

## Unsexing Gonorrhoea: Bacteriologists, Gynaecologists, and Suffragists in Britain, 1860–1920

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**SUMMARY.** In the 1860s, surgeons regarded gonorrhoea as a disease that largely affected men, being almost sex-specific. Yet, surgeons reported that gonorrhoeal poisons were often spread to men by healthy women, implying that many females were carriers. By the first two decades of the twentieth century, gonorrhoea had been unsexed and was remade as a communicable disease, caused by the gonococcus, that affected both sexes. In fact, gynaecologists and feminists increasingly argued that gonorrhoea was much more serious in women than men, causing pelvic inflammatory disease, infertility, and even death. The obvious explanation of this change is that it followed from the recognition of the ‘true nature’ of gonorrhoea, after Albert Neisser’s discovery of the causal microbe in 1879. In this article, I argue that events were more complex and I show that closure on a new aetiology and pathology was contested and lengthy. In these negotiations, bacteriologists played a relatively minor role; far more important were gynaecologists and obstetricians acting in the context of struggles over specialization with general surgeons and midwives, the emergence of new specialists in venereal diseases, and the campaigning activities of women doctors and suffragists.

**KEYWORDS:** bacteriology, gonorrhoea, gynaecology, midwifery, Great Britain, nineteenth century, twentieth century, suffrage movement, venereal diseases.

In the 1860s, surgeons regarded gonorrhoea as a disease that largely affected men, being almost sex-specific. They commonly reported that gonorrhoeal poisons were spread to men by healthy women, implying that females were carriers. The gendered character of the condition was evident in the name, which derived from the Latin for ‘discharge of semen’. By the first two decades of the twentieth century, gonorrhoea had been unsexed and remade as a communicable disease, caused by a specific micro-organism—the gonococcus. Pathologically, gonorrhoea became one of a range of gonococcal infections that affected mucus and serous membranes anywhere in the body. From 1880, obstetricians, gynaecologists, and feminists argued that gonorrhoea was in fact much more serious in women than men, causing pelvic inflammatory disease, infertility, and even death. Indeed, from being a relatively trivial complaint, by the 1910s the disease had been remade in the mould of syphilis as a serious threat to individuals and the race.

The obvious explanation of this change in the pathology of gonorrhoea is that its ‘true nature’ was recognized with Albert Neisser’s announcement of the gonococcus in 1879.<sup>1</sup> A story can be told where Neisser was the first in a line of researchers who brought certainty and closure to the aetiology and pathology of gonorrhoea, using the techniques of laboratory medicine and new principles of bacteriological investigation. Gonorrhoea was arguably the first disease for which

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<sup>1</sup> R. S. Morton, *Gonorrhoea* (New York, 1977), pp. 21–5. The micro-organism is now known as *Neisseria gonorrhoeae*.

Robert Koch's famous four postulates for an aetiological proof were met.<sup>2</sup> Furthermore, this change can also be presented as paradigmatic of the shift from a physiological to an ontological conception of disease.<sup>3</sup> Thus, doctors allegedly ceased to define gonorrhoea through its symptoms and effects on the body's structure and above all function, portraying it instead as an entity, defined by the presence of a specific causative agent. The physiological conception was more holistic and saw disease processes as essential for healing and something to be encouraged. The ontological conception was reductionist and typically saw disease processes as needing to be countered and causes removed. The ontological conception has come to dominate medicine; hence, doctors have increasingly diagnosed gonorrhoea through bacteriological tests that confirm the presence of the disease-germ rather than relying on clinical symptoms. This difference helps explain the gendered pattern of incidence seen since the 1860s, for while 80 per cent of men testing positive for the gonococcus show signs and symptoms, only 20 per cent of women do. So an obvious explanation of the recognition of gonorrhoea in women is that bacteriologists, with their laboratory techniques, revealed a hidden pandemic.

In this article, I argue that this was not the case; instead, I show that doubts about the sex-specific character of gonorrhoea pre- and post-date the 'Golden Age of Bacteriology' of the 1880s, and that closure on its aetiology and pathology was lengthy rather than settled quickly. In these negotiations, bacteriologists played a relatively minor role; far more important were gynaecologists and obstetricians, acting in the context of struggles with general surgeons over the disease in the context of specialization, and with midwives over childbirth. Also crucial were the changed sexual politics of the late nineteenth century and the campaigning activities of women doctors and suffragists, especially Christabel Pankhurst.

### *Surgeons and Gonorrhoea, 1860–80*

Surgeons' views of gonorrhoea in the 1860s were typically anatomical. They pictured it as a disease of the urethra and connecting parts, of which there were many in the male genito-urinary system, whereas in women the urethra was short and linked only to the bladder. The disease was described in textbooks as a specific contagious disease, spread to men mainly by sexual contact with women's genital fluids, particularly the contaminated bodies of prostitutes.<sup>4</sup> While it arose from contact with a specific, probably chemical, poison, its development was quite variable. By 1860, surgeons were clear that gonorrhoea and syphilis were distinct conditions, although they were linked by their status as 'venereal diseases' and the assumption

<sup>2</sup> Koch's postulates for demonstrating the bacterial aetiology of a communicable disease are: that a specific micro-organism must be shown to be constantly present in diseased tissue; that the specific organism must be grown and isolated in pure culture; that the pure culture must produce the disease when inoculated into a healthy animal; and finally, that the pathogenic micro-organism has to be recovered from the infected animal and produced again in pure culture. T. D. Brock, *Robert Koch: A Life in Medicine and Bacteriology* (Madison, 1988), pp. 179–82.

<sup>3</sup> R. A. Aronowitz, *Making Sense of Illness: Science, Society and Disease* (Cambridge, 1998), pp. 7–10.

<sup>4</sup> This section is based on J. E. Erichsen, *The Science and Art of Surgery* (London, 1861, 1869, and 1877 edns.); T. Holmes (ed.), *A System of Surgery*, vols 1–4 (London, 1864); F. J. Gant, *The Principles of Surgery* (London, 1864).

that they were mainly spread from ‘impure or indiscriminate sexual intercourse’ with ‘unsound women’.<sup>5</sup> Syphilis was regarded as more serious, because it was congenital, had serious systemic consequences, affected both sexes, and could cause death. Gonorrhoea was seen as local, usually mild, and specific to males, with a ‘dose of the clap’ being analogous to the common cold. There were symptomatic similarities—discharge, soreness and congestion with the organ affected, and a self-limiting condition with no long-term effects.

Clinically, gonorrhoea was defined by a yellow or green copious discharge, although there were uncertainties about its relationship with other forms of urethritis, especially over whether a non-specific inflammation could become gonorrhoeal. Textbooks listed the main sources of non-gonorrhoeal urethritis as contact with menstrual blood or ammonia, and mechanical damage from sexual excess, with some surgeons maintaining that transmutation to the gonorrhoeal form was common in men with rheumatic and scrofulous constitutions. Such ideas were valuable in explaining how apparently chaste men appeared to have caught the disease from their ‘innocent’ wives. Surgeons wrote of the disease developing in three stages: (i) a latent period of days; (ii) the development of an acute phase of intense inflammation, discharge, and pain lasting weeks; and (iii) continuing milder irritation for months or perhaps years. Latency, development, and persistence suggested to some doctors that the poison was a living organism or a complex chemical with similar properties. Prognoses were very variable. Most men would experience short-term discomfort when urinating and a discharge from a sore penis. Severe swelling could restrict the urethra and require surgical intervention. Doctors assumed that severity followed the quantity or the virulence of the poison received, and the individual’s constitutional type and lifestyle—intemperance and sexual excess were said to predispose. In most cases, the symptoms moderated and the sufferer was left with a scantier discharge, the condition known as ‘gleet’. However, the poison could spread to other parts of the body, most immediately to the bladder, Cowper’s gland, testes, and kidneys—and from there to cause inflammation in the eyes and especially the joints. Repeat attacks were assumed to habituate the sufferer to the poison, leading to milder symptoms and a shorter illness.

The symptoms of gonorrhoea were mostly local, external, and managed like other surgical diseases. While surgeons expounded an increasingly heroic ideology, much of their work involved the local treatment of lesions and the conservative management of the patient with rest, diet, and drugs.<sup>6</sup> The treatment of gonorrhoea was in this mould. The once-favoured abortive treatment, where irritants and antiseptics were introduced into the urethra to flush out the poison, was now condemned as dangerous and more likely to force poisons into the tissues. That said, surgeons still inserted ‘bougies’ and ‘pencils’, only now these carried milder compounds that were believed to diminish local irritation and ease strictures of the urethra. The main therapeutic strategy was hygiene. Surgeons recommended rest, warm baths, avoiding irritation to the genitals, and drinking plenty of water to

<sup>5</sup> Erichsen, *Science and Art* (1869 edn), p. 626.

<sup>6</sup> C. Lawrence, *Medical Theory, Surgical Practice* (London, 1992), pp. 1–41.

dilute the urine, plus abstinence from alcohol and sexual excitement. Local complications such as abscesses were drained, swollen testes were relieved by bleeding or with leeches, and strictures were opened and relieved. Only in the chronic cases were specifics such as copaiba and cubebs used, being given orally to act systemically to counter internal inflammation and render the urine less acid.<sup>7</sup>

Surgeons showed little interest in gonorrhoea in women. In 1872, C. R. Drysdale observed that: 'Much obscurity exists, both as to the diagnosis and prognosis of gonorrhoea in the female sex.'<sup>8</sup> Most surgery textbooks reported that the disease was 'less common and less severe' in women and devoted it a tenth as much space.<sup>9</sup> While in principle the disease should have only affected a woman's urethra and bladder, female gonorrhoea usually presented as an inflammation or catarrh of the vulva and vagina.<sup>10</sup> Surgeons reported a few cases where the disease became chronic in the uterus, Fallopian tubes and ovaries, but here the effects were understood to be mild as such tissues were unsuitable soil for a specific urethral poison.<sup>11</sup> Surgeons viewed female genitalia, by virtue of their interiority and secretions (not least menstrual bleeding), as polluted and polluting, believing that women acquired or inherited tolerance of their own secretions and other poisons.<sup>12</sup>

The usual source of the specific gonorrhoeal poison for men was said to be the vagina of an 'unsound woman', where it had been deposited in semen from an infected man during previous intercourse. Some surgeons thought that prostitutes were simply reservoirs of poison, having become habituated to its effects.<sup>13</sup> However, in some cases it might have been 'generated by the decomposition of retained semen, especially after repeated indiscriminate intercourse without proper attention to cleanliness'.<sup>14</sup> The idea that the poison was 'generated' in women had two meanings; either that the quantity of any existing poison was increased, or that the poison might arise *de novo*. The latter possibility allowed surgeons to explain the occasional development of the gonorrhoeal poison in chaste women, apparently from the decomposition of her husband's semen or her own discharges in conditions of poor hygiene.<sup>15</sup> Also, any woman with leucorrhoea (white vaginal discharge) might produce a poison that could cause urethritis in a man, and which could turn gonorrhoeal in men of certain constitutional types.<sup>16</sup> In the small number of women diagnosed with gonorrhoea, treatment was similar to that in men, being mainly hygienic and conservative, with rest, cleanliness, and irrigation with anti-inflammatory chemicals.

<sup>7</sup> Copaiba and cubebs were plant-based remedies used as balsams to aid healing and ease pain.

<sup>8</sup> C. R. Drysdale, *Syphilis: Its Nature and Treatment, with a Chapter on Gonorrhoea* (London, 1872), p. 24.

<sup>9</sup> Holmes (ed.), *System of Surgery*, vol. 4 (1864), p. 634.

<sup>10</sup> In 1881, J. R. Lane stated that the sequelae of gonorrhoea in women were 'trifling'. *Report of the Select Committee on the Contagious Diseases Acts*, Minutes of Evidence and Appendix, British Parliamentary Papers (P. P.), 1881 (351) viii, paras. 2688, 2697.

<sup>11</sup> B. Hill, *Syphilis and Local Contagious Disorders* (London, 1868), p. 452.

<sup>12</sup> V. Bullough and M. Voght, 'Women, Menstruation, and Nineteenth-century Medicine', *Bulletin of the History of Medicine*, 47 (1973), 66–82.

<sup>13</sup> *British Medical Journal (BMJ)*, 2 (1881), 656.

<sup>14</sup> Erichsen, *Science and Art*, vol. 2 (1877 edn), p. 872.

<sup>15</sup> Drysdale, *Syphilis*, p. 24.

<sup>16</sup> T. Holmes and J. W. Hulke (eds), *A System of Surgery*, vol. 3 (London, 1883), pp. 376–8.

In the last third of the nineteenth century, it was widely reported that gonorrhoea was more prevalent than syphilis, yet it did not excite the same interest or action as syphilis. The experts who recommended the procedures to be followed in operating the Contagious Diseases Acts barely mentioned gonorrhoea.<sup>17</sup> Yet, during the operation of the Acts from 1864 to 1883, gonorrhoea accounted for 52 per cent of all cases registered in the services, and in some years accounted for two-thirds, making it an important cause of invalidism.<sup>18</sup> The returns from Lock Hospitals presented to the Select Committee on the Contagious Disease Act also showed a high incidence of gonorrhoea amongst women detained under the Acts. For example, at the Royal Albert Hospital, Devonport, between 1866 and 1869, of the 2,895 women received, over 75 per cent had gonorrhoea.<sup>19</sup> In 1870, the Lock Hospital in Plymouth received 851 women of whom 160 had syphilis, 521 had gonorrhoea, 108 had both, and the remaining 59 had genital warts; again 75 per cent with gonorrhoea.<sup>20</sup> It is interesting that this high incidence of diagnosed gonorrhoea, amongst exactly those women who were supposedly most immune, did not provoke comment. One reason might be that the operation of the Contagious Diseases Acts and the repeal campaign focused on ‘venereal disease’—a singular moral and political construct largely defined by syphilis—rather than a number of medically distinct ‘venereal diseases’. Also, the prevalence of gonorrhoea amongst prostitutes would have been seen as a threat to service men, not to the women themselves.

#### *Noeggerath, Gynaecologists, and Surgeons*

Claims about the potential severity of gonorrhoea in women were being aired many years before Neisser’s first publication on the gonococcus in 1879 and its ontological definition of the disease. The best known of these was published in 1872 by the German-born, New York-based gynaecologist, Emil Noeggerath, in a book whose title translated as *Latent Gonorrhoea in the Female Sex*.<sup>21</sup> The book attracted immediate attention in Britain, although an English-language version of his views only became available in the *Transactions of the American Gynaecological Society* in 1876.<sup>22</sup> Noeggerath made three controversial claims. The first was that gonorrhoea was far more prevalent than previously supposed and that it was never cured. He startled his readers with the claim that 80 per cent of adult men in New York had suffered from gonorrhoea and remained sources of infection, especially to their brides, to whom they gave ‘honeymoon gonorrhoea’. The assumption was either that the poison had never left the body, or could be reactivated by the nervous excitement and physical irritation of regular intercourse after marriage. Noeggerath’s second claim was that gonorrhoea was an equally serious disease in

<sup>17</sup> J. Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (Cambridge, 1980), p. 54.

<sup>18</sup> *Contagious Diseases Returns, 1864–1883*, P.P., 1897 (217) liv, p. 503.

<sup>19</sup> *Ibid.*, Appendix C, p. 832.

<sup>20</sup> *Ibid.*, Appendix C, p. 921.

<sup>21</sup> E. Noeggerath, *Die Latente Gonorrhöe im Weiblichen Geschlecht* (Bonn, 1872).

<sup>22</sup> E. Noeggerath, ‘Latent Gonorrhoea, especially with Regard to its Influence on Fertility in Women’, *Transactions of the American Gynaecological Society*, 1 (1876), 268–300.

both sexes, and was a major cause of puerperal disease and infertility. Indeed, he estimated it caused 90 per cent of sterility in women. Thirdly, he speculated that a fungus caused the disease, and invited further work by mycologists and gynaecologists. The latter claim attracted least attention, being typical of the speculation on disease-germs and fungus theories in the late 1860s and early 1870s.

In Britain, there was a division in reactions to Noeggerath's claims. Obstetricians and gynaecologists offered support, while general surgeons tended to dismiss them. Historians have recognized the importance of ovariectomies in the struggles over specialization in surgery, but gonorrhoea in women was another area of contention, especially as it touched upon the issues of germ theories and antiseptics.<sup>23</sup> In 1873, Angus Macdonald, obstetrician to Edinburgh Royal Infirmary, supported Noeggerath's assertions about latency in women with reports of seven cases where gonorrhoea had led to complications for the mother and conjunctivitis in the baby.<sup>24</sup> However, Macdonald distanced himself from what he regarded as the alarmism of Noeggerath's views, introducing a critical comment used widely in subsequent years; namely that, if he was right on his first two points, then Malthus need not have worried. Interestingly, Macdonald was a supporter of Pasteurian germ theory and wrote that he looked forward to the emergence of a 'Lister of obstetrics and gynaecology', who would solve the problem of puerperal fever and gonorrhoea.<sup>25</sup> Lawson Tait, one of the country's best known gynaecologists, also noted the consequences of gonorrhoeal infection in his book, *Diseases of Women*, in 1877, saying it was 'a disease which may be fraught with the most serious and unexpected consequences'.<sup>26</sup>

In contrast, Noeggerath's views were ignored in all of the new editions of the major British surgery textbooks published between 1876 and the late 1880s. Erichsen's *The Science and Art of Surgery*, in its 1884 and 1888 editions, stated that gonorrhoea was less likely to affect women, although it was admitted that it was 'usually more extensive and of longer duration'.<sup>27</sup> Henry Lee, in the 1883 edition of Holmes's and Hulke's *A System of Surgery*, observed that gonorrhoea was 'much less an affliction in women than in men; and when it does occur, the disease is ordinarily much less severe, and hence rarely comes under treatment'.<sup>28</sup> Specialists in venereal diseases told the same story; for example, the fourth edition of Hill's and Cooper's *Student Manual* in 1886 stated that for women with gonorrhoea: 'The prognosis is favourable; and dangerous complications are very uncommon'.<sup>29</sup>

<sup>23</sup> O. Moscucci, *The Science of Woman: Gynaecology and Gender in England, 1800–1929* (Cambridge, 1990).

<sup>24</sup> A. Macdonald, 'Latent Gonorrhoea in the Female Sex, with Special Relation to the Puerperal State', *Edinburgh Medical Journal*, 18 (1873), 1086–104.

<sup>25</sup> *Ibid.*, pp. 1103–4.

<sup>26</sup> L. Tait, *The Diseases of Women* (Birmingham, 1877), p. 211. In a later publication, Tait directly supported Noeggerath and Macdonald; see L. Tait, *Diseases of Women and Abdominal Surgery*, vol. 1 (Leicester, 1889), p. 402. Cf. J. Thorburn, 'Latent Gonorrhoea as an Impediment to Marriage', *BMJ*, 2 (1877), 259.

<sup>27</sup> This observation was repeated in all editions from 1887 to 1888. Erichsen, *Science and Art*, Vol. 2 (1877 edn), p. 884.

<sup>28</sup> H. Lee, 'Gonorrhoea', in Holmes and Hulke (eds), *System of Surgery*, p. 391.

<sup>29</sup> B. Hill and A. Cooper, *A Student's Manual of Venereal Diseases* (London, 1886), p. 91.

*Gonorrhoea, Germs, and Bacteriology*

As contagious diseases, syphilis and gonorrhoea were early candidates for a germ aetiology and pathology.<sup>30</sup> The likely *contagium viva* of gonorrhoea in the 1860s and 1870s were fungi. Ernst Hallier, better known for his work on the cholera ‘fungus’ and the mutability of bacteria, had identified organisms in gonorrhoeal discharges in 1869.<sup>31</sup> Noeggerath himself mentioned the American fungus pathologist, John H. Salisbury, whose work on a range of diseases enjoyed international currency in the early 1870s.<sup>32</sup> In 1879, Neisser, who worked in the dermatology clinic at the University of Breslau, announced his finding of the repeated presence of the same micrococci in gonorrhoeal pus. Dermatologists were generally ready converts to germ theories of disease as many skin conditions were caused by external agents such as fungi, and these were readily diagnosed by microscopy. This experience was evident in Neisser’s use of oil-immersion microscopy and methylene blue stain to show the ‘paired micrococci’ of the gonococcus. His claim that these peculiar cocci were the cause of gonorrhoea depended on their constant association in clinically diagnosed cