of Bureau dated December 1, 1842, was discovered in Washington, and it reveals his many difficulties, financial and others, in establishing the Bureau and in effecting the reforms he looked upon as necessary and essential to efficiency. Some of the details of this report show a shocking state of public morals regarding medical expenditures, and to the correction of these Barton addressed himself unflinchingly. I will refer only to one item as illustrative of the conditions prevailing at this time. Barton found that out of the appropriation for “medicines, surgical instruments, etc.” there had been expended at one institution “for 31 blue coats, with navy buttons and a silver star ornament; 31 blue cassimere pantaloons, and 31 blue cassimere vests with navy buttons,” the sum of six hundred and sixty-five dollars and fifty-seven cents!

In this first report of a chief of bureau there is a recommendation which touched the efficiency of every medical officer in the service. It is, “That a small, compact medical and surgical library shall be authorized to be purchased for each vessel of war, in proportion to the size and capacity for the accommodation of books in the surgeon’s department, and also for hospitals and sick quarters at navy yards. . . . Extensive and costly libraries are furnished by the Government to the commanders of all ships in the Navy, often embracing a large proportion of mere general literature. Professional works, so important to medical officers should not be denied.”

Among the “Executives” letters filed in the Navy Department Library I discovered one from the Secretary of the Navy to the President, dated February 5, 1844, which refers to charges preferred against Dr. Barton by Lieutenant John T. McLaughlin in the previous August. The exact nature of the charges does not appear, except to specify “gross official misconduct,” but Barton apparently had made no reply to the Department’s request for explanation, and Lieutenant McLaughlin preferred another charge against him in October, 1843, which was also referred to Dr. Barton, but this remained unanswered like the former. I have searched in vain for some more precise information covering these incidents, but have found nothing. It will be recalled that McLaughlin was the officer in charge of the Florida squadron in which Barton had alleged there was an undue expenditure of liquor from medical department supplies, and the conditions in that squadron in this respect were brought forward by Barton in defense of his celebrated “liquor circular.” Two thousand and seventy-six dollars’ worth of liquor were procured for the sick in a period of about eight months, the number of persons in this command being in the neighborhood of six hundred. Barton had asked, what had become of the liquor, did the sick consume it all, and was it necessary? This had aroused Lieutenant McLaughlin’s ire, and it is not improbable that these charges were inspired by Barton’s comments. In the Judge Advocate General’s Office there is evidence of a Court of Inquiry on Lieutenant John T. McLaughlin dated
September 24, 1845, and thinking that a study of this record might throw some light on the allegations made by McLaughlin against Barton, or be in some way connected with them, I sought out the record, only to find it missing, and so this matter remains a mystery which I have been unable to unravel.

Dr. Barton’s letter of resignation, which I include here, closes the chapter on this period of his career. It is dated March 20, 1844, addressed to the President, and shows his state of mind regarding his labors in the office he is about to leave:

"Without the slightest knowledge of the honor intended me by an appointment by you to this Bureau, or indeed without knowing of the existence of such an office, I received, early in September, 1842, an official notification that the Senate had confirmed the nomination you had made of my name as its Chief. Doubting the popularity of the office, if strictly organized and executed throughout its parts, the appointment was not grateful to me, yet though the acceptance of it was a severe pecuniary sacrifice which I was unable to bear, as well as an interruption of the peaceful performance of my public service at my home, and with my family of females (whom I was obliged to leave unprotected), still the sense of duty overpowered these conditions. I therefore entered on the new duties assigned me with a determination expressed to the Secretary of the Navy, at the time of doing so, of retiring within a year. After nearly twelve months’ arduous labor devoted with conscience and zeal, duly appreciated by the lamented Mr. Upshur, to devise and carry out a system of regulated requisitions and responsibilities in the Medical Department, I had determined, having become extremely ill, to send in my resignation last July. I was deterred from this act at that time, and subsequently by the urgent advice against the measure of the late Secretary of State, just named, and yielding to his wish and influence as to that of a valued and tried friend who knew my cause and views for public good in the Bureau, I continued reluctantly to exercise my efforts to realize the system of retrenchment, reform and responsibility I had adopted and put in force, and he had approved, and which however consciously I believe they know to be necessary, seems to have met with difficulty, opposition and unpopularity. My earnest wish therefore has long been, and now is, to retire from the scene of unavailing efforts. This I requested to be conveyed to you by a third person in your confidence, some weeks ago. I have done my duty to you and my best for the good of the country. No man can do more. I beg therefore now to tender and I do hereby tender my resignation as Chief of the Bureau of Medicine and Surgery of the Navy Department to take effect on the first of April next, and hope while so doing you will not consider it improper but only just to myself to request that you will do me the favor by that date to have me returned on duty as a surgeon of the Navy Department of the Philadelphia station."

Barton was succeeded as chief of bureau by his former prosecutor before the court-martial in 1818, Surgeon Thomas Harris. After this we have little information regarding his activities, but it is not unlikely that the wish expressed in the final paragraph of his letter of resignation was grati-

7 On the resignation of Daniel Webster in 1843, Mr. Upshur became Secretary of State. On February 28, 1844, in company with the President and his party he visited the U.S.S. “Princeton” on the Potomac, to witness the testing of a big gun. It exploded in the experiments and Secretary Upshur, together with several others of the party, was killed.
fied and that he went to Philadelphia. In February, 1848, he is ordered to hold himself in readiness for duty at the Naval Hospital at Pensacola, Florida. He remained here only a few months, being relieved by Dr. Hulse on September 1, 1848. Two letters from this hospital were discovered, in handwriting, alas, which is no longer as legible as it was in the earlier years of his life. One bears the date of July 18, 1848, and the other of September 1, 1848, the former addressed to a Mr. Innerarity of Pensacola and the latter to the Hon. J. Y. Mason, secretary of the Navy. Both these letters discuss the question of clothing for the slaves employed in the hospital as attendants. Some of the owners of these slaves had neglected to furnish what Barton considered necessary, either in clothing or in a money equivalent with which the slaves might purchase clothing.

In 1852 he is again President of the Board of Examiners at Philadelphia, and apparently remained here until his death on February 29, 1856.

The North American and United States Gazette, Philadelphia, for March 1, 1856, contains his obituary notice, as having died on the morning of the 29th ultimo, and inviting relatives, friends and officers of the Navy, Army, and Marine Corps to attend his funeral at his late residence on Chestnut Street at 2 o’clock on the 2d instant. Under date of March 3d, the same paper prints an account of the funeral and the interment of the remains at Laurel Hill. A detachment of marines was detailed from the Navy Yard to fire over his grave. The cortège included representatives from the local military bodies, Army, Navy and Marine officers, and the Pennsylvania Cornet Band preceded the procession, performing music appropriate to the occasion. Dr. Barton’s grave is on the hillside overlooking the Schuylkill and is marked by a simple headstone, inscribed with his name, the date of his birth and the date of his death.

APPENDIX

The appearance of Dr. Barton’s work on “Marine Hospitals,” in 1814, marked an epoch in the history of medicine in our service. This book disclosed a mind capable of appreciating the vital problems of naval hygiene, their significance in relation to the health and comfort of seamen, and an ability to apply constructive improvement in sanitary conditions, which few, if any, of his contemporaries possessed. His writings give evidence of extensive study of the literature of naval and military medicine. He makes specific references to the works of Blane, Lind, Clarke, Trotter, Turnbull and Larrey. Many of his suggestions for reform or improvement were looked upon as revolutionary, and as unnecessary innovations. It is only by perusing his two books on naval medicine that we can form an adequate idea of the extent of his activities in this field.

It was in February, 1814, that Dr. Barton’s “Treatise on Marine Hospitals and the Medical Department of the Navy” appeared. The full title of the second edition of this book I have given earlier. The first edition did not contain the “Observations on Military and Flying Hospitals” which appears in the second edition. The first edition was dedicated:

To the

Flag-Officers, Captains and Surgeons in the

Navy of the United States:

A Navy, rendered glorious by the brilliancy of its achievements and which has added lustre to the nation—giving dignity and importance to its character abroad:

A Navy, to the seamen of which, by their prowess and their victories—the skilful, the valorous and the hitherto unconquered naval sons of Great Britain, are forced to yield the palm of superiority:

A Navy, thus eminently distinguished even in infancy—and which has conquered its way to publick favour and estimation:

This attempt, to promote its interests is most respectfully dedicated by the Author.
Then follow a number of recommendatory letters from prominent medical men in Philadelphia, including Dorsey, Coxe, Chapman, James, Hartshorne, Hewson and Barton. The book is divided into two parts, one dealing with "A Plan for the Internal Organization and Government of Marine Hospitals in the United States" and the other with "A Scheme for Amending and Systematizing the Medical Department of the Navy of the United States, with a few Observations on the Expediency of Altering the present Ration; and Promoting the Better Ventilation and Warming of Ships, also some Strictures on the Practice of Frequently Wet Scrubbing the Decks in the Winter Season and the impropriety of Shipping men of the United States Vessels without a Strict and Conscientious Examination by a Surgeon or Surgeon's Mate, of their Efficiency as Able-Bodied Men."

