

TOMASZ SIODA

ORCID: 0000-0002-2771-4172

VIRGINIA THORLEY

ORCID: 0000-0002-1305-5612

# 'Unfortunate creatures': The hazards of syphilis in wet-nursing

## Abstract

While the selection criteria for wet-nurses had little changed across two millennia, other aspects of their occupation were far from homogenous, changing under the diverse influences of culture, current threats to the health of wet-nurses and the babies they fed, contemporaneous medical knowledge and healthcare. Fears of the transmission of the prevailing infectious diseases of the times led to medical involvement at all levels, from selection and inspection of applicants for wet-nurse positions to treatment of illnesses that arose in the child. The article discusses the implications of syphilis, the most serious disease transmissible through wet-nursing before the discovery of antibiotics, and the preventive measures and treatment used by the physicians across five centuries, according to the knowledge of the time. The period covered extends into the early-twentieth century.

**Keywords:** breastfeeding, history of medicine, occupational diseases, syphilis, wet-nurse

In the first handbook of occupational diseases, Bernardino Ramazzini (1633–1714) devoted an entire chapter to diseases typical of breastfeeding women – both mothers and wet-nurses.<sup>1</sup> He identified these diseases as: “(...) gradual wasting, hysterics, pustules and scabies, headache, vertigo, respiratory troubles, and weak eyesight, and they are liable to many other disorders, especially in the breasts when

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<sup>1</sup> B. Ramazzini, *Caput XX. De Nutricum Morbis*, [in:] *De Morbis Artificum Diatriba: Accedunt Lucae Antonii Portii [...]*, Wilhelm van de Water, Utrecht 1703, pp. 100–122.

the milk is too abundant, when it curdles in the breasts, when these become inflamed or suffer from an abscess or cracks in the nipples. It is easy to understand how atrophy or wasting may result from long-continued suckling (...).<sup>2</sup>

Ramazzini and Philibert Patissier, the author of a later textbook of occupational diseases (1822) who elaborated on Ramazzini's textbook,<sup>3</sup> did not mention syphilis as an occupational disease of wet-nurses, although this was undoubtedly the most serious professional threat to wet-nurses in these authors' times. Charles Turner Thackrah, another well-known author in the field of occupational medicine, completely ignored the nurses' occupational risks in his book,<sup>4</sup> as did John Thomas Arlidge, the scrupulous author of the next important position in this field.<sup>5</sup> The influential Donald Hunter also did not discuss these occupational risks in the first editions of his fundamental *The Diseases of Occupations* (1964).<sup>6</sup> By describing the impact of syphilitic infection on mercenary breastfeeding (that is, for payment), it should be noted also that in the case of infectious diseases, occupational hazards did not concern the wet-nurses alone, but so often they extended to the wet-nurse's family and the next infants she wet-nursed.

## The role of wet-nurses in nourishing syphilitic infants and in propagation of syphilis

Until the beginning of the twentieth century, breastfeeding was considered necessary for successful treatment of a newborn or infant with symptoms of syphilis,<sup>7</sup> as was demonstrated statistically in the

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<sup>2</sup> B. Ramazzini, *Diseases of Workers*, W.C. Wright (rev. and trans. from the Latin text *De Morbis Artificum*, 2nd edn, 1713), Hafner, New York 1964, p. 167.

<sup>3</sup> Ph. Patissier, *Traité des maladies des artisans : et de celles qui résultent des diverses professions, d'après Ramazzini [...] [Treatise on the Diseases of Craftsmen: and of those resulting from the various professions, after Ramazzini]*, Baillière, Paris 1822, pp. 179–190.

<sup>4</sup> Ch.T. Thackrah, *The effects of arts, trades, and professions, and of civic states and habits of living, on health and longevity: with suggestions for the removal of many of the agents...*, Longman & Co., London 1832.

<sup>5</sup> J.T. Arlidge, *The Hygiene, Diseases and Mortality of Occupations*, Percival, London 1892.

<sup>6</sup> D. Hunter, *The Diseases of Occupations*, The English Universities Press, London 1964, pp. 1–144.

<sup>7</sup> F. Malinowski, *Syphilis dziedziczny wczesny (Lues hereditaria recens)* [Early hereditary syphilis], "Gazeta Lekarska" 1904, no. 24(32), pp. 781–794.

foundling houses in St. Petersburg and Moscow.<sup>8</sup> In the Petersburg house in 1868 syphilitic infants were breastfed by wet-nurses and mortality was c. 62%, but in 1875, when syphilitic infants were fed artificially, mortality exceeded 93%. In the Moscow house, syphilitic foundlings were fed artificially until 1863, and the mortality rate was c. 90%. After 1864 syphilitic infants were breastfed by wet-nurses, and the mortality rate decreased to 60%. In 1871 artificial feeding of syphilitic infants was reintroduced for some ill infants, and 54% of infants in the group of 107 infants fed by wet-nurses died, while 90% of infants from the group of 88 artificially fed infants died.

As the necessity of breastfeeding for syphilitic infants was taken for granted, the nineteenth-century European and American authors of books and articles on venereal diseases generally did not expatiate upon how to feed a sick infant, and only discussed (if at all) who should breastfeed – the mother or a wet-nurse. Generally, the diagnosis of syphilis in the mother or the child was an absolute contraindication for the mother to breastfeed infants other than her own.<sup>9</sup> An asymptomatic mother of a newborn infant with syphilis was commonly advised to breastfeed, because no well-documented cases of infection of the mother by her sick child had been observed (an observation that led in the nineteenth century to the formulation of the so-called Colles' law<sup>10</sup>) and such a solution, though often unpopular in the higher spheres of society, was the most reasonable. Subsequently, it was strongly recommended that infants with congenital syphilis be breastfed by their mothers or by wet-nurses who already had syphilis.<sup>11</sup>

Yet some doctors even in the second half of the nineteenth century forbade the mother to breastfeed her infant with congenital syphilis,<sup>12</sup>

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<sup>8</sup> E. Klink, *Sprawozdanie z wycieczki lekarskiej do Petersburga* [Report on the medical trip to St. Petersburg], "Pamiętnik Towarzystwa Lekarskiego Warszawskiego" 1879, no. 75, pp. 411–457.

<sup>9</sup> This was restated in legislation from various countries recorded by the World Health Organization as late as 1956: World Health Organization, *Venereal disease: Summary of existing legislation*, "International Digest of Health Legislation" 1956, no. 7(2), pp. 157–198.

<sup>10</sup> A. Colles, *Practical observations on the venereal diseases*, London 1837, [in:] R. McDonnell (ed.), *The works of Abraham Colles*, The New Sydenham Society, London 1881, pp. 271–272, 287; J. Hutchinson, [in:] *ibidem*, p. 289.

<sup>11</sup> R. Ledermann, *Syphilis in relation to marriage*, [in:] H. Senator, S. Kaminer (eds.), *Health and Disease in Relation to Marriage and the Married State*, ch. XV, Rebman Co, New York 1905, p. 587.

<sup>12</sup> R.A. Allen, *The Diagnosis and Treatment of Venereal Diseases*, Bailliere, London 1855, p. 77; G.F. Lydston, *Lectures on syphilis*, Wood, Chicago 1885, pp. 174–176.

especially when she herself had no symptoms or signs of syphilis, and syphilis had been diagnosed in the infant's father. The rationale of such a recommendation at the time was the controversial opinion that transmission of syphilis to the child came directly from the seed of the father. The consequence of this conviction was the desire to protect the 'healthy' mother against infection by a sick infant while breastfeeding. Both when prohibiting a syphilitic child to be breastfed by the mother and in the case when the mother, for whatever reason, could not breastfeed, the main question was what should replace maternal breastfeeding. The usual options of artificial feeding or hiring a wet-nurse with syphilis could prove dangerous, whether she were promiscuous or contacted the disease innocently from her husband or through wet-nursing an infected child.<sup>13</sup> Apart from artificial feeding with animal milk and cereal-based recipes, other solutions were engaging a wet-nurse who had recuperated from syphilis or a healthy wet-nurse. In the latter case this meant either the woman was aware of the situation and ready to take the risks to her health for a suitable remuneration, or was kept in the dark as to the cause of the infant's illness.

Various authors emphasized that the treatment of a syphilitic infant was more effective while the child was breastfed than after weaning.<sup>14</sup> This necessitated close physical contact of the infected child with the mother or wet-nurse. Depending on the source and route of infection, and the presence and stage of infection in the child or the nurse, various situations arose with disparate epidemiological risks of transmitting the infection during breastfeeding. Each of these situations, sooner or later, required medical intervention in the form of preventive and therapeutic procedures for the welfare of the suckling and/or the nurse. The risk of further transmission of infection, and efforts to preserve the life of a sick child, enforced compromise involving the choice of 'lesser evil', often at the expense of the wet-nurse's health,

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<sup>13</sup> J. Wendt, *Wykład systematyczny choroby weneryczney we wszelkich jéy kierunkach i postaciach* [Systematic lecture on the venereal disease in every its directions and forms], 3rd ed., Warszawa 1833, p. 308.

