

A HISTORY OF INFANT FEEDING

BY

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PART II. SEVENTEENTH AND EIGHTEENTH CENTURIES

(RECEIVED FOR PUBLICATION FEBRUARY 5, 1953)

Seventeenth Century Writers

Jacques Guillemeau (born 1550), the French obstetrician, opens the seventeenth century with his work 'De la Nourriture et Gouvernement des Enfans' which was anonymously translated into English in 1612 under the title of 'The Nursing of Children'. This was bound with his treatise on mid-wifery and a copy of this edition, whose title page is reproduced here, is the oldest textbook in the library of St. Bartholomew's Hospital, London.

There is a well written preface eight pages long addressed to 'Ladies, wherein they are exhorted to nurse their own children themselves', in which he asserted that there was 'no difference between a woman who refuses to nurse her owne childe, and one that kills her child as soone as shee hath conceived', but without acknowledgement to Favorinus. He also related the classical story of the boy who in later years greeted his nurse with gold, but gave only silver to his mother because she had no alternative but to nourish him in her womb, whereas the nurse 'carried me three yeares in her armes, and nourished me with her owne bloude'.

Guillemeau enumerated his objections to wet nurses as follows: (1) The child might be changed and another put in his place. (2) the natural affection between mother and child declines. (3) Some bad condition or inclination may be derived from the nurse. (4) The nurse may impart some bodily imperfection, such as the 'French Pockes', to the child and thence even to the parents.

He believed that the qualities of temperament conveyed in the milk were more important than heredity, or, as he put it, 'Nurture prevails more than Nature'. Guillemeau concluded his preface with the oft-quoted story of Blanche of Castile, Queen of France, who, on learning that one of the ladies of the Court had just suckled her son, immediately thrust her finger down his throat to make him vomit the foreign milk which she believed would harm him.

Chapter I (pp. 1-8) deals with the 'nurse and what election and choice ought to be made of her'. He

probably derived the major part from Paulus Aegineta, recommending that she should be of healthy lineage, good behaviour, sober, even-tempered, happy, chaste, wise, discreet, careful, observant, understanding, conscientious and always

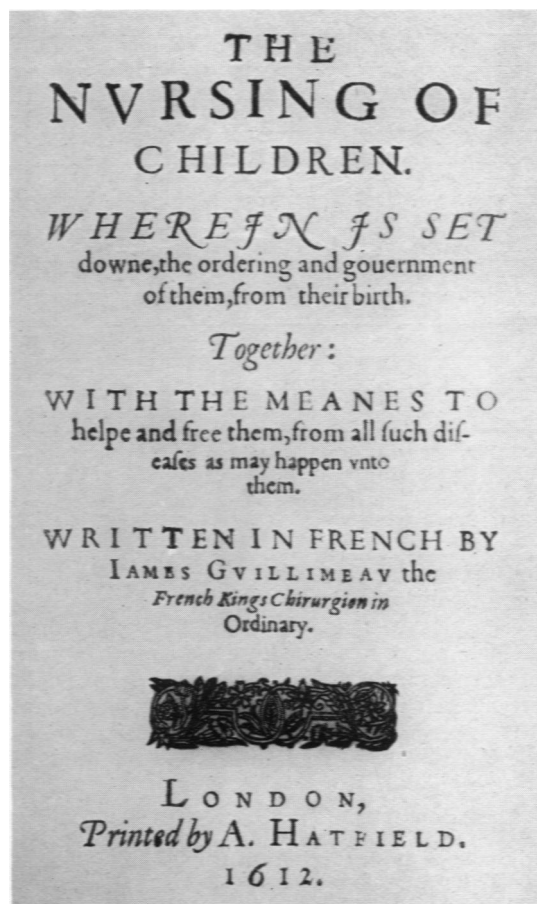


FIG. 5.—Title page of Jacques Guillemeau's work. Reproduced by kind permission of the Librarian, Medical College Library, St. Bartholomew's Hospital.

willing to give the breast. She should be physically healthy, with a pleasing countenance, 'ruddie mouth', and rosy complexion, and she should have 'veire white teeth' and broad but not pendulous breasts with good nipples; she should play with her charge and change him often. Guillemeau warned against redheads and his objection to them may either have been due to the fact that their fiery temperament would have been detrimental to the milk, or he may have shared the view of Mauriceau (1673) who objected to them because of their 'ill accents', and because their 'milke hath a soure, stinking and bad scent'!

Not only should the temperament, physique and complexion of the nurse be examined, but her milk also should be closely scrutinized. The milk should be sweet, odourless and white; blue milk indicates melancholy, yellow cholera, and red means that it is not well concocted. If it is too watery scouring and undernourishment will follow, whereas if it is too thick the infant will be liable to indigestion, curdling, obstruction and stones. The nail test was modified to the extent of using a glass instead of the fingernail. Nurses were naturally prone to conceal the fact that their milk was failing for fear of losing their position, and to guard against deceit Guillemeau recommended frequent examination of the breasts to ensure continued activity and of the baby to see if he is 'bepissed'.

Chapter II deals with the nurses' 'dyet and manner of life', in which she is warned against bad air, bad smells, salty or spiced foods, garlic, mustard, stale cheese and also roast meat if the infant's complexion is moist or phlegmatic. She should spurn all raw fruit, and drink only ale, beer, barley water or wine, rest whenever she can, keep her bowels open and 'shun all disquietness of mind'.

The next three chapters deal with mothercraft and then on page 18 chapter VI he is concerned with the actual technique of feeding. The baby is kept away from the breast for at least eight days after delivery, and even as long as one month, i.e., until the mother is 'purified of her after-purging, as Hippocrates saith'. This is a longer period than Soranus advised, and he gives no instruction as to how the infant is to be nourished in the interim, but in order to establish and maintain lactation the mother is advised to allow 'little prettie whelps' or 'her keeper' to suck her breasts, or alternatively she should 'draw them with a glass'. When suckling eventually begins the infant is allowed to feed

'as often as he crieth' but 'only a little at a time, because the stomacke at first is but weake'. . . 'It is verie hard to set downe the quantitie of milke that a child should take; But therein the Nurse must have

a respect to the age, complexion, temper, and to the desire which the child hath to sucke.'

In Chapter VII we find the earliest hint of the almost military form of discipline which subsequently steadily gained ground and reached a climax at the beginning of the present century. Guillemeau recommended that the infant be changed at 7 a.m., noon, 7 p.m. and midnight but, realizing that this was a counsel of perfection, he hastened to add that

'because there is no certain howre, either of the child's sucking, or sleeping: therefore divers, after he hath slept a good while do every time shift him; least he should foule and bepisse himself.'

Chapters IX and X deal with weaning which is begun when the upper and lower incisors have erupted with the giving of sops, bread, panada or gruel, and later (e.g. at about 15 months) minced poultry is added together with meat after the age of 2. Complete weaning was delayed until after all the teeth had erupted, and evidently quite a ceremony was customary. Spring or autumn were the seasons of choice and it was important to start during the waxing of the moon. Guillemeau describes a typical day in the weaning period as follows: (1) Change and breast feed on waking. (2) After an interval of two or three hours give panada, gruel, etc. (3) Two hours later give the second breast feed. (4) After another sleep, change him on waking, take him into the fresh air and then breast feed again. (5) After another sleep give dinner with boiled water to drink.

There is an interesting comment in the margin by the English translator who points out that the advice about boiled water refers only to France 'where they have not Ale or Beere'! If under the above regime the infant refuses to forsake the breast then the nipple should be anointed with aloes or mustard or the mother should be kept out of the infant's range of vision.

Caulfield (1932) has drawn attention to the hitherto unheeded work, the 'Countesse of Lincolnes Nurserie', which was written by Elizabeth Clinton, Dowager Countess of Lincoln, and printed in Oxford in 1662. It is short and is concerned with 'the duty of nursing, due by mothers to their own children'.

The worthy Countess had had 18 children of her own and all were 'reared' by wet nurses—that is to say most of them died in infancy. In fact only one son, Theophilus, reached majority to become the fourth Earl of Lincoln, and the book is dedicated to his wife, Bridget, who had the temerity to breast feed her first child and thereby put her mother-in-law to shame. It is greatly to the credit of the old Countess that she saw the error of her former ways

and decided to write this book by way of atonement. In it she cites Biblical examples of mothers who did their duty, e.g., Eve who fed Cain, Abel and Seth, and Sarah the wife of Abraham, whose example confirmed the Countess in her new belief that dry breasts constituted a confession of past wickedness, and that to withhold a full breast was to be 'more savage than dragons, and more cruel than ostriches to their little ones' (see Job, 39, 16). She scornfully disposed of the fashionable objections to breast feeding, e.g., that it spoilt the figure, was 'noisome to one's clothes', or interfered with gadding about, and she was in a strong position to describe the evils of wet nurses who were often slothful and deceitfully concealed their own failing supply of breast milk.

The Countess concluded her passionate appeal with the following exhortation:

'. . . be not so unnatural as to thrust away your own children; be not so hardy as to venture a tender babe to a less tender breast; be not accessory to that disorder of causing a poorer woman to banish her own infant for the entertaining of a richer woman's child, as it were, bidding her to unlove her own to love yours.'

It is indeed remarkable that one of the nobility in the early seventeenth century should have felt strongly enough to have put pen to paper and so earnestly entreated those who came after her to avoid repeating her own mistakes.

Rickets in the Seventeenth Century

There can be no doubt that the disease known as rickets has occurred since the earliest historical times for, as we have seen, Soranus briefly described the characteristically crooked limbs, and skeletons have been found which provide material support for the contention. Hans Bergmaier's painting of the Virgin and Child, c. 1500 (see Drummond, *et al.*, p. 181) leaves no doubt that at that time the rachitic child was the accepted normal, but nevertheless there is compelling evidence to show that in the early seventeenth century there was a rapid rise in the incidence of florid rickets which assumed epidemic proportions, at any rate in the southern half of England. There has been a great deal of controversy about the origin of the word 'rickets' which has usually been regarded as a derivation from the Greek. Recently, however (Mitchell, 1951) it has been suggested that a 'Dr. Ricketts of Newbery' may have given his name to the disorder about 1620. The rise in incidence at about this time accounts for the fact that John Graunt, in the index to his 'Observations upon the Bills of Mortality' (1662),

notes that 'the Rickets is a new disease, both as to name and to thing; that from fourteen dying thereof Anno 1634 it hath gradually increased to above five hundred Anno 1660'. By careful reasoning Graunt calculated that this increase was real rather than apparent for the sum of all the likely causes of death, such as 'liver-grown', which might have masked the diagnosis of rickets in previous years, never amounted to anything like that figure.

It is not easy to account for the prevalence of rickets in the seventeenth century, but according to Drummond it was due to a fall in the calcium and phosphorus intake. Kellett (1934) states that in the days of Charles and Cromwell wheat prices were disproportionately high as compared with wages so that more than half the families were short of the bare necessities of life. The wool industry was at its height and children from the age of four upwards worked long hours at home quilling, spinning and weaving. Very cold winters (the Thames froze several times during this period) also probably aggravated the conditions. In later years, as we shall see, the Industrial Revolution resulted in a shift in incidence to the towns, but in Glisson's day rural communities seemed mainly to have been affected. It must not be concluded from this, however, that social conditions in the towns were satisfactory; in fact in London they have probably never been worse, culminating as they did in the Great Fire of 1666. Overcrowding was atrocious, and the general filth in the streets, in the homes and of the Londoners themselves was indescribable. Under such circumstances artificial feeding must have been extremely hazardous though no doubt it was occasionally successful.

Daniel Whistler (1619-84) wrote the first full clinical description of rickets in an M.D. thesis at Leyden in 1645 but the credit is usually given to Francis Glisson (1597-1677) who, independently wrote his famous treatise in 1650 entitled 'De Rachitide'. This work was translated into English in 1651 by Nicholas Culpeper (1616-54) himself the author of many medical books including an unoriginal work called 'A Directory for Midwives' which was bound with 'A Tractate of the Cure of Infants' (1675). Glisson's description is very full and at times most abstruse. In Chapter XV (pp. 155-163) he discusses predisposing factors in the parents such as their 'cold or moist distemper', or bleeding or suckling during pregnancy which 'defrauds the embryo of due aliment', and in the following chapter he deals with the causes incident to children after their birth, such as damp houses and over-eating, especially highly spiced foods. Thus on page 169 he advises that:

'a plentiful Diet is altogether to be abandoned and a thin spare diet ought to be observed, for too liberal feeding doth overwhelm and choak the heat, and therefore must needs accumulate many crude and raw humors.'

He attributes the late manifestations of rickets to protection *in utero*, tight swaddling of the head and limbs during the neonatal period, and the wholesomeness of the diet in the first months:

'... for Breast milk is the most solubrious and agreeable nourishment that tender age, especially when it is sucked from the breasts; for it is a simple and uniform meat, full of nourishment, easie to concoct, and friendly and familiar to the constitution of Infants.'

After the age of 9 months children are fed with other aliments besides breast milk, and the resulting dietary errors were largely responsible for the development of rickets, which, according to Glisson, was not a contagious disease.

Although there has been considerable controversy amongst the experts (see Still's 'History of Paediatrics', p. 221) concerning Glisson's claim to priority with regard to his description of rickets, there can be no question that his brief comments on scurvy (p. 249), which is 'sometimes conjoynd with this Affect', is the earliest record of this disease in infancy. When rickets was complicated by scurvy the infant showed intolerance to purgation, was 'much offended by violent exercise', and suffered from 'divers pains running through the Joynts'; tumours of the gums were also often present. This remarkable piece of clinical observation and diagnostic differentiation has not received the merit it deserves.

Robert Pemell (?-1653) was a general practitioner in the, at that time, flourishing town of Cranbrook in Kent. In 1653 he wrote the second English paediatric textbook on the lines of Phayer's work as opposed to those written by the pens of obstetricians (e.g. Roësslin and Guillemeau) to which a section on the care and management of infants was appended. Pemell was primarily concerned with children's diseases rather than with infant feeding but nevertheless he attributed the majority of symptoms to errors of diet. For example, in chapter 4 on page 6 he wrote:

'The falling sickness cometh sometimes by consent of the inferior or lower parts especially of the stomach and bowels, when milk is corrupted in the stomach, or hath an ill quality, which doth often happen when the nurse is of an ill complexion, or from the nurses ill dyet, and to frequent drinking of wine, and so ill vapours arise from the stomach too the brain. . .'

and again in chapter 10 on page 20:

'The cause of watchings is the corruption of the milk, or too much milk, which putrieth in the stomach, from whence sharp vapours arise continually to the brain. . .'

In addition stomatitis, worms, cough, rheume, shortness of breath, the hicket, gripings and frettings of the belly and looseness and flux of the belly are all due to 'corruption of the milk', or 'abundance of milk oppressing the stomach'. On the other hand if vomiting was due to an abundance of milk it was not considered to be dangerous but was rather looked upon as a good sign indicative of a strong and healthy baby. The remedy in this case was simple: 'Let not the child suck so often, nor so long'.

Walter Harris (1647-1732) was a physician who could most certainly claim to be both original and remarkably influential, but this was all the more unfortunate because he was so misguided. His 'De Morbis Acutis Infantum' (1689) was translated into English by William Cockburn in 1693, and it passed through 18 editions as well as being translated into various foreign languages. It was included in the anonymous compilation entitled 'A Full View of all the Diseases Incident to Children' in 1742.

The secret of his success lay in the simplicity of his hypothesis that 'all the complaints of Infants spring from an Acid as their Common Source', and this original point of view was particularly appealing at a time when the old humoral pathology was beginning to fall into disrepute. In this way it was easy to account for the curdled milk, sour breath, acrid-smelling stools and excoriated buttocks, to say nothing of diarrhoea and vomiting, asthma and the King's Evil, for all of which the universal remedy was the free use of testaceous powders made from oyster shells, crab's eyes and claws, etc. The therapeutics of infancy were to be confined by this theory for more than a century, and even today the conception of 'acidity' is prevalent amongst the laity.

Harris was rightly most concerned about the fashionable practice of both high and low ladies of farming out their babies to irresponsible women in the country who soon neglected their charges. This is well illustrated by the passage in which the Rector of Hayes in Kent told Harris that

'his parish . . . was, when he first came to it, filled with suckling infants from London, and yet, in the space of one year, he buried them all except two; and that the same number of small infants being soon twice supplied, according to the usual custom with hiring nurses, from the very great and almost inexhaustible city he had committed them all to their parent earth in the very same year.'

According to Harris the maladies of infancy could be immediately attributable to their catching cold,

the too thick milk of the nurse, their over-soon eating flesh, and the mad and imprudent fondness of mothers and many nurses who often permit them to 'sip up wine and other strong and spirituous liquors, which are very heating'. Thick milk, which resulted from the nurse indulging in venery and drunkenness, tends to clog the infants' 'conduits for transmitting of chyle', and flesh meat produces sequelae which are 'almost inseparable from the overfeeding of tender infants'.

The giving of wines and spirits, and opiates in the form of Godfrey's cordial or Dalby's carminative, to young infants was a common and pernicious habit amongst the nurses of that time and was responsible for many infant deaths:

'There are some wicked Nurses, reckoned more skillful than the rest, who commonly attend lying-in women during the Month, and are not afraid to give Wine and Brandy, sweetened perhaps with Sugar, to new-born Infants with great Secrecy, as often as they can conveniently to still their crying, and procure Ease to themselves; whence dreadful Symptoms arise from hidden Causes. The same Crime is frequently committed by Nurses that suckle at their own Homes, who not only themselves guzzle down a great Quantity of strong Beer and burning Spirits, and thereby heat and spoil their own milk, but also boldly give the same to the tender infants committed to their care, and especially in those Gripes which they have occasioned by their improper Diet or Intemperance.'

The results of the gross mismanagement by the nurses were plain for all to see; compare, he says, 'the healthy sturdy race of children brought up in the cottages upon the plain Victuals, with the tender valetudinary Offspring of Great men, wallowing in luxury from the very cradle'.

Walter Harris was not a likeable man for his book is full of false modesty, but he clearly perceived the dangers and evils of the fashionable methods of rearing infants in his day, and he was not afraid to attack them in public.

John Pechey (1655-1716) is best known as the translator of Sydenham's works, but he also compiled a 'General Treatise of the Diseases of Infants and Children' from several authors in 1697, and he is therefore a fitting writer with whom to round off the seventeenth century. He was very human in his approach to the subject, and he followed up a list of the usual characteristics desirable in a good wet nurse with the addition that she must be 'merry and cheerful, and smile often to divert the child'. On page 5 he remarked that 'if watchings are troublesome, sleep must be endeavoured by Singing, Rocking and offering the Teat often', but he was careful to add that 'the Stomach must not be overburthened with milk', for 'Iniquity is connatural to

Infants, and they are more prone to Evil than to Good, we must not therefore indulge them too much'. Milk was recommended as the only food for infants for some months and then pap might be given but no solid food was to be offered before the teeth had erupted, and it should then be introduced gradually, the nurse first chewing it in her own mouth. Overfeeding, or sucking too greedily, results in frights in the sleep, looseness and vomiting, but the latter may also be due to corruption of the milk, worms, weakness of the stomach (pyloric stenosis?) or 'Nurses eating windy things'.

In concluding the seventeenth century writings on infant feeding it is encouraging to be able to record Pechey's remark in the preface of his compilation that 'Children, if they are virtuous, are great Blessings, and a publick good'.

Influence of Social Factors on Infancy in the Eighteenth Century

Infant life during, and for long before, the eighteenth century was valued by the majority of the populace no higher, and probably somewhat lower, than that of the average pet dog or cat today, in spite of Pechey's humanitarian outlook. But towards the latter half of the century definite signs of an awakening of the public conscience appeared, together with a growing interest in infant care and management and an expanding knowledge of children's diseases. Previously therapeutics had been dominated by witchcraft and the ancient humoral pathology, but, as we have seen, Walter Harris threw fresh light on the scene which, in spite of being misleading, was also stimulating. From the humanitarian aspect, in England the perseverance of two great eighteenth century philanthropists, Thomas Coram and Jonas Hanway, was largely responsible for the initiation of the outstanding improvement in the social status of infancy.

Thomas Coram (1668-1751) retired to live in Rotherhithe after spending many years at sea engaged as a shipmaster between England and her colonies which afforded him ample opportunities for performing good deeds towards slaves and other needy persons with whom he came in frequent contact. In London he was at once disturbed by the sight of dying children in the streets, and by the bodies of dead infants rotting on the dung heaps. Spurred on by this for the next 17 years, but handicapped by the lack of financial support and by the apathy and prejudice of all around him, he toiled to set up a hospital for foundlings. Success finally crowned his efforts when one was eventually opened in Lamb's Conduit Fields in 1741.

From the moment of the inception of the

Foundling Hospital it was clear that a most urgent need had been fulfilled, and by 1753 no less than 116 infants were offered for admission on a single day. Because of this overwhelming popularity the Governors decided to appeal to Parliament for funds, and in 1756 these were granted with the proviso that the charity be extended to all exposed and deserted children. In the course of the next five years, £50,000 was spent and the Hospital became a dumping ground for all unwanted infants who were sent to London from all over the country. Transport was a difficult problem and a terrible system rapidly developed whereby unscrupulous escorts were engaged to convoy the infants for a relatively small fee. The escorts usually spent the money on alcohol en route and the infants were so neglected that they frequently died before reaching London or were delivered on the doorstep in a moribund state. Of 15,000 infants admitted to the Hospital during this time, 10,000 died but this great wastage of human life was calmly attributed by many worthy citizens to 'the profuse waste and imperfect workmanship of nature', and in any case it was regarded as a suitable fate for the offspring of harlots since it prevented them from perpetuating the sins of their mothers. The nobility often found abandoned infants 'drop't' on their doorsteps but they seldom took pity on them for fear of encouraging vice or establishing a precedent, and they would rather send them to the care of the parish although this was known to mean an almost certain death sentence.

Parliament subsequently withdrew its support to the Hospital and for a while the Governors demanded a fee of £100 for each infant admitted, but later this was dropped and admissions were confined solely to illegitimate infants born to previously righteous women. Nevertheless this charity, for all the good that was done, was given a mixed reception, for example, in the satirical poem entitled *Scandalizade* by 'Porcupinious Pelagius' addressed to Coram in 1750 (quoted by Betsy Rodgers, 1949):

The Hospital Foundling came out of thy Brains,
To encourage the progress of vulgar Amours,
The breeding of Rogues and th'increasing of Whores,
While the children of honest good Husbands and
Wives
Stand exposed to Oppression and Want all their
Lives.'

Nevertheless Hogarth was proud to paint Coram and Handel gave an organ to the Hospital in appreciation of the good work that was being done (Trevelyan, 1944).

Jonas Hanway (1712-86) was particularly interested in the fate of infants left to the care of the

parish, and he made an extensive tour of England ('A Journal of Eight Days Journey', 1757) to study this pressing problem. It was the duty of the parish overseers to track down the father of an illegitimate child and extract a fine of £10 from him, ostensibly to be used to cover the expenses involved in the care of the mother and baby, but in fact pocketed by them except for the small fee which was payable to the unscrupulous nurse to whom the infant was farmed out. The parishes kept records of women willing to take these infants, and Hanway found in them references to 'excellent killing nurses'. In his 'Plea for Mercy to the Children of the Poor' he estimated that only one in 70 entrusted to the parish survived to grow up, thence to be sent out into the streets to beg (maimed if necessary), steal or become prostitutes. The average workhouse was described by Hanway as being dirty, old and crowded with sickly, aged and filthy people, and he added 'how could it be conceived that the infant could open its mouth without sucking in mortality? How many of the poor babes had gin and sleeping potions given them by their nurses I know not' (quoted by Rodgers, 1949). As a first step towards remedying this disgraceful state of affairs he forced a bill through Parliament making compulsory the registration of all poor infants under the age of 4, and this in itself produced fresh evidence of the appalling conditions prevailing at the time. In the parish of St. Clement Danes for instance (Caulfield, 1931), of 23 children committed to the care of one Mary Poole at two shillings a week, 18 died within the year. A second Bill in 1767 provided for the dissemination of all children under the age of 6 from the workhouses to registered foster parents, who were to be paid two shillings and sixpence weekly, with a reward of ten shillings if a child under the age of 9 months lived for one year, and a bonus of five shillings if it recovered from measles or whooping cough. If two children died under the care of the same nurse within a year she was to be disqualified from taking further charges.

The bills of mortality, the only yardstick with which we can measure the degree of improvement resultant upon all this activity in the social sphere to improve the lot of infants, were unfortunately grossly inaccurate, depending as they did upon the number of christenings rather than births, and upon the number of burials of those belonging to the Established Church rather than the total deaths. Furthermore the cause of death was defined and recorded by the searchers, a squad of unscrupulous women who were only too ready to accept bribes to conceal the true circumstances of the death. The deaths of infants were all lumped together under the

age of 2, which corresponded with the teething period, and also conveniently with the most popular diagnosis of the searchers. Edmonds (quoted by Caulfield, 1931), an early Victorian statistician, computed that between the years 1730 and 1749 60·2% of all infants died under the age of 2 (probably 75% died under the age of 4 in London alone at this time), whereas by 1790 to 1810 the figure had undergone the remarkable reduction to 30·3% mortality before the second birthday.

The mortality in the foundling hospitals also experienced a welcome decline. Thus the London Foundling Hospital, which originally showed a mortality of about 66·6%, had reduced this to about 52% by 1760 and to 17% by 1860. The Paris foundling hospital, which was founded as early as 1670, had a mortality of about 80% in the first year of life in 1770 (when the rate of admissions was over 5,000 yearly) but by 1820 this was reduced to approximately 50% in the first year and 74% under the age of 5. This prompted the cynical suggestion that the inscription over the door should read 'Ici on fait mourir les enfants'.

It is essential to take into account the social conditions of the times when considering the history of infant feeding, for they have a profound bearing upon the whole problem. Many infants fared badly and died simply because their lives were valued so cheaply that in many instances no food at all was given, the unwanted infant thus swelling the ranks of stillbirths, the overlaid, and those dying from 'want of breast milk'. Those who survived often did so on a diet which Sir William Fordyce so well described in 1773:

'... they are fed on meat before they have got their teeth, and what is, if possible, still worse, on biscuits not fermented, or buttered rolls, or tough muffins floated in oiled butter, or calves-feet jellies or strong broths yet more calculated to load all their powers of digestion.'

(From 'A New Enquiry into the Causes, Symptoms and Cure of Putrid and Inflammatory Fevers' by Fordyce, quoted by Drummond, 1940.)

Accurate statistics would be required to assess the relative importance of bad social conditions and bad feeding methods in causing the astonishingly high infant morbidity and mortality, but obviously they will never be available for this period. We can learn a good deal, however, from Sir Hans Sloane's letter to the Vice-President of the Foundling Hospital in which he wrote that the mortality of hand-fed infants was 53·9% as compared with 19·2% for those suckled at the breast. The French figures by M. Villesmé (quoted by Charles West, 1852) are also very instructive since they refer to the mortality of

enfants trouvés treated at three separate foundling hospitals with differing feeding regimes: At Lyons foundlings were boarded out to wet nurses within one week of reception; the mortality in the first year of life was 33·7%. In Paris foundlings were suckled by wet nurses in the hospice; the mortality was 50·3%. At Rheims foundlings were boarded out early but were mainly hand reared: the mortality was 63·9%.

There are no comparable mortality figures for normal babies born in wedlock apart from contemporary statistics from the lying-in hospitals (Underwood, 1819). In the British Lying-in Hospital, where mothers and babies stayed for three to four weeks, between the years 1783 and 1791 112 out of 5,233 infants died, i.e., a neonatal mortality of just over 2%. In Dublin, where they stayed for only two weeks as a rule, the mortality for that period was about 4%. These figures, if reliable, are remarkably good and they are very probably dependent upon the high incidence of breast feeding, without the addition of other foods, in these early weeks. For older infants the differentiation between hand and breast feeding became progressively meaningless in the eighteenth century since it was probably universally customary to give pap and panada in addition to the breast. De Claubry in 1783 (quoted by Drake, 1931) described pap as 'the most dangerous of all foods for infants' in that 'it has caused to perish a great number, or has rendered them infirm and diseased all their lives'. The terms pap and panada were sometimes used synonymously but more often the latter referred to cereals cooked in broth. Great quantities were often stuffed down the infants' throats having been previously chewed by the nurse to facilitate digestion, who then gave them the breast 'to better dilute the pap' (Ettmuller, 1703). Drake shows a picture of a metal pap spoon dated about 1800 with a narrow slit at one end which was cleansed by inserting a blade of a knife, and a hollow handle at the other end down which the nurse blew to hasten the delivery of the pap.

We may therefore conclude that the social conditions prevailing at the time and the popular methods of infant feeding were both responsible for the high rate of infant mortality in the eighteenth century. Even when the social circumstances were first class, bad feeding methods would take their toll, witness the experience of the Countess of Lincoln at the end of the sixteenth century and of Queen Anne (all of whose 18 children died in infancy) at the beginning of the eighteenth century; conversely, in the most humble of homes no doubt many poor mothers successfully reared their offspring on the breast. Between these two extremes

all grades of relative importance between these two major factors determining the infant mortality rate would be found.

The Employment of Wet Nurses

The eighteenth century is a convenient stage to refer in more detail to the employment of wet nurses for it was during this period that they enjoyed peak popularity in England amongst the aristocracy. Towards the end of the century we find evidence of their declining popularity in the writings of George Armstrong (1783) who definitely preferred dry- to wet-nursing, but it is important to remember that Armstrong worked mainly amongst the poor who were unable to afford the luxury of a wet nurse. The majority of eighteenth century writers, e.g. Richard Conyers (1729), deplored the use of pap for the newborn and preferred wet nursing to hand rearing mainly on the grounds that cow's milk promotes acidity. The fact that relatively few families could afford them did not concern those doctors whose patients were largely recruited from the upper social classes.

We have already seen that in Biblical times wet nurses were well organized on a financial basis, and since the time of Soranus the desirable characteristics of a good wet nurse have been slavishly copied from book to book up to 100 years ago when they were still to be found in Charles West's lectures to the students. Perhaps, however, they have never been more pleasingly recounted than by S. de Saint-Marthe who wrote the 'Paedotrophia' in Latin in 1584, which was subsequently translated into English by H. W. Tytler in 1797:

'Chuse one of middle age, nor old nor young,
Nor plump nor slim her make, but firm and strong,
Upon her cheek, let health refulgent glow
In vivid colours, that good-humour shew;
Long be her arms, and broad her ample chest;
Her neck be finely turn'd, and full her breast:
Let the twin hills be white as mountain snow,
Their swelling veins with circling juices flow;
Each in a well projecting nipple end,
And milk, in copious streams, from these descend;
{ This the delighted babe will instant chuse,
And he best knows what quantity to use.
Remember too, the whitest milk you meet,
Of grateful flavour, pleasing taste, and sweet,
Is always best; and if it strongly scent
The air, some latent ill the vessels vent.
Avoid what, on your nail, too ropy proves,
Adheres too fast, or thence too swiftly moves.'

The nail test has survived, unchanged, for over 1,200 years! The above quotation is taken from the second book of Tytler's original translation, and it is interesting to compare this with the version on page 234 of Struve's 'Treatise' (1801) in which the two lines bracketed above were omitted. Like many

historical and contemporary writers on infant feeding, Struve evidently had no confidence in the infant's ability to regulate the intake of milk in accordance with his requirements.

Didactic poems, which were popular at this time (e.g. Downman, 1788), usually preceded a description of the perfect wet nurse by a vehement exhortation to mothers to feed their own children, and Claude Quillet's 'Callipaedia', written in Latin in 1655 and translated into English in 1712, by Nicholas Rowe, the Poet Laureate, was no exception. The following extract is taken from Book IV, page 16:

'Say, therefore are not those absurdly vain,
Who cause their Children's fate and then complain;
Who with a hopeful beauteous Offspring blest
Forget themselves, and hire unwholsom Breasts;
And to some common Wretch commit the Care,
Of infant Celia or the future Heir:
Besides Diseases and unnumbered Ills
That latent spread and flow in Milky Rills
That from bad Teats and putrid Channels pass
And taint the Blood and mingle with the Mass,
The noxious Food conveys a greater Curse
And gives the meaner Passions of the Nurse.
Th'unthinking Babe sucks in the deadly Bane
And new-form'd Lusts the native Virtue stain;
Who draws the flaggy Breasts of Wanton Dames
Shall base Desires imbibe, and burn with guilty
Flames.'

In the seventeenth and eighteenth centuries the ladies of quality did not breast feed their own infants because it was unfashionable, because they feared it might injure their health and ruin their figures, and above all because it would interfere with the social round of returning 'favours', playing cards and visiting the theatre. Neither lyrical appeals such as appeared in the 'Callipaedia', nor 'pious persuasives' such as Henry Newcome's 'The Compleat Mother' (1695) in which 46 of the total 112 pages are filled with Biblical quotations supporting his theme, were able to make much impression upon the dictates of fashion and the caprices of the aristocracy. Fathers encouraged this behaviour and on the pretext of sending them out of town into the country air, the infants were farmed out to nurses with the disastrous results recorded by Harris. Some fathers employed nurses with the deliberate intention of doing away with the infant and one, in 1740, angered by the cries of a new addition to the family, threatened to 'hire a nurse to overlay him'.

Wet nurses were often employed in the home, and on the birth of the Prince of Wales (later George IV) in 1762 it was officially announced: 'Wet-nurse, Mrs. Scott, Dry nurse, Mrs. Chapman, Rockers, Jane Simpson and Catherine Johnson' (Caulfield, 1931). Indeed the lot of wet nurses.

became so enviable that many poor young girls contrived to become pregnant, and then overlaid or 'drop't' the infant before seeking employment. Doctors and accoucheurs kept a 'nurse-book' and the standard rate of pay was ten to twelve shillings weekly with all found. Thus the high rate of infant mortality was in part the source, and in part the effect, of the ample supply of wet nurses. This sad state of affairs stimulated Archbishop Tillotson, Addison, Swift and many others to exhort ladies of fashion to breast feed for the mutual benefit of mother and child.

In France, characteristically, wet nurses were highly organized from the twelfth century onwards (Drake, 1935) and by 1715 four employment bureaux existed in Paris for the registration of nurses who were required to give their name, age and details of the age and condition of their own baby. *Recommandaresses* were in charge, and for a time there were many abuses, but a new law in 1762 forbade nurses from taking charge of an infant

unless her own was older than 9 months. The new legislation also provided for regular medical inspection of the nurses, and the compulsory provision of a separate cradle to prevent overlaying the nursling. Fees were fixed by law and the nurses were protected by the threat of imprisonment for those who failed to pay them (though this was repealed after the Revolution in 1792).

It seems not unlikely that had such a realistic approach to the problem been adopted in England, the lot of the average infant in the eighteenth century would have been considerably improved. The whole problem of the official recognition of wet nurses in France and in England has a close parallel in the different methods of treatment of prostitutes in the two countries. Whereas in France both problems have been recognized and at least partly solved, in Britain, and particularly in Scotland, there has always been a tendency to pretend that they do not exist.

(References will be appended to Part V.)

PROFESSOR LUIGI SPOLVERINI

Professor Luigi Spolverini, President of the Italian Society of Paediatrics, will be 80 years old on August 29, 1953. His many contributions to paediatric literature—some 150 in number, spread over 53 years—have covered a wide range of subjects and have brought him renown far beyond the boundaries of his own land. His interests have ranged from the composition of breast milk to

thyroid dysfunction, from rheumatic heart disease to the reduction of infant mortality. He is perhaps most widely known for his part in the organization of the campaign against poliomyelitis. Many countries have honoured him, and in 1934 he was elected an honorary member of the Section of Paediatrics of the Royal Society of Medicine.

The Editors of the *Archives of Disease in Childhood* are sure that its readers will join them in offering Professor Spolverini their best wishes on his eightieth birthday.