Barton explains in the preface of the first edition that the idea of the book originated in a request made to him by the Secretary of the Navy in November, 1811, to submit his ideas "respecting the proper and systematic mode of conducting institutions of this nature (i.e., Marine Hospitals), as well as any suggestions for the internal organization of the household as might seem to me consistent with economy and truth." The finished book contained considerable additions and emendations. He speaks of the many opportunities he has had during his sea duty of observing irregularities in the medical department and the disastrous consequences attending them, and in the book he endeavors to point out the means of correction. He states that if the propositions and suggestions exhibited in the book be thought worthy of adoption and if they shall be found calculated to achieve the object they have in view, "I shall deem the five years I have devoted to the naval service, not passed in vain.... I have been long enough in the Navy to have its interests much at heart, even if I did not believe (which I certainly do) that its existence is vitally important to our national prosperity and honour."

In the preface to the second edition he speaks of the fate of the book as somewhat remarkable:

"It was written by the request of a late Secretary of the Navy at a period when the youth of the Author (then but four and twenty) caused him to think of executing the task with diffidence. ... The work however was flatteringly recommended. ... Notwithstanding these unqualified testimonials in its favour ... the work lingered for a short time on publick view, and was then forgotten. An ineffectual attempt was made in March, 1814, to bring it to the notice of the naval committee of Congress ... to lay before its members a knowledge of the irregularities and abuses of the medical department, for the reform and correction of which the author had proposed what he believed a feasible scheme. It resulted however in an indirect reference ... to the Secretary of the Navy. ... It is plain from this exposition, that the author had but little reason to be satisfied with the present, or sanguine respecting the future reception of his work. Yet, though not insensible to the palsied touch which seemed to have reached it, candour compels him to acknowledge that he never despaired of its ultimate success. ... The work has finally worked its way into notice and favour. It has been patronized both by the navy and war departments ... and although but three years have elapsed ... a new edition is called for. ... For this estimation of its merit, the author takes this opportunity of rendering his thanks to those medical gentlemen, by whose passport it has at length gained admittance to the chamber of the great, after a chilling and tedious tarry at the portal, and many repulsive
frowns from one of the servants in waiting.”

An idea of the scope of this work may be gathered from a mention of the subjects treated in it. The opening section contains observations on the necessity of establishing marine (naval) hospitals in the United States. Barton refers to the law which authorized the establishment of these institutions and to plans submitted to the Secretary of the Navy by the engineer, Mr. Latrobe. In adding reasons why hospitals should be provided he remarks:

“Nothing causes seamen to discern alacrity, promptitude and faithfulness, in the performance of their severe and arduous duties . . . than a certainty of being attended humanely and ably by the superintendents of a medical department replete with every comfort and convenience for the sick and afflicted . . . While on the other hand the neglects, irregularities or inability, of the medical officers, never fail to create discontentment and disgust. In the petition . . . made by the delegates of the English fleet at Spithead, in the ever memorable mutiny . . . in the year 1797 . . . one of the principal articles referred to the neglect of the sick on board the ships . . . it was deemed prudent and expedient to issue new orders from the office of sick and wounded seamen, respecting the medical department, the strict observance of which was required of the surgeons.”

The second section presents a sketch of the marine hospitals of Europe, including the Royal Hospital for Seamen at Greenwich, the Chest at Chatham, the Royal Hospitals at Haslar, Plymouth, Deal, Yarmouth and Paignton and the Chelsea Hospital; the Forton Prison Hospital for French prisoners near Portsmouth and the medical departments at the Royal Navy Yards. He also describes the French naval hospitals at L’Orient and Cherbourg.

It will be recalled that Barton had just come from abroad in the “Essex” and the data for this section had been obtained on this cruise. He refers to having been at Cowes, Isle of Wight and at Barnpool (near Plymouth) during the time abroad, and seems to have visited St. Thomas’, St. Bartholomew’s, Guy’s and St. George’s Hospitals in London. His descriptions are full and painstaking, and it is not unlikely that they were based on personal observations, although he does not state how he obtained the information regarding these institutions. In Section III he deals with the principles which he considers should govern the administration of naval hospitals and it is here that he quotes Turnbull, an English naval surgeon, in support of the proposition that naval medical students should be instructed in anatomy, surgery, and clinical practice at the principal naval hospitals, thus constituting them “schools of naval surgery,” with the object “that young men should enter the medical sea service . . . not mere tyros in their business but . . . well versed . . . in naval medicine and sea surgery; but intimately acquainted with the nature and treatment of those diseases which are incidental to a sea-faring life.” He asserts that, “the general administration of marine hospitals should be of a military nature” and that “the salaries of the different officers should be as liberal as is consistent with a due regard to economy . . . Medical officers particularly should be allowed such ample compensation, that they would have no inducement, nor be subjected to the necessity of resorting to private practice, in order to support themselves or their families . . . All the officers of the institution should be furnished with houses or apartments within the limits of the hospitals.” The succeeding sections of Part I of the book continue with questions concerning sites for hospitals, internal arrangements of hospitals, construction of bedsteads; dress; bedding; ventilation; warming;
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diet; reception of patients; duties of officers; nurses; orderlies; rules for patients; and an account of the Pennsylvania Hospital. The second edition contains the "Observations on Military and Flying Hospitals."

Part II presents his scheme for improving the medical department of the Navy. He remarks that "Schemes proposed by an individual to the Secretary of the Navy, are not likely to be well received, unless they be seconded by officers high in rank and reputation. . . . With some of these . . . I have frequently conversed respecting the deplorable want of system that marks the medical department of the navy. It affords me the greatest satisfaction to say: that I ever found them willing to give all assistance in their power."

Commodores Decatur and Rodgers and Captain Porter are mentioned as affording him support in the past.

Barton then takes up in detail his ideas for reforming medical administration in the navy. In the light of his experience on the "United States" and "Essex" he recommends the introduction of a systematic plan for furnishing ships with medical stores, and the establishment of regulations which will make the surgeons responsible for the just expenditure of articles. He mentions the chief points that require correction or reform as being: "the introduction of the lemon acid, in abundant quantities, with free and liberal use in our ships; the present irregular mode of supplying ships and vessels of war with medicine and hospital stores; the laxity in the necessary checks to abuses that grow out of it; the faultiness of the regulations respecting the responsibility of the surgeon for the safe-keeping and proper appropriation of the articles entrusted to his charge, exclusively for the benefit of the sick; the alteration of the present ration, or at least the liquid part of it; the better ventilation and warming of our ships in the winter season; the practice of slushing down decks in winter; and lastly the impropriety and pernicious consequences to the service, of the present plan of recruiting, in which men are shipped without a strict examination by a professional man." He summarizes his ideas of naval hygiene, as follows:

"With respect to the navy, which is my object at present, the regulations that are most to be depended on, for preserving and promoting the health of seamen, are such as have in view a diet of healthful quality, the personal cleanliness of the crews and the purity and free ventilation of the ships they inhabit."

In the section dealing with "the mode of furnishing the medicine and store chests" he recommends the adoption of a supply table, a model for which he exhibits in the text, with all the items specified, and suggests regulations for governing the storage and issue of medical supplies. The necessary blank forms for recording an account of the receipt and expenditure of medicine etc., are described in full.

Section VI refers to a singular practice then existing in the Navy, namely, the payment to the surgeon of a fee, usually five dollars, for every patient cured of venereal disease, this amount being charged against the accounts of the sufferers by the purser. Barton states with reference to this plan,

"It is true there is no established article of the navy laws to authorize the payment of such sums. But immemorial custom has given this regulation the importance and effect of a law."

He looks upon this practice as reprehensible and wishes it expunged from the navy altogether. He further alleges that "Seamen sometimes, but more frequently landsmen and marines, do frequently conceal their complaints for fear of being obliged to pay the doctor for their cure. This happens till the
disease assumes a serious and not in-frequently a dangerous aspect. They will purchase for a trifle, on shore, drugs enough to ruin them . . . or apply to the loblolly-boy . . . rather than make their complaint known to the surgeon. Can anything be more destructive to the health of the men, and of course to the good of the service, than a regulation that induces such conduct and such consequences?"

Barton lays down in succeeding sections exact rules governing the duties of surgeons’ mates, and devotes a section to a discussion of the expediency of giving surgeons proper military rank. Rationing and diet for seamen is reviewed at length and Barton presents a revised ration “for promoting and preserving health and morals of the seamen in the U. S. naval service.” The section devoted to the ventilation and warming of ships emphasizes well-known principles of hygiene governing these subjects and recommends the more extensive use of windsails. He insists upon dryness of lower decks and inveighs against wet scrubbing of them in winter weather, quoting Trotter in support of his contention. The two final sections of the book deal with Barton’s ideas regarding the examination of recruits, a matter in which he seems to have been a pioneer in our service, and with plans for improving the health of the men and the comfort of the sick by locating the sick bay further aft, isolating it by partitions, ventilating it “by tubes from the gun or main deck,” and furnishing well-slung cots, etc. Other points covered are the proper location of the paint room, to avoid lead poisoning; the selection of a place for laying ships up in ordinary, free from damp and marshy exhalations; the provision of bunting sashes for lower deck ports; providing boats’ crews with breakfast before they are sent on shore for wood or water; exercising supervision over “bumboats” to exclude spirituous liquors; preventing men from drinking river water, when ships are anchored in rivers; that “dancing and musick” be promoted and encouraged among the men; and finally, he closes with the statement: “The most willing cooperation of the commanders and other officers of ships, should always be afforded the surgeon, in any of his plans for meliorating the condition of the men and promoting the convalescence and cure of the sick.” In the “Conclusion” he closes as follows: “I conceive that the country has a right to expect from every officer in the service, the result of his experience, if that can in any way lead to the interests of the nation. I therefore tender with unaffected diffidence, my mite towards the general weal.” An “Appendix” contains a list of surgeons in the navy in the year 1814. The second edition of this book was dedicated to “Daniel Parker, Esq., Adjutant and Inspector-General of the Army of the United States,” which apparently was meant to be a public acknowledgment of the patronage accorded the first edition of the book by the Army authorities, who purchased it in quantity. In fact, the Army appears to have purchased more copies than the Navy, if one can judge from the letters printed on the page succeeding the dedication in this edition.

The “Hints for Naval Officers Cruising in the West Indies” was written and published in 1830, immediately following Barton’s duty on the “Brandywine.” This small volume incorporates in book form two reports made to the Navy Department on “Ardent Spirits in the Ration of Midshipmen,” which has been referred to previously, and a “Report on the Means of Preserving the Health of Seamen Previous to a Cruise.” To these are added sections dealing with “Use of Tobacco; Clothing; Sleeping; Restriction in Water; Temperance in Drinking and Eating; Miscellaneous Observations; Immunity;” and a section dealing with the natural advantages of
Pensacola as a site for a permanent naval depot. An appendix contains several letters written while on the "Brandywine," touching mainly questions of hygiene. This work, while presenting valuable and interesting material, and necessarily reflecting a more mature experience in the service, does not possess as great a claim to commendatory notice as the preceding, and, moreover, it is written in a somewhat labored literary style.

In the National Gazette, Philadelphia, April 15, 1829, there appeared a notice of a treatise which was stated to be in course of preparation by the author of the "Hints," entitled "A History of the Navy of the United States." There is no evidence that this work ever reached the stage of completion.

ON THE DEATH OF DR. ROBERT LEVET

Condemn'd to Hope's delusive mine,
As on we toil from day to day,
Our social comforts drop away.

Well tried through many a varying year,
See Levet to the grave descend,
Officious, innocent, sincere,
Of every friendless name the friend.

Yet still he finds affection's eye,
Obscurely wise and coarsely kind;
Nor letter'd arrogance deny
Thy praise to merit unrefined.

When fainting nature call'd for aid,
And hovering death prepared the blow
His vigorous remedy display'd
The power of art without the show.

In misery's darkest cavern known,
His useful care was ever nigh,
Where hopeless Anguish pour'd his groan,
And lonely want retired to die.

No summons mock'd by chill delay,
No petty gain disdain'd by pride;
The modest wants of every day
The toil of every day supplied.

His virtues walk'd their narrow round,
Nor made a pause, nor left a void;
And sure the Eternal Master found
The single talent well employ'd.

The busy day, the peaceful night,
Unfelt, uncounted, glided by;
His frame was firm—his powers were bright,
Though now his eightieth year was nigh.

Then with no fiery, throbbing pain,
No cold gradations of decay,
Death broke at once the vital chain,
And forced his soul the nearest way.

Samuel Johnson (1709-1784).
EDITORIALS

A PHYSIOLOGICAL ROMANCE

There has recently been republished in the "Ideal Bibliothèque" the famous story by Edmond About, "L'Homme à l'Oreille Cassée," which will afford an evening's profitable amusement to the medical man who possesses a reading acquaintance with the French language. It especially deserves attention because of the almost forgotten fact that the idea upon which it is based, that animal organisms if desiccated could be preserved for some time and life restored to them by renewing their moisture, was at one time seriously advanced and maintained. At present we may class it with the theory of spontaneous generation and other exploded myths. The story relates the revivification of a French officer of Napoleon's Army, who had been nearly frozen to death, and in that condition given as a corpse to a German scientist, who proceeded to desiccate him. The supposed mummy is purchased by a young French traveller, brought to France, and there revivified by some of his countrymen. His desiccation had been produced in 1813, under the first Napoleon, his restoration was accomplished in 1859 during the reign of Napoleon III. Many amusing episodes occur and are told with all of About's wit and inimitable style; but the great interest to the medical reader lies in the extreme minutiae and the great grasp of scientific details which are shown in the recital of the physiological processes involved in the story. The only book comparable to it in the English language is the "Frankenstein" of Mary Wollstonecraft Shelley, but the crudities and lack of scientific comprehension of the latter stand out in glaring contrast with the story of the marvellous career of Colonel Fougas. It is a curious reflection how frequently a man of genius can write on a technical or scientific subject with a grasp which compels the admiration of the professional reader, even when the matter of his work is really pseudo-science and not the genuine article. Thus a Kipling can write of the machinery of a ship in a way that no real engineer could emulate, although it is a question whether Mr. Kipling has ever had any practical training in the engine room of a steamer. About writes of his hero as though he had himself spent many arduous years in the physiological laboratory. His book must have appealed strongly to the mind of the lay public at a time when everyone was speculating on the origin of life, and before Pasteur had definitely disproved the existence of any such thing as spontaneous generation.

FRANCIS R. PACKARD.

1ER CONGRES DE L'HISTOIRE DE LA MEDECINE

Le premier Congrès indépendant de l'Histoire de la Médecine et de la Pharmacie se tiendra à Anvers du 7 au 12 août 1920. Il coïncidera avec la Kermesse et les Fêtes de la 5e Olympiade.

A la séance de la Société française d'
Histoire de la Médecine du 6 décembre 1919, M. le Dʳ TRICOT-ROYER, l’un des organisateurs de ce Congrès, a donné connaissance du programme ainsi établi provisoirement:

Samedi 7 août:
A 18 heures: Séance d’installation du Congrès.
A 20 heures: Réception des Congressistes à l’Hôtel de Ville. Cette réception comporte un raudit agrémenté d’un concert de carillon.

Dimanche 8 août:
A 9 heures: Séance.
A 14 heures: Excursion sur l’Escaut avec commentaires sur les installations maritimes, par M. STRAUB, échevin de la ville d’Anvers.

Lundi 9 août:
A 9 heures: Séance.
A 17 h. 3/4: Séance.

Mardi 10 août:
A 9 heures: Séance.
A 14 heures: Conférence-promenade à travers les salles du Musée des Beaux-arts, par M. Jacques EDAPPERS, homme de lettres.
A 17 h. 3/4: Séance.

Mercredi 11 août:
A 9 heures: Séance.
A 14 heures: Conférence-promenade, par le Dʳ TRICOT-ROYER, à l’hôpital Sainte-Elisabeth fondé au début du XIIIᵉ siècle.
A 17 h. 3/4: Séance.

Jeudi 12 août:
A 9 heures: Séance.
A 14 heures: Conférence-promenade au musée Plantin, par Charles BERNARD, avocat.
A 18 heures: Banquet et clôture du Congrès.

Les séances, au nombre de neuf, comprendront des communications sur les sujets suivants:

2. L’Iconographie médicale.
3. La médecine monastique et collégiale en Belgique.
5. Le mobilier des apothicaires.
6. Epigraphie médicale; continuation de l’œuvre commencée par le regrette professeur BLANCHARD.

Les séances se termineront par des notices biographiques ou diverses contributions à l’Histoire de la Médecine; dans cet ordre d’idées, M. le Dʳ DORVEAUX étudiera Piliatre de Rozier, apothicaire; puis l’Histoire de l’eau de la reine de Hongrie. M. WICKESHEIMER parlera de la Sphygmo- graphie médiévale et des médecins belges qui ont étudié à l’Université de Strasbourg.

Les communications, tout ou partie, seront réunies en un volume qui constituera le liber memorialis du Congrès.

Des démarches seront faites pour obtenir les réductions d’usage sur les chemins de fer des réseaux français et belges.

Les Congressistes, en raison de l’emcombrement des hôtels, seront reçus, avec leur famille, chez les médecins d’Anvers participant au Congrès. Ils peuvent dès maintenant indiquer le nombre de lits et de chambres qu’ils désirent voir mettre à leur disposition, en s’adressant à M. le Dʳ TRICOT-ROYER, 106, avenue d’Italie, Anvers.

BIOGRAPHY OF SIR WILLIAM OSLER

Lady Osler has requested me to prepare a biography of her husband and I will be most grateful to anyone who chances to see this note, for any letters or personal reminiscences, or for information concerning others who may possibly supply letters.

Copies of all letters, no matter how brief, are requested, and if dates are omitted it is hoped that they may be supplied if possible. If the originals are forwarded for copy they will be promptly returned.

HARVEY CUSHING, M.D.
Peter Bent Brigham Hospital,
Boston, Mass.
BOOK REVIEWS


In our summer number of 1917 (p. 217), we called attention to the great advantage of having the separate medical histories of different countries, states, regions, counties and cities written by the individuals best qualified for the task and their publication as a matter of local pride. Dr. James J. Walsh's five volume "History of Medicine in New York," just published, is a fine example of what can be done in this regard, a monument of patient research. The little book with the above title is in the same class; its modest dimensions befit the occasion of its production, since which time, Guayaquil has loomed larger in medico-historical consideration by reason of the fact that it has become the starting point of the investigations of the endemic foci of yellow fever now in progress under General Gorgas and his associates of the Rockefeller Foundation.

The booklet was prepared for the first "Equatorial Medical Congress" (Congreso Médico Ecuatoriano), held at Guayaquil, October 9, 1915. The story begins with the arrival of Francisco Pizarro at Coaque, Peru, in December, 1530, the epidemic of verrugas which attacked his soldiers, the expedition of Alvarado in 1534, the experiences with paludism and the disease called Modorra, which may have been sleeping sickness or encephalitis lethargica; from the foundation of Guayaquil in 1537, the narrative proceeds, in straight, consecutive order, down to the year of Peruvian independence (1822). The history thus covers the colonial period; with the foundation of the Sociedad Medica de Guayas (1837), the modern period begins. The story abounds in interesting data about the local diseases, the indigenous medical plants, the use of bezoaar stones, the medicine of the Incas, the foundation, fortunes and vicissitudes of the first hospital and drug dispensary, and the major epidemics, of which smallpox and yellow fever, sometimes called mal de Siam, were most frequent. Important landmarks are the establishment by Philip II of the Protomedicate of Peru (1570), a tribunal governing all physicians, surgeons, pharmacists and herb gatherers from Panama to Virey-nato, the Royal Ordinance of February 12, 1579, forbidding any physician, surgeon, pharmacist, barber or astrologer (algebrista) to follow his avocations without previous examination, and the reopening of the hospital by Friar Gaspar Montero in 1618. The paragraphs and sentences are commendably brief, and the whole narrative is readable.

The foresight of the late William Pepper, of the University of Pennsylvania, in his efforts to establish closer relations between the medical profession in North and South America has been justified by the great progress in that direction made in recent years. Many can recall the earnestness with which he threw himself into the work of organizing the first Pan-American Medical Congress. The labours of many research workers from the United States in South American countries have opened the eyes of many of us to the splendid work which is being or has been done by the native physicians of those countries in many branches of medical work. South America boasts many splendid medical colleges and hospitals, the staffs of which are contributing largely to medical progress.