<sup>14</sup> N. Rosén von Rosenstein, *The Diseases of Children, and Their Remedies*, A. Sparrman (trans.), T. Cadell, London 1776, p. 338; T.T. Weichardt, *Rady dla matek względem zapobieżenia różnym słabościom i chorobom, którym dzieci od urodzenia swego podlegać mogą* [Advice for mothers on preventing various infirmities and diseases which children since birth might bear], Gröll, Warszawa 1782, p. 390; L. Perzyna, *Przydatek o lubieżney chorobie* [Annex on the Licentious Disease], together with *Lekarz dla włościan* [A Physician for Peasants], Kalisz 1793, p. 23; J. Wendt, op.cit. (note 13), p. 304.

as will be described below. The medical practices involved in such a compromise were not conducive to the formulation of well-reasoned and clear recommendations, especially when answers to the basic questions regarding the transmission of syphilis were controversial among medical doctors until the causative organism, *Treponema pallidum*, was identified in 1905.

Breastfeeding could also be a route of syphilitic infection for a healthy baby when the wet-nurse herself suffered from syphilis. This threat was so obvious and serious that aware families sought medical advice to reduce the risk of employing a sick wet-nurse (see page 00 [20-21]). On the other hand, awareness of the risk of a healthy wet-nurse becoming infected with syphilis by suckling a sick child was significantly lower among wet-nurses themselves, especially in rural areas with a stable social structure and lack of experience of the disease.

## The history of opinions on syphilis transmission during breastfeeding

The earliest account that the authors have been able to find of disease transmission from a suckling to his wet-nurse was written by a layman, Donato Velluti (1313–1373) from Florence, in his domestic diary.<sup>15</sup> The case he described concerned his first son Lamberto, who was born in 1341 as a beautiful, healthy infant but who in his third week of life developed a generalized rash and became emaciated. Soon afterwards his wet-nurse developed a similar sign of an itchy rash. When her condition improved after she received the spa treatment but his did not, a new wet-nurse was employed, who also fell ill with the same disease, as did other people who shared a bed with the child. Finally Lamberto's condition improved and he functioned well until beset by a strange mortal disease at the age of 21 years. Such a detailed description of a child's health problems was quite unusual in the fourteenth century, but its medical vagueness prevents a definitive retrospective diagnosis. Yet Alfonso Corradi (1833–1892), an Italian pathologist competent in the history of syphilis, retrospectively recognized syphilis as the primary disease of Lamberto and the

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<sup>15</sup> D. Velluti et al., *La cronica domestica di Messer Donato Velluti, scritta fra il 1367 e il 1370, con le addizioni di Paolo Velluti, scritte fra il 1555 e il 1560 dai manoscritte originali...* [The Home Diary by Mr Donato Velluti, written from 1367 till 1370, with the annex by Paolo Velluti, written from 1555 till 1560, from original manuscripts], G.C. Sansoni, Firenze 1914, pp. 310–313.

cause of infection in two wet-nurses.<sup>16</sup> This diagnosis has been met with skepticism,<sup>17</sup> which is also shared by the authors of this article. Nevertheless, the case presented remains the first factual description of an infection transmitted from a nursling to his wet-nurse, be it only scabies.

References to bidirectional transmission of syphilis between wet-nurses and their charges can be found in the works of many fifteenth- and sixteenth-century scholars including Gaspar Torella,<sup>18</sup> Jacopo Cattaneo,<sup>19</sup> William Clowes,<sup>20</sup> Philippus von Hohenheim,<sup>21</sup> Jan Benedykt Solfa,<sup>22</sup> Antonio Brassavola Musa,<sup>23</sup> Julien Le Paulmier,<sup>24</sup> Luis Guyon Dolois,<sup>25</sup> Jean Fernel,<sup>26</sup> and Ercole Sassonia.<sup>27</sup> These early authors did not elaborate on details of the transmission beyond simple acknowledgement of its existence.

In 1554, Amatus Lusitanus (1511–1568) presented probably the first account of a specific infection conveyed to the wet-nurse by a child fathered by a syphilitic man.<sup>28</sup> The infected nurse transmitted the infection to her husband and her child. Ambroise Paré (1510–1590) clearly

<sup>16</sup> Ibidem, p. 310.

<sup>17</sup> C. Quist, *Die neueren urkundlichen Nachrichten über Auftreten der Syphilis im 15. Jahrhundert* [*The more recent records on the occurrence of syphilis in the 15th century*], "Archiv für pathologische Anatomie und Physiologie und für klinische Medizin" 1875, no. 64, pp. 307–327; J.K. Proksch, *Die Geschichte der venerischen Krankheiten: Eine Studie. Vol. 1. Alterthum und Mittelalter* [*The History of Venereal Diseases: A Study. Vol. 1. Antiquity and the Middle Ages*], Hanstein, Bonn 1895, p. 314.

<sup>18</sup> G. Torella, *De dolore in Pudendagra Dialogus*, [in:] *Aphrodisiacus, sive de lue venerea. Opus... ab... Aloysio Luisino*, Langerak & Verbeek, Leiden 1728, pp. 504, 543.

<sup>19</sup> J. Cattaneo Lagomarsini, *Opus de morbo gallico*, Bernardinus Silva, Torino 1532, f. 4v.

<sup>20</sup> W. Clowes, *A briefe and necessarie treatise touching the cure of the disease called Morbus Gallicus [...]*, Thomas Cadman, London 1585, f. 3r.

<sup>21</sup> Ph. von Hohenheim (Paracelsus), *Vom Ursprung und Herkommen der Franzosen* (1536), [in:] W.-E. Peukert (ed.), *Paracelsus, Works in 5 Volumes*, vol. II, *Medizinische Schriften*, Schwabe & Co., Basel 1965, p. 367.

<sup>22</sup> J. Benedictus, *Libellus de Morbo Gallico*, Cracovia 1550, cap. 2, n.p.

<sup>23</sup> A. Musa Brassavola, *De morbo Gallico liber* (1st edn, 1551), [in:] A. Lusinius, *De morbo gallico omnia*, vol. 1, Giordano Ziletti, Venezia 1566, pp. 564–610.

<sup>24</sup> J. Le Paulmier, *De Morbis Contagiosis libri septem*, Du-Val, Paris 1578, p. 23.

<sup>25</sup> L. Guyon Dolois, *Le Cours de Médecine en françois, contenant le Miroir de beauté et sante corporelle*, vol. II, 6th edn, Gayet & Faeton, Lyon 1673, p. 17.

<sup>26</sup> J. Fernel, *De Lue Venerea Dialogus*, [in:] *Aphrodisiacus, sive de lue venerea. Opus... ab... Aloysio Luisino*, Langerak & Verbeek, Leiden 1728, p. 609.

<sup>27</sup> E. Sassonia, *Pantheum medicinae selectum, sive Medicinae practicae templum*, Officina Paltheniana, Frankfurt 1603 [?], p. 748.

<sup>28</sup> Amatus Lusitanus, *Amati Lusitani... curationum medicinalium centuriæ duæ, prima & secunda, multiplici variâque rerum cognitione resertæ*, Franciscus Bartolomeus, Paris 1554, p. 149.

stated in his *Œuvres* that newborns with congenital syphilis transmit the infection to their wet-nurses, and who in turn transmit the infection to other infants. He illustrated his statements concerning transmission of infection in the direction from a diseased wet-nurse to the infant with a detailed history of a hired wet-nurse with syphilis who infected the whole family. The faulty nurse was soundly lashed in the prison although, according to Paré, she should have been whipped through all the streets of the Citty of Paris.<sup>29</sup> Also William Clowes, a London barber-surgeon, saw 'lewd, wicked and filthy nurses' as the source of infection for the nurslings, who in turn infected 'good and honest nurses'.<sup>30</sup>

Similar opinions on the transmission of syphilis between wet-nurses and the infants they suckled and their families prevailed among seventeenth-century medical authorities (Carlo Musitano,<sup>31</sup> Jacques Guillemeau,<sup>32</sup> Nicolas de Blégnny,<sup>33</sup> Thomas Sydenham,<sup>34</sup> Richard Wiseman<sup>35</sup>). A local scandal in Boston in 1646 resulted from an epidemic of syphilis from suckling the breast or by the sexual route.<sup>36</sup> The first case involved a recently confined woman whose sore, probably engorged, breast was relieved by the mouths of neighbours and their children; her child was, meantime, suckled by other women. The investigation by the magistrate did not determine the primary source of infection.

Many eighteenth-century authors were adamant that wet-nurses could acquire syphilis from a syphilitic infant. John Bacot in 1829 cited his respected medical predecessors from the previous century: Foot, Astruc, Boerhaave, Mahon, Swediaur, Levret, Roux.<sup>37</sup> Jacopo Vercellone (Pedemontanus) described the situation he met with in

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<sup>29</sup> A. Paré, *The workes of that famous chirurgion Ambrose Parey*, T. Johnson (trans.), Cotes and Dugard, London 1649, p. 466.

<sup>30</sup> W. Clowes, op.cit. (note 20).

<sup>31</sup> C. Musitano, *Tomo quarto de lues venerea*, Alonso Burguete, Pamplona 1748, p. 44.

<sup>32</sup> J. Guillemeau, *The nursing of children, with Child-birth; or, The happy delivery of women*, Joyce Norton, London 1635, n.p. [*The Preface to Ladies*].

<sup>33</sup> N. de Blégnny, *L'Art de guérir les maladies vénériennes*, Jean Dhoury, Paris 1677, pp. 68–69.

<sup>34</sup> T. Sydenham, *Epistola Resp. II [ad] Henrico Paman*, [in:] *Thomae Sydenham Opuscula quotquot hactenus separatim prodiere omnia*, Henricus Wetstenium, Amsterdam 1683, p. 387.

<sup>35</sup> R. Wiseman, VIII. 'Of the Lues Venerea', [in:] *Eight Chirurgical Treatises on these Following Heads: [...]*, 5th edn, vol. II, B. Tooke, London 1719, p. 346.

<sup>36</sup> J. Winthrop, *The History of New England from 1630 to 1649*, vol. 2, Phelps and Farnham, Boston 1826, pp. 257–258.

<sup>37</sup> J. Bacot, *A Treatise on Syphilis*, Longman, etc., London 1829, p. 252.

1702 when two abandoned infants with syphilis had infected a substantial number of nurses and infants.<sup>38</sup> The authors of eighteenth-century health guides did not doubt the possibility of infection of a healthy wet-nurse by a sick infant or a healthy infant by a sick wet-nurse.<sup>39</sup> Yet they noted that not all wet-nurses feeding sick infants became infected with syphilis. The observation had already been made in the eighteenth century that nipple damage in the form of erosions and cracks, common especially in the first days of breastfeeding, was necessary for the transmission of infection from a breast-fed infant with syphilitic lesions in the oral cavity.<sup>40</sup> This was confirmed later<sup>41</sup> and upheld in recent years.<sup>42</sup>

Another point of entry of syphilitic infection in a wet-nurse was a scratch on her breast by the infected baby's fingernails.<sup>43</sup> However, doubts about the possibility of infecting wet-nurses during breastfeeding were raised even as late as the mid-nineteenth century.<sup>44</sup> Among all these opinions, a striking report was presented by Carl Günzburg from a large foundling house in Moscow.<sup>45</sup> In the years 1868–1870,

<sup>38</sup> J. Vercelloni, *Traité des maladies qui arrivent aux parties génitales des deux sexes ; et particulièrement de la maladie venerienne* [A treatise on the diseases which arrive at the genitals of the two sexes; and especially venereal disease], Jacques Clouzier, Paris 1730, pp. 369–371.

<sup>39</sup> T.T. Weichardt, op.cit. (note 14), pp. 390–396; *Compendium medicum auctum*, Częstochowa 1789, p. 376.

<sup>40</sup> N.D. Falck, *A Treatise on the Venereal Diseases*, B. Law, London 1774, p. 239; W. Nisbet, *First Lines of the Theory and Practice in Venereal Diseases*, Charles Elliot, Edinburgh 1787, p. 442; L. Perzyna, op.cit. (note 14), pp. 13–15; J.J. von Plenck, *Lehre von der Erkenntniss und Heilung der Kinderkrankheiten* [Teaching the knowledge and healing of children's diseases], J.G. Binß, Wien 1807, p. 97.

<sup>41</sup> J. Hennen, *Principles of Military Surgery [...] and Syphilis*, Archibald Constable, Edinburgh 1820, p. 550; A. Colles, op.cit. (note 10), p. 260.

<sup>42</sup> B.M. Reyes-Foster, S.K. Carter, *Suspect Bodies, Suspect Milk: Milk Sharing, Wet-nursing, and the Specter of Syphilis in the Twenty-First Century*, [in:] K. Nixon, L. Servitje (eds.), *Syphilis and Subjectivity: From the Victorians to the Present*, Springer International Publishing, Cham 2018, p. 97.

<sup>43</sup> T. Skinner, *Case of transmission of secondary syphilis: with remarks*, "BMJ" 1865 Feb. 4, pp. 111–112.

<sup>44</sup> W. Acton, *A complete practical treatise on venereal diseases*, Renshaw, London 1841, pp. 406–410; W. Acton, *Questions on the contagion of secondary syphilis: can a nurse become affected with syphilis from suckling a child labouring under secondary symptoms? Instance bearing on the question*, "Lancet" 1846, no. 48(1186), pp. 127–128; Editorial, "Lancet" 1846, no. 47(1188), pp. 634–637; D.C. O'Connor, *A nurse diseased by an infant – Is secondary syphilis contagious?*, "Lancet" 1846, no. 47(1190), p. 691; J.F. M'Evers, *Is secondary syphilis contagious?*, "Lancet" 1846, no. 48(1198), p. 198; H. Lee, *Secondary syphilis communicated to a wet-nurse*, "Lancet" 1868, no. 91(2237), p. 748.

<sup>45</sup> C. Günzburg, *Zur Frage über die Austeckungsfähigkeit der Syphilis hereditaria* [On the question of the elucidability of hereditary syphilis], "Oesterreichisches Jahrbuch für Paediatrik" 1872, II. Band, pp. 166–179.

31 healthy wet-nurses breastfed 120 syphilitic infants for a total time of 395½ months (from 6 weeks to 24 months; from 2 to 16 children were breastfed over time by one wet-nurse), and none of them became infected with syphilis. As a result, the author mistakenly accepted that *syphilis hereditaria* [congenital 'hereditary' syphilis] is not contagious to wet-nurses. Of special significance for the explanation of possible transmission of syphilis during breastfeeding is also the observation by Günzburg that 'all' the syphilitic infants had thrush besides typical syphilitic lesions in the mouth, and that more than 33% of the wet-nurses had monilial inflammation of breast nipples.

A wet-nurse with syphilis was a grave threat to a healthy baby. Initially, no distinction was made regarding whether transmission was via infected milk or from physical contact with a sore breast or nipple. It was generally accepted that syphilitic wet-nurses infected healthy infants by contact with primary syphilitic lesions on the nipple. Transmission from secondary lesions remained controversial until the mid-nineteenth century.<sup>46</sup> However, some practitioners still believed that infection was possible via breast milk alone, and even by the milk of wet-nurses who were considered cured.<sup>47</sup> Auguste Cullerier in 1861 and Etienne Lancereaux in 1866 stated that most past and present syphilologists suspected syphilitic infection via the milk, including Jacopo Cataneo, Paracelsus, Ambrose Paré, Astruc, Fabre, Doublet, Rosén, Georg Ernst Stahl, Bell, Mahon, Bertin, John Cooke, and in the authors' time Lane, Parker, Putegnat de Lunéville, Melchior Robert and Philippe Ricord.<sup>48</sup> Other scholarly names could be added to this list, including Jan Jonston,<sup>49</sup> Giorgio Vella<sup>50</sup> and Hermann Boerhaave.<sup>51</sup> This opinion was based on the conviction that milk was made of blood which in diseased nurses had been contaminated. Available

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<sup>46</sup> J.B. Freeman, *The Pathology and Treatment of Venereal Diseases*, 3rd ed., Henry C. Lea, Philadelphia 1870, p. 683.

<sup>47</sup> J.R. Czerwiakowski, *Rozdział 3ci. O wybieraniu mamek, § 49 [Chap. 3. On the choice of wet-nurses]*, [in:] *Nauka dla Rodziców roztropnego chowania dzieci ssących [The Lesson to the Parents on prudent upbringing of sucklings]*, Kraków 1804, manuscript in Polska Akademia Umiejętności, Kraków, No. PAU 1460.

<sup>48</sup> A.F.A. Cullerier, *Précis iconographique des maladies vénériennes*, Librairie de Méquignon-Marvis, Paris 1861, pp. lxx-lxxi; E. Lancereaux, *A treatise on syphilis: historical and practical*, vol. 2, Sydenham Society, London 1869, p. 226.

<sup>49</sup> J. Jonston, *Idea universæ medicinæpracticæ*, Lowijs Elzevier, Amsterdam 1644, pp. 729-730.

<sup>50</sup> G. Vella, *De Morbo Gallico Opusculum*, [in:] *Aphrodisiacus, sive de lue venerea. Opus ab Aloysio Luisino*, Langerak & Verbeek, Leiden 1728, p. 207.

<sup>51</sup> H. Boerhaave, *Praelectiones academicae de lue venerea*, Jacob Brouwer, Franeker 1751, p. 7.

descriptions of clinical situations suggesting that mode of infection left much to be desired.<sup>52</sup> Human milk was not recognized as a vector for syphilitic infection by John Hunter,<sup>53</sup> Swediaur,<sup>54</sup> Wendt,<sup>55</sup> Acton,<sup>56</sup> Bouchut,<sup>57</sup> Auguste Cullerier<sup>58</sup> and others.<sup>59</sup> Colles was in doubt whether the diseased nurse could infect the child unless she had an ulceration on the nipple.<sup>60</sup> Lancereaux came to the conclusion that, as the absolute safety of the milk of an infected nurse had not been clearly proven, it was not prudent to allow a healthy child to be suckled by a syphilitic nurse if one wished to insure against all danger.<sup>61</sup> Josiah Freeman wrote in 1870 that although he believed the milk route of infection was likely, there was no conclusive evidence that this occurred.<sup>62</sup> After the discoveries of *Treponema pallidum* and the Wassermann test, August Reuss (1879–1954), a distinguished Austrian paediatrician, asserted that ‘the milk itself is always harmless... as *Spirochaetes* have never yet [1914] been found in it.’ and ‘it contains abundant antibodies... which may be considered as actual medicine for the infant’.<sup>63</sup> The doubts as to whether human milk might provide a route of transmission of syphilis have not been resolved today.<sup>64</sup>

Relatively early on, it was observed that the infection did not pass to the foetus if the mother contracted syphilis after the seventh month of pregnancy. Thus, generally, a healthy wet-nurse would have been allowed to suckle such an infant.<sup>65</sup>

<sup>52</sup> W. Acton, *A complete...*, op.cit. (note 44), p. 406.

<sup>53</sup> J. Hunter, *A Treatise on the Venereal Disease [...]*, Barrington, & Haswell, Philadelphia 1839, pp. 32–33.

<sup>54</sup> F.X. Swediaur, *Practical observations on venereal complaints*, J. Johnson, London 1786, p. 8.

<sup>55</sup> J. Wendt, op.cit. (note 13), p. 301.

<sup>56</sup> W. Acton, *A complete...*, op.cit. (note 44), p. 406.

<sup>57</sup> E. Bouchut, *Practical treatise on the diseases of children and infants at the breast*, Churchill & Sons, London 1855, p. 76.

<sup>58</sup> A.F.A. Cullerier, op.cit. (note 48), pp. lxxi–lxxii.

<sup>59</sup> J. Stewart, *A practical treatise on the diseases of children*, Harper & Brothers, New York 1845, p. 469.

<sup>60</sup> A. Colles, op.cit. (note 10), p. 260.

<sup>61</sup> E. Lancereaux, op.cit. (note 48), p. 227.

<sup>62</sup> J.B. Freeman, op.cit. (note 46).

<sup>63</sup> A. Reuss, *The diseases of the newborn*, William Wood & Co., New York 1922, pp. 527–528.

<sup>64</sup> Guidelines today permit breastfeeding by a syphilitic woman, who should be after prophylactic medication: R.A. Lawrence, R.M. Lawrence, *Breastfeeding: A Guide for the Medical Profession*, 8th ed., Elsevier, Philadelphia 2016, 408, 789.

<sup>65</sup> P. Diday, *A treatise on syphilis in new-born children and infants at the breast*, The New Sydenham Society, London 1859, pp. 26–32.

## Epidemiology of syphilitic infection during breastfeeding

Syphilis acquired by a healthy wet-nurse from breastfeeding a syphilitic infant and syphilis acquired by a healthy baby when suckled by a syphilitic wet-nurse belong to the group of so-called innocent infections of venereal disease, acquired other than through extramarital sexual contact (*syphilis innocentium s. insontium*). In nineteenth-century Europe, the frequency of extragenital chancres in relation to total cases of primary syphilis was estimated to be from 1.6 to 11.7%.<sup>66</sup> Among these non-genital chancres, in individual studies those on the breast and nipple accounted for from 0 to even 40.7% (from 0 to 3.6% of total cases); however, in the quoted author's opinion these figures were underestimated. In the nineteenth-century statistical meta-analyses of the data, broken down by regions, the incidence of chancres on the breast and nipple in relation to all non-genital chancres was from 2.2% in the United States of America and Austro-Hungary to 38.0% in Italy. In Russia and Poland (*i.e.* the region of Poland then under Russian occupation) the incidence was 18.2%, for which the author blamed the prevalence of 'baby-farming' in these countries.<sup>67</sup> These data, collected mainly from secondary sources, should be considered with caution. The same caution should be applied to another meta-analysis of *syphilis insontium* for the subsequent years 1896–1908 by Oskar Scheuer from Vienna. He collected 81 described cases of infection of the nurse by a syphilitic infant through breastfeeding, but only 26 of infected nurses had been categorized as wet-nurses. Cases of infecting a healthy infant through breastfeeding were equally frequent – 85. All cases of syphilis acquired through breastfeeding comprised 11.7% of collected cases of *syphilis insontium*, being the third causal group after vaccinations and kisses, and equal to the group with syphilis acquired while performing professional medical or midwifery care.<sup>68</sup> We conclude, assuming that the number of particular medical professionals (doctors and midwives) was still much lower in those times than the number of wet-nurses, that the professional risk of syphilis among wet-nurses was lower than the risk experienced by medical professionals.

Already at the end of eighteenth century Leopold Lafontaine (1756–1812), a Royal surgeon in Warsaw, described the high prevalence of

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<sup>66</sup> L.D. Bulkley, *Syphilis in the innocent (Syphilis insontium) clinically and historically considered with a plan for the legal control of the disease*, Bailey & Fairchild, New York 1894, pp. 25–26.

<sup>67</sup> *Ibidem*, p. 30.

<sup>68</sup> O. Scheuer, *Die Syphilis der Unschuldigen (Syphilis insontium)*, Urban & Schwarzenberg, Berlin & Wien 1910, pp. 48–57, 130, 152–153.

syphilis in Warsaw: 'Who did not contract the disease [syphilis] with his own fault, then he would inherit it or receive it as a gift from his wet-nurse, among whom out of 20 for sure 15 could be counted as endowed with this haberdashery'.<sup>69</sup> Yet this estimate was probably much exaggerated because there is no confirmation of such a dramatic situation from other sources. Half a century later, in the years 1856–60, the incidence of diagnosed or suspected syphilis in children admitted to a foundling home in Warsaw was 11.3%.<sup>70</sup> The actual incidence of infection, however, was higher because it was known that syphilis was also present among infants who were transferred to the care of wet-nurses in the countryside before symptoms appeared. The risk for the wet-nurses was calculated as well: out of 1559 wet-nurses employed at the same foundling institution in the years 1856–1865, 131 wet-nurses (8.4%) were transferred to the hospital for venereal patients.<sup>71</sup> In this group, 108 wet-nurses had the primary ulcer on the nipple, and the remaining 23 had more advanced disease. Village wet-nurses diagnosed with syphilis were usually treated in provincial hospitals, but in the above-mentioned years, 72 of them were treated also at the St. Lazarus Hospital in Warsaw. Karol Pawlikowski (1834–1875) estimated that the risk of infection with syphilis for rural wet-nurses was twice as high (*i.e.* about 16%) as among institutional wet-nurses. Because they were unaware of the risks, the risk of infecting other family members was also higher among rural wet-nurses than among live-in institutional wet-nurses. Based on the collected clinical data, Pawlikowski stated that the primary sources of infection for wet-nurses were the foundlings placed in the home and that this route of infection was most significant for spreading syphilis in the region of Poland under Russian occupation.

Some years later, 1889–1893, out of 106 wet-nurses admitted to the same St. Lazarus Hospital in Warsaw because of syphilitic infection from a suckling (with typical lesions on the breasts), 88 wet-nurses were admitted from the foundlings' home. This time, the number of

<sup>69</sup> F.A.L. Lafontaine, *Chirurgisch-medicinische Abhandlungen verschiedenen Inhalts, Polen betreffend* [*Surgical-medical treatises of various contents, concerning Poland*], Wilhelm Gottlieb Korn, Breslau 1792, p. 134.

<sup>70</sup> A. Janikowski, *Statystyka Lekarska Królestwa Polskiego* [*Medical statistics of the Kingdom of Poland*], "Tygodnik Lekarski" 1862, no. 16(35), p. 310.

<sup>71</sup> K. Pawlikowski, *O udzielaniu się choroby syfilitycznej kobietom wiejskim, biorącym dzieci ze szpitala Dz. Jezus na wykarmienie* [*On the transmission of syphilis to rural women who take infants for wet-nursing from the Child Jesus Hospital*], "Gazeta Lekarska" 1866/1867, no. II(28), pp. 441–445; *idem* 1867, no. II(30), pp. 475–481; *idem* 1867, no. II(31), pp. 490–492.

infected institutional wet-nurses was not regarded as high – it accounted for 1.2% of all wet-nurses employed. However, the committee analyzing these data emphasized the fact that all those infected wet-nurses were mothers with families, and could infect intimate persons; so this number should be considered significant and in need of action to limit contagion.<sup>72</sup> Exactly the same concerns were expressed earlier by town officials at Bologna, Italy, and across Europe.<sup>73</sup>

The incidence of syphilis among wet-nurses in other countries at that time is known only from occasional reports. During three years of existence, the Office for Examination of Wet-Nurses in Moscow (1881–1884) examined 490 wet-nurses. Almost 25% of these wet-nurses (122) were disqualified: 21 because of overt syphilis (4% of the total number), 74 because they had signs suggestive of syphilis in the past (16% out of the total number), 14 (3% of the total number) for other reasons.<sup>74</sup> In the years 1889–1898 the foundling home in Milan placed 12,370 infants with external wet-nurses. Of these infants, 686 (5.4%) were reported to have developed syphilis. The risk ratio for the external wet-nurses was slightly higher than the risk of the aforementioned Warsaw institutional wet-nurses: 171 wet-nurses (*i.e.* c. 1.4%) were reported to have been infected with syphilis by their foundling nurslings.<sup>75</sup> The incidence of syphilitic contagion in a St. Petersburg foundling home was much lower because of special internal preventive regulations: out of 235 wet-nurses suckling syphilitic infants only 2 became infected in the years 1866–1867 (0.85%), and out of 1000 wet nurses suckling over 500 sick infants in the years 1872–1874 only 4 (0.4%).<sup>76</sup> Under such conditions, the risk was equally low as for wet-nurses suckling infants who were considered healthy: in the years 1872–1874 syphilis was diagnosed in 28 (0.4%) out of 6867 of these wet-nurses.<sup>77</sup> The tragic situation in the Russian Empire was illustrated later on by K.K. Parfanienko in his well-documented presentation at the meeting of dermatologists in Kharkov [Charkiv]

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<sup>72</sup> A. Elzenberg, *Dziennik posiedzeń komisji ustanowionej dla obmyślenia środków zapobiegających szerzeniu się syfilisu* [Official diary of meetings of the committee set up to devise measures to prevent the spread of syphilis], "Gazeta Lekarska" 1896, no. 31(22), pp. 598–599.

<sup>73</sup> D.I. Kertzer, *Syphilis, foundlings, and wet-nurses in nineteenth-century Italy*, "Journal of Social History" 1999, no. 32(3), pp. 589–602.

<sup>74</sup> В.Н. Жукъ [W.N. Żuk], *Мать и Дитя. Гигиена въ общедоступномъ изложении* [Mother and Child. Hygiene in the surrounding environment], 3rd ed., Sankt-Petersburg 1889, p. 577.

<sup>75</sup> D.I. Kertzer, *op.cit.* (note 73).

<sup>76</sup> E. Klink, *op.cit.* (note 8), p. 438.

<sup>77</sup> *Ibidem*, p. 439.

in 1912.<sup>78</sup> The blatant picture of morbid syphilisation of the Russian countryside inculpated local *zemstvo* authorities who were sending foundlings without medical control to be breastfed by wet-nurses hired for a paltry three or four roubles per month.

The unusually high incidence of syphilis among orthodox Jews at Mielec in southern Poland turned the attention of a newly arrived Jewish physician, who began to investigate the causes and identified four non-sexual routes of transmission of the disease, with wet-nursing as an important factor.<sup>79</sup> The operator who had been performing circumcisions (*mohel*) suffered from syphilis and infected male newborns during the last stage of the procedure by sucking out blood from the remaining part of the prepuce.<sup>80</sup> Jewish mothers who were active during the day in their own businesses used to take their children to daily care by wet-nurses who usually cared for several infants. These mothers usually took their babies home for the night and breastfed them. Wet-nurses became infected by a sick infant, and transmitted the disease to other infants under their care, and then these infants transmitted it to their mothers and hence to whole families. Similar local epidemics elsewhere in Europe could have been amplified by neighbourly milk-sharing.<sup>81</sup> Colles also mentioned other means of transmission of the disease among other members of the nurse's family when the syphilitic nursling was cared for at the nurse's home.<sup>82</sup> Usually the first victim, after the husband, was one of the daughters who was assigned to take care of the nursling. Other children became infected supposedly by close contact when sleeping in one bed.

Similarly to the spread of syphilis when adults with oral lesions relieved engorged breasts by suckling<sup>83</sup>, syphilitic infection in wet-

<sup>78</sup> J.L. [in:] *Wiadomości lecznicze i wiadomości drobne* [Messages regarding treatment and minor news], "Przegląd Pedyatryczny" 1913, no. 5(2), pp. 93–94.

<sup>79</sup> A. Goldhaber, *Szerzenie się kiły u starozakonnych* [Transmission of syphilis among Orthodox Jews], "Przegląd Lekarski" 1879, no. 18(21), pp. 262–263.

<sup>80</sup> This unusual way of syphilis transmission in the Jewish communities in Poland and France was documented also by other sources. A quotation of these sources and discussing the problem is beyond the scope of this article.

<sup>81</sup> E. Lancereaux, op.cit. (note 48), pp. 237–238; F. Drecki, *Szerzenie się przymiotu w Kościelnej Wsi pod Kaliszem* [The spread of syphilis at Kościelna Wieś near Kalisz], "Gazeta Lekarska" 1883, no. 3(24), pp. 459–463.

<sup>82</sup> A. Colles, op.cit. (note 10), p. 275.

<sup>83</sup> A. Everhaers, *Antiqui morbi recrudescens per suetricem indueti cum gallico vel indico collatio: atque utriusque origo, indoles ac perfecta praecipue tuta cita et jucunda curatio [...]*, Middelburg 1661, [cit. in:] N. Rosén von Rosenstein, op.cit. (note 14), p. 322; Uden, 126, [cit. in:] S. Richter, *Wet-nursing, onanism, and the breast in eighteenth-century Germany*, "Journal of the History of Sexuality" 1996, no. 7(1), pp. 1–22; J. Winthrop, op.cit. (note 36).

nurses also occurred when they were hired to strengthen the vitality of syphilitic adults with lesions in the oral cavity.<sup>84</sup> This was, however, a very rare recommendation that emerges from a multitude of treatises on syphilis published until the nineteenth century. François Xavier Swediaur (1748–1824) left to the patient the decision whether he wished to suck the breast directly of 'a strong healthy country wet-nurse' or drink expressed breast milk.<sup>85</sup>

## Symptoms of syphilis acquired by wet-nurses during breastfeeding

Local signs and symptoms of acquired syphilitic infection appeared in wet-nurses usually two to six weeks after signs of syphilis in a breastfed infant were noticed. The initial signs were usually inflamed and enlarged nipples, and tenderness of axillary lymph nodes.<sup>86</sup> Within days small ulcers appeared on the nipple and/or areola, and these merged together, increasing in size to become one big ulcer – a change with the characteristics of a primary chancre. As a result, the nipple could sometimes be completely destroyed. These symptoms likely occurred on both breasts. After several weeks, axillary lymph nodes decreased in size and the chancre underwent healing, usually leaving a scar. As noted by P.A.O. Mahon, regression of the local changes did not mean a cure, since the generalized form of the disease can develop very slowly.<sup>87</sup> Symptoms of the

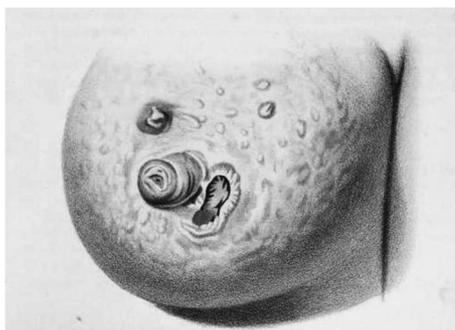


Figure 1. Indurated chancre of the breast (primary symptom) and exanthematous syphilide (secondary symptom) in a nurse. Plate XXIV, [in:] Ph. Ricord, *Illustrations of Syphilitic Disease [...] with the addition of a history of syphilis and a complete bibliography and formulary of remedies [...]*, A. Hart, Philadelphia 1851. Courtesy of HathiTrust.

<sup>84</sup> E. Rudio, *De Morbis Occultis, et venenatis, libri quinque*, Baglionus, Venezia 1610, p. 169; F.X. Swediaur, op.cit. (note 54), p. 146.

<sup>85</sup> F.X. Swediaur, op.cit.

<sup>86</sup> A. Colles, op.cit. (note 10), pp. 270–271.

<sup>87</sup> P.A.O. Mahon, *Important researches upon the existence, nature, and communication of venereal infection in pregnant women, new-born infants and nurses*, T. Beckett, London 1808, pp. 82–97.

generalized form of syphilis – a characteristic rash, sore throat, malaise, fever, bone pain – most often occurred after two to three more weeks, but could occur much later or even within a few days after the onset of the primary chancre. On the other hand, a complete resolution of large primary changes in the nipple without further consequences, even despite the absence of treatment, was also observed. The clinical picture of secondary and tertiary syphilis following primary infection of the breast did not differ substantially from syphilis acquired by routes other than during breastfeeding. A realistic description was provided by Nicolai Detlef Falck (1736–1783), a surgeon publishing in London, who summed it up with the following statement: ‘The patient in this deplorable condition experiences all the torments, ... which human ideas may conceive to be the lot of the damned’.<sup>88</sup> Cases of nasal bone loss and early demise were not uncommon.

## **The history of the prevention of syphilis transmission during breastfeeding**

### **Prevention of transmission to the wet-nurse**

Preventive measures should have relied primarily on isolation of a sick child from healthy persons and on eventual prophylactic administration of anti-syphilitic remedies to close contacts who were considered healthy. These relatively simple principles of prevention of syphilis transmission and specific recommendations were not easy to apply in practice. The most important reason was the latent stage of syphilis in both the breastfed baby and the wet-nurse. The possibility of transmission of infection during the incubation period meant that before the infection was obvious and diagnosed, it could have already been transmitted to a healthy person. Until the early years of the twentieth century, the diagnosis was only possible on the basis of history of the illness and the physical examination. In addition, syphilis was most often diagnosed late, even a few weeks after the appearance of the first symptoms, especially in impoverished social environments which lacked medical assistance. Certainly, an early and accurate diagnosis allowed effective assistance to the child and protection of the wet-nurse. Because the disease was overtly contagious in its symptomatic stage, a delayed diagnosis made all protective measures realistic only regarding unintentional transmission of infection to third

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<sup>88</sup> N.D. Falck, *op.cit.* (note 40), p. 277.

parties in the future. The downside was that unreasonable suspicion of syphilis could deprive the baby of breast milk for the wet-nurse's assumed safety.<sup>89</sup>

For most syphilographers since the sixteenth century, the clinical evidence strongly suggested the difficulty of avoiding transmission of syphilis from an infected infant to his healthy wet-nurse. Yet the absolute ban on breastfeeding a syphilitic child by a healthy wet-nurse had only been gradually imposed since the second half of nineteenth century.<sup>90</sup> Previously, such an explicit position was recommended only by individual doctors such as Louis Guyon Dolois (1527–1617), who advised feeding syphilitic newborns with expressed milk from healthy women, or goat's milk.<sup>91</sup> William Buchan (1729–1805), unrealistically for his times, recommended medical certification that a prospective suckling was clear of the malady and could be breastfed by a healthy wet-nurse.<sup>92</sup> Benjamin Bell (1749–1806) clearly stated that no syphilitic infant be breastfed by a healthy wet-nurse earlier than after three months of continuous treatment with mercury and the resolution of all symptoms.<sup>93</sup> Yet these recommendations were not shared by numerous physicians who either tried to formulate compromise recommendations in the interest of the sick child and his family, or avoided giving decisive statements. Predictably, family doctors and the public followed their own best interests.

A reasonable protection of the wet-nurse against an infant with overt syphilis was recommended rather seldom as, for instance, by the influential surgeon Jacques Guillemeau (1550–1613).<sup>94</sup> In his opinion, the nurse who infected the infant should be released and replaced by a healthy one who should observe certain protective measures. For

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<sup>89</sup> F. Malinowski, *op.cit.* (note 7), p. 781.

<sup>90</sup> L.A. Neugebauer, *Akuszerya. Fizyologia i dyetetyka cięży, porodu i pòłogu* [*Physiology and hygienics of pregnancy, parturition and confinement*], vol. 1, Warszawa 1874, p. 329; A. Baginsky, *Lehrbuch der Kinderkrankheiten für Aerzte und Studierende* [*Textbook of childhood diseases for physicians and students*], Verlag v. Friedrich Wreden, Braunschweig 1887, pp. 269–270; A. Fournier, *The treatment and Prophylaxis of Syphilis*, Rebman Company, New York 1907, pp. 356–362; G.F. Still, *Congenital syphilis*, [in:] Sir D'Arcy Power, J.K. Murphy (eds.), *A System of Syphilis*, vol. I, Frowde, London 1914, p. 366; L. Findlay, *Syphilis in Childhood*, Henry Froude and Hodder & Stoughton, London 1919, pp. 28–29.

<sup>91</sup> L. Guyon Dolois, *op.cit.* (note 25), p. 27.

<sup>92</sup> W. Buchan, *Observations Concerning Prevention and Cure of Verereal Disease Intended to Guard the Ignorant and Unwary against the Harmful Effects of That Insidious Malady*, T. Chapman, London 1796, p. 155.

<sup>93</sup> B. Bell, *A treatise on gonorrhoea virulenta, and lues venerea*, Robert Campbell, Philadelphia 1800, p. 197.

<sup>94</sup> J. Guillemeau, *op.cit.* (note 32), pp. 113–115.

this purpose, he recommended *Aqua Theriacalis* with sarsaparilla for rubbing into the nipples before every feeding and drinking two ounces (60 ml) of the same medicine every morning. Also, according to this author, 'making milk medicinal' by administering specific medicines to the wet-nurse which were intended for the syphilitic suckling was a form of protection for a healthy wet-nurse who 'took no preservative'. Hiring a healthy wet-nurse to feed a syphilitic baby was recommended by some doctors until the mid-nineteenth century. She was advised to receive prophylactic preparations of mercury,<sup>95</sup> usually a dose of two grains of calomel every third day, and should breastfeed with nipple shields for protection.<sup>96</sup> Surprisingly, the eighteenth- and nineteenth-century preventive recommendations did not include feeding syphilitic children with expressed human milk. One of the reasons might have been the contemporary conviction that human milk lost its potent anti-infective properties during the expression process and on exposure to air.<sup>97</sup> Another possible reason was the fear of administering expressed milk that had been adulterated with water or other substances.

Institutional preventive measures in the form of inspection of prospective wet-nurses were aimed primarily at protection of a nurse-child and the family against infection by a wet-nurse, but at the same time it reduced the risk of syphilis among wet-nurses. Without systematic monitoring, the risk was great because of the frequent changing of wet-nurses for sick and weak babies, including infants with unrecognized congenital or acquired syphilis. The natural consequence of the appearance of syphilitic signs in the wet-nurse was dismissing her and hiring a healthy one. There were serious gaps in any institutional system of prevention. For example, potential wet-nurses who had been rejected by the inspection office in eighteenth-century Stockholm were subsequently hired directly by families in need. With the passage of time the system had decayed and the rules consciously relaxed.<sup>98</sup>

<sup>95</sup> J. Wendt, *op.cit.* (note 13), p. 309; P. Diday, *op.cit.* (note 65), p. 232.

<sup>96</sup> A. Reder, *Nauka o chorobach wenerycznych (Syphilidologia)* [Teaching on venereal diseases], A. Kurcysz (trans.), Druk. Gazety Lekarskiej, Warszawa 1873, p. 366.

<sup>97</sup> L. Perzyna, S.A. Tissot, *Porządek życia w czerstwości zdrowia w długie prowadzący lata: ze wszystkich dzieł p. Tyssota w iedno zebrany* [Order of life resulting in the robust health for long years: collected into one from all works by Mr Tissot], Supraśl 1789, p. 18; G. Zerbi, *Gerontocomia: On the Care of the Aged* [Roma, 1489], L.R. Lind (trans.), American Philosophical Society, Philadelphia 1988, p. 180.

<sup>98</sup> S. Hedenborg, *To breastfeed another woman's child: wet-nursing in Stockholm, 1777-1937*, "Continuity and Change" 2001, no. 16(3), pp. 399-422.

Relatively good results of prevention of syphilis among institutional wet-nurses were obtained in the St. Petersburg foundling house (already mentioned above) thanks to strict implementation of certain procedures: 1. Wet-nurses who had agreed to breastfeed a syphilitic infant were warned regarding the danger of infection when not following prevention measures ordered by physicians. 2. Wet-nurses were obliged to wash the breast carefully with 1% phenol, potassium permanganate or sublimate after every breastfeeding. 3. Their nipples were examined several times every day for even any tiny lesions. 4. A wet-nurse with a nipple lesion was removed from the syphilitic infants' ward, the lesion was treated carefully with lunar caustic (*lapis infernalis*, i.e. silver nitrate), and she was placed under observation for six weeks. It should be noted here that the wet-nurses who agreed to breastfeed syphilitic infants had the same salary as the remaining wet-nurses.<sup>99</sup> Special precautions were also undertaken for the protection of external wet-nurses. First, the foundlings were not sent out to villages earlier than at the age of one and a half to two months. Before discharge from the foundling home the child had to be examined by the doctor responsible for the transfer of foundlings to the countryside, and then by the chief medical officer. Soon after arriving in the countryside the infant had to be examined by the affiliated medical officer in the region, who was also obliged to see the child once a month.<sup>100</sup>

The evidence, described above, that preventive methods made sense was also provided by Carl Günzburg from Moscow and Antoni Elzenberg from Warsaw.<sup>101</sup> Unfortunately Günzburg did not elaborate on the measures of prevention and the treatment of syphilitic and monilial infections which were undertaken, but he did mention performing cauterization of nipple fissures, which could have had a preventive effect against syphilitic contagion. We may surmise that the good effects were achieved by special care of the wet-nurses' nipples.

Early and accurate diagnosis of syphilis in the infant was particularly important for protection against infection of innocent nurses: the mother in the case of acquired infection in her child, the wet-nurse in the case of congenital infection in the child, and the dry-nurse in any case of infection in a child under care. Pending the development of specific laboratory tests, the correct medical diagnostic, preventive

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<sup>99</sup> E. Klink, op.cit. (note 8), pp. 437–438.

<sup>100</sup> Ibidem, p. 439.

<sup>101</sup> C. Günzburg, op.cit. (note 45); A. Elzenberg, op.cit. (note 72).

and therapeutic procedures depended on a good clinical knowledge of venereal diseases' symptomatology. Very numerous articles and books on these diseases in the eighteenth and nineteenth centuries left a testimony of sometimes extreme differences of opinion between contemporaneous physicians. From today's vantage point, it is easy to choose the reasonable recommendations available then, but at the time they were not always regarded as such. Besides, the power of these recommendations, not always reasonable according to the state of knowledge today, depended on the authority of the writer and the place and language of publication. Already in 1775 the Parisian medical faculty proposed the obligation of accoucheurs and midwives to mark syphilitic infants by attaching a pad to the shoulder with the health status of the child and his parents.<sup>102</sup> In general, the proposed measures usually depended on the commitment of doctors to a scrupulous examination of all newborns at birth and later (which was unrealistic as doctors were called in only for difficult deliveries and had little time to perform regular check-ups of infants as advised).

An example of the dilemmas for the contemporary physicians were proposals put before the committee appointed to prevent the spread of extra-genital syphilis by infants from a foundling home in Warsaw in 1865.<sup>103</sup> The proposal of subjecting foundlings transferred to the countryside and their wet-nurses to regular medical control had been rejected because the cost of employing the physicians was unacceptable to the municipal authorities. The second proposal – publishing an information booklet on the diagnosis of syphilis in infants – had also failed because the committee concluded that the symptoms of syphilis in children could not be accessibly described in a popular booklet, and furthermore, reading this booklet could dissuade women from taking a baby from the foundling home.

Expedient means of syphilis prevention among wet-nurses and the children were formulated and implemented by Karol Pawlikowski in Warsaw in 1866–1867.<sup>104</sup> Abandoned infants had to stay in hospital for two months being watched carefully and protected against catching the disease. They could be assigned to a village wet-nurse after two months. If syphilitic lesions appeared, especially in the oral cavity, then the child should be artificially fed until after complete healing.

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<sup>102</sup> E. Lancereaux, op.cit. (note 48), p. 277.

<sup>103</sup> F. Giedroyc, *Rada Lekarska Księstwa Warszawskiego i Królestwa Polskiego (1809–1867)*[*The Medical Council of the Duchy of Warsaw and the Kingdom of Poland (1809–1867)*], E. Wende, Warszawa 1913, p. 657.

<sup>104</sup> K. Pawlikowski, op.cit. (note 71), pp. 490–492.

Breastfeeding a syphilitic infant was permitted only by a wet-nurse with past or present syphilitic infection. An infant allegedly healed from syphilis should never be sent out for wet-nursing, because, after latency, the disease might relapse and lead to further infections. Protection of hospital wet-nurses should include strict medical supervision, frequent washing of the breasts with chlorine water (*Aqua chlori*, 0.4 parts of Cl for 100 parts of H<sub>2</sub>O), and no feeding from a cracked nipple or injured breast. Every injury to the infant's mouth should be treated with lunar caustic. Every village wet-nurse should be informed regarding the symptoms of infantile syphilis, and on noticing anything suspicious in this respect she should attend the doctor who ought to counsel her adequately and eventually send her to hospital. Ideally, the village mayor and/or the local parson should be informed about the nurse child, and should supervise the wet-nurse and the infant. Every wet-nurse who left the hospital for private employment should visit the hospital every week or fortnight for several months for breast examination. Any wet-nurse with unusual symptoms and signs in her breasts should not be allowed to quit the hospital employment before solving her health problems.

The period of two months for the foundling's obligatory institutional stay was not safe enough. A meta-analysis presented by Giuseppe Profeta (1840–1910), professor of dermatology and syphilology in Palermo, showed that the first symptoms of congenital syphilis appeared after two months in 18.6% of foundlings, and after the third month in 5.7%.<sup>105</sup> In 1896, another special committee in Warsaw called 'to devise a plan to prevent the spread of syphilis' recommended that a delay of at least two months should pass before a foundling could be sent to a wet-nurse in the countryside. Other desiderata stipulated that wet-nurses should be properly informed of the symptoms of syphilis in infants, that the list of wet-nurses who had been treated for syphilis should be available to wet-nurse bureaux and private employers, and finally, that a syphilologist should be employed by foundling homes.<sup>106</sup>

### **Prevention of transmission to the wet-nursed infant**

Consistent preventive actions in the other direction of transmission – from a nurse to the child – were more difficult to introduce as

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<sup>105</sup> G. Profeta, *Sulla sifilide per allattamento* [On syphilis and breastfeeding], Mariani, Firenze [1865], p. 24.

<sup>106</sup> A. Elzenberg, *op.cit.* (note 72), p. 599.

they required violation of important rules of social life among adults: trust in interpersonal relations, privacy and personal freedom. In wet-nursing contracts, as well as in other ‘fee-for-service’ contracts, these rules were more easily broken regarding the weaker partner – the wet-nurse. In any case, often the agreement was only verbal. The asymmetry in requirements was remarkable. For instance, no one asked for a formal certificate of morality regarding the employing family, and no doctor was obliged to examine the infant’s mother on behalf of the prospective wet-nurse. The level of trust was supposed to be lower regarding wet-nurses. Adaptation of the accepted social rules seemed necessary especially after shocking episodes. A glaring example was the employment as wet-nurses in Warsaw in 1896 of two controlled prostitutes with secondary syphilis, a situation that highlighted the obligation of wet-nurse bureaux to check whether the candidate had been registered as a controlled prostitute.<sup>107</sup>

The problem of the choice of a healthy wet-nurse was extensively discussed in medical textbooks and guides for mothers ever since ancient times in order to reduce the risk of employing a diseased woman.<sup>108</sup> Special attention to the moral qualities of candidates for a wet-nurse position made sense also in order to prevent the employment of ‘a real whore’, in which the probability of latent syphilis was significantly higher than among other candidates.<sup>109</sup> A seemingly quite common risk was employing a wet-nurse in the early latent stage of the disease, after she had innocently contracted it from suckling a previous, symptomless infant in her charge. The advice stipulated that, when her disease became recognized, the present infant should be immediately separated from her because there was still a chance that he was not yet infected. The medical literature only rarely advised that the wet-nurse should be treated and kept at the home of her employers with endeavours to maintain her lactation, so that she would still be able to breastfeed in case the symptoms of syphilis appeared in the present infant.<sup>110</sup>

Through history, syphilographers and health supervisors had been giving more and more detailed recommendations and warnings regarding the medical examination of wet-nurse applicants and their children. But probably the most comprehensive and sound text on this

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<sup>107</sup> A. Elzenberg, op.cit. (note 72), “Gazeta Lekarska” 1896, no. 31(27), pp. 732–733.

<sup>108</sup> V. Thorley, T. Sioda, *Selection criteria for wet-nurses: Ancient recommendations that survived across time*, “Breastfeeding Review” 2016, no. 24(3), pp. 13–24.

<sup>109</sup> J.R. Czerwiakowski, op.cit. (note 47).

<sup>110</sup> L.A. Neugebauer, op.cit. (note 90), pp. 329–330.

examination was written by R. Ledermann from Berlin in the declining years of wet-nursing (1905). This author clearly illustrated possible pitfalls for an inexperienced or neglectful physician, especially in the view that *omnis syphiliticus mendax* [all syphilitics cheat].<sup>111</sup> A specific laboratory test – the Wassermann reaction – became useful after 1906, and its importance for wet-nursing was quickly recognized, as well as its emerging limitations regarding specificity. Official endorsements of the test for routine screening of candidates for wet-nursing followed soon all over the world: at Kharkov in the Russian Empire in 1912,<sup>112</sup> in San Francisco in 1914,<sup>113</sup> in New York in 1917.<sup>114</sup> In independent Poland, the routine testing became formally recommended first in suspected newborns for the protection of wet-nurses.<sup>115</sup>

Prior to the discovery of the Wassermann reaction, essential information on whether the candidate suffered from syphilis could be obtained during the gynaecological examination with a vaginal speculum, which had been in use since ancient times.<sup>116</sup> The implementation of this diagnostic method into practice with prostitutes and syphilitic patients began in the first half of the nineteenth century and evolved slowly without the adequate backing of opinion-forming syphilologists it deserved.<sup>117</sup> It seems that for a good many years the method was used only sparingly with candidates for wet-nurse employment. The reasons were explicitly described by Pierre Cazeaux (1808–1862): ‘To require a nurse to submit to a thorough examination of the genital parts and the use of the speculum, which is indispensable to a strict diagnosis, would be to receive an almost certain

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<sup>111</sup> R. Ledermann, op.cit. (note 11), pp. 561–590.

<sup>112</sup> J.L., op.cit. (note 78).

<sup>113</sup> W.P. Lucas, *Wet nurse directory: Established at the University Hospital*, “California State Journal of Medicine” 1914, no. 12(Nov.), pp. 472–473.

<sup>114</sup> L. Neuwelt, *Nursing in Venereal Diseases. III. Syphilis. The Nurse*, “A Monthly Journal of Practical Knowledge” 1917, no. 6(5), pp. 316–323.

<sup>115</sup> *Instrukcja dla władz sanitarnych I. instancji w sprawie stosowania rozporządzenia o karmicielkach* [Instruction for the health authorities of Ist level on the application of the regulation regarding wet-nurses], “Monitor Polski”, 14 IV 1925, nr 86.

<sup>116</sup> J.V. Ricci, *The Development of Gynecological Surgery and Instruments*, Blakiston, Philadelphia 1949, pp. 9–10, 34–39, 63.

<sup>117</sup> *Ibidem*, pp. 293–319; A.-J.-B. Parent-Duchâtelet, *De la prostitution dans la ville de Paris* [On the prostitution in the city of Paris], vol. 1, 2nd ed., Bailliere, Paris 1837, p. 214; A. Janikowski, *O korzyściach wynikających z leczenia chorób wenerycznych bez merkuryuszu w Szpitalu Sgo Łazarza w Warszawie* [The benefits of the treatment of venereal diseases without mercury at St. Lazarus Hospital in Warsaw], “Pamiętnik Towarzystwa Lekarskiego Warszawskiego” 1840, no. 3(1), pp. 7–22.

refusal'.<sup>118</sup> According to this author, only shameless women or hungry unfortunates would not decline. Furthermore, no nurse would agree to frequent examinations when presented to several families in a short time.

In the search for effective preventive measures which would increase the safety of breastfed infants, wet-nurses and the doctors involved, the hopes of several French scholars were turned in the 1850s for a while to 'syphilisation', an erroneous method of multiple inoculations of syphilitic and healthy subjects, for instance prostitutes, with pus from a primary chancre. The intention was to develop the subject's immunity against syphilis as a treatment or prevention. In fact, for healthy subjects the procedure was unfortunately another way of extragenital transmission of the infection with all its tragic consequences.<sup>119</sup> Fortunately, this method never became accredited in France, and we do not have evidence it was practiced with wet-nurses anywhere outside France except, possibly, on individual cases.

## Treatment of syphilitic wet-nurses

Abraham Colles (1773–1843) stated that in a greater number of wet-nurses the disease appeared very obstinate and intractable despite treatment with mercury.<sup>120</sup> Celso Pellizzari (1851–1925), professor of dermatology and syphilology in Florence, considered syphilis acquired during lactation as particularly malignant.<sup>121</sup> To understand what could happen to a healthy wet-nurse infected with syphilis by the baby she breastfed requires a brief presentation of how great a burden on her state of health resulted from not only the disease, but also its treatment, commonly defined as horror and hard penance.<sup>122</sup>

From the fifteenth to the nineteenth centuries syphilis was treated with mercury preparations administered in different schemes orally, with or without frictions (*inunctiones*) of the gray mercurial ointment (usually about four ounces) performed on the whole body or locally

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<sup>118</sup> P. Cazeaux, *A theoretical and practical treatise on midwifery: including the diseases of pregnancy and parturition, and the attentions required by the child from birth to the period of weaning*, Lindsay & Blakiston, Philadelphia 1857, p. 957.

<sup>119</sup> J. Sherwood, *Syphilization: Human Experimentation in the Search for a Syphilis Vaccine in the Nineteenth Century*, "Journal of the History of Medicine" 1999, no. 54(3), pp. 364–386.

<sup>120</sup> A. Colles, *op.cit.* (note 10), p. 271.

<sup>121</sup> C. Pellizzari, [cit. per:] O. Scheuer, *op.cit.* (note 68), p. 134.

<sup>122</sup> A. Reder, *op.cit.* (note 96), pp. 329–332.

in baths organized specially for this purpose. During the sixteenth century certain rules regarding the dosage of mercury were established in order to bring the patient to the stage of salivation, which according to its advocates, was indicative of effective treatment. According to modern assessment, mercurial preparations were not specific enough drugs to cure syphilis.<sup>123</sup> Until the eighteenth century, itinerant quacks (*medicastro*) most commonly treated syphilis as not all doctors wanted to deal with syphilitic patients.<sup>124</sup> The results of frequently improper treatment were acute mercury poisoning (*mercurialismus*) and death of the patient. Yet severe side effects followed even a skillful and careful treatment with mercury. At the stage of treatment involving salivation, other severe symptoms of mercury poisoning occurred simultaneously. These were: general breakdown, heavy sweating, tachycardia, loss of teeth, sensory disorders and neuropsychiatric symptoms. While Rosén recommended treating the mother or wet-nurse with mercurial compounds, he advised against inducing salivation in her, on the grounds of the physical harm it caused, and instead he recommended slower cures.<sup>125</sup> Treatment with mercury frictions usually lasted two and a half months, and Rosén believed it was not always sufficient.<sup>126</sup> The drugs received internally were intended to heal also the nurse's primary skin changes, usually on the nipple. Results of the supportive local treatment with calomel were evaluated by the practitioners favouring its use as good.<sup>127</sup>

The search for other effective remedies was ongoing and the doctors experimented with various methods of mercurial treatment that were considered gentle to the patient (*par extinction*). From the sixteenth century, the treatment was supported with preparations made of the guaiac tree and sarsaparilla (root of the *Smilax* genus), and promoted in conjunction with dietary restrictions (*i.e. Quadragesima poenitentialis* – Lenten penance). In the 1830s potassium iodide was introduced. A milder course of treatment of syphilis was obtained by introducing salvarsan – a drug discovered in Paul Erlich's laboratory

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<sup>123</sup> J.T. Crissey, L.Ch. Parish, *The Dermatology and Syphilology of the Nineteenth Century*, Praeger, New York 1981, pp. 220–224.

<sup>124</sup> A. Reder, *op.cit.* (note 96), p. 329.

<sup>125</sup> N. Rosén, *op.cit.* (note 14), pp. 343–346.

<sup>126</sup> *Ibidem.*

<sup>127</sup> K. Pawlikowski, *Podwójne zarażenie chorobą weneryczną mamki od dziecka i innego dziecka od tej samej mamki* [*The double infection with venereal disease of a wet-nurse from the infant, and of another infant from the same wet-nurse*], "Klinika" 1867, no. 1(23), pp. 410–412.

in 1909. Side effects of this treatment with low doses – headaches and nausea – resolved within 12 hours of administration.<sup>128</sup>

The mercurial treatment was accompanied by additional difficult burdens for the patient: rubbing with the grey ointment was carried out in a strongly heated chamber, dietary restrictions were introduced for the entire period of treatment, and non-specific, difficult-to-bear medicinal procedures were recommended. For example, Richard Wiseman (1622?–1676) treated a wet-nurse, who was infected by her charge, with bloodletting, three or four courses of laxatives, then with emetics followed by mercurial salivation, again laxation followed by a dry diet with sarsaparilla, guaiac and diaphoretics.<sup>129</sup> Notwithstanding the foregoing burdens, the patients were exposed to mental and physical distress caused by people taking care of them. Not without reason the following admonition was directed by Ludwik Perzyna (1742–1812), a Polish physician and Merciful Brother:

‘I have to warn Gentelmen the Barbers: that when taking care of syphilitics, one should treat them with utmost humanity and charity, these patients have enough of their own misery and suffering, they do not need to receive more with indecent words, scurrilous striping of plasters, or abrading their injuries, and because you, who take remuneration for your work, fulfil your obligation, which with compassion should be given. It is not proper for you to take the position of a judge saying: *No regret! He should remember!* because you are a Barber not a Judge, for it is not in your competence, and not seemly proper, to take on yourself the duties of a torturer tormenting people [...]’.<sup>130</sup>

## Treatment of syphilitic infants by administering medicines to the wet-nurses

Widespread awareness among physicians of the risk of infecting a healthy wet-nurse by a child with congenital or acquired syphilis led to an essential therapeutic dilemma: whether to insist on breastfeeding by a wet-nurse informed about the risk of infection with syphilis or to recommend artificial feeding with animal milk, with a very high risk for the sick infant. When some doctors daringly introduced inter-

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<sup>128</sup> L. Findlay, op.cit. (note 90), pp. 125–126.

<sup>129</sup> R. Wiseman, *Several Chirurgical Treatises*, Fletcher, London 1676, Book VII, pp. 30–31 (incorrect pagination).

<sup>130</sup> L. Perzyna, op.cit. (note 14), pp. 19–20.

nal treatment with mercury for syphilitic infants,<sup>131</sup> this innovation reduced to some extent the moral weight of the dilemma and opened the possibility of that treatment also in the indirect way by administration of anti-syphilitic medicines to their nurses.

The indirect treatment of syphilitic infants stands out as a very specific field of pharmacotherapy within the age-old practice of dosing the wet-nurse (or mother) to treat the sick infant.<sup>132</sup> Already Jacques Guillemeau recommended three different composite medicines for the wet-nurse with the concurrent aims of making her milk 'medicinal' for the diseased suckling and of protecting her against syphilis.<sup>133</sup> When the treatment with mercury was generally approved for infants, mercurial medicines became used also in the indirect way. In the understanding of eighteenth-century syphilologists, that indirect method of medicating syphilitic children had the additional advantages in the simultaneous treatment of the syphilitic mother or wet-nurse, or in preventing syphilis transmission to a healthy wet-nurse.<sup>134</sup>

The indirect treatment for congenital syphilis was used in a systematic manner at the Vaugirard hospital in Paris from 1780 but the clinical results were assessed as negative.<sup>135</sup> A shortage of wet-nurses willing to undertake the hazards of breastfeeding syphilitic infants and the mercurial treatment gave rise to the idea of employing goats instead. This method was used in Italy and France but was unsuccessful in the northern European countries because these surrogate wet-nurses soon died when treated with mercurial frictions.<sup>136</sup> Unsuccessfully again, wet-nurses were recruited for the indirect treatment after the introduction of new medicines for syphilis: potassium iodide and salvarsan.<sup>137</sup>

## Conclusion

Infant feeding by wet-nurses was blamed for all the evils of this world: *Tous les plus le maux affreux dérivent... du lait des Nourrices*

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<sup>131</sup> E. Lancereaux, op.cit. (note 48), p. 326.

<sup>132</sup> T. Sioda, V. Thorley, *Human milk as a medicine historically*, "Pharmaceutical Historian" 2019, no. 49(1), pp. 16–23.

<sup>133</sup> J. Guillemeau, op.cit. (note 32), pp. 113–114.

<sup>134</sup> E. Lancereaux, op.cit. (note 48), p. 326.

<sup>135</sup> J. Sherwood, *Infection of the Innocents. Wet Nurses, Infants, and Syphilis in France, 1708–1900*, McGill-Queen's University Press, Montreal 2010.

<sup>136</sup> J. Szymkiewicz, *Nauka o chorobach dzieci* [Teaching on the diseases of children], Zawadzki, Wilno 1810, p. 170.

<sup>137</sup> T. Sioda, op.cit. (note 132).

[All the more awful evils derive... from the milk of Wet-nurses].<sup>138</sup> Comments such as this emanated from those with an interest in the infant who was dependent on a wet-nurse, such as the medical men who acted as advisors and intermediaries in such transactions, governors of foundling institutions, and leading citizens who influenced policies. However, such statements ignored the fact that there was risk in the reverse direction, in that a wet-nurse could be inadvertently infected through her occupation. The most serious threat to the health of wet-nurses in modern times until the early twentieth century was syphilis acquired in an 'innocent' way during mercenary breastfeeding, which generally ended that income source and dramatically affected their lives. Both the disease and its treatment – including indirect treatment of the infant by dosing the nurse with toxic mercurial compounds – impacted enormously on the health and well-being of the 'unfortunate creatures' and their families. Yet some foundling institutions managed to reduce the risk to the wet-nurse significantly by employing preventive measures. It was only with the introduction of effective therapy in the twentieth century, by which time the occupation of wet-nurse had declined, that vertical transmission of syphilis through wet-nursing ceased to be the scourge that it once was.

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<sup>138</sup> P. Sue, *Essais historiques, littéraires et critiques, sur l'art des accouchements* [Historical, literary and critical essays on the art of childbirth], vol. 1, J.-F. Bastien, Paris 1779, p. 633.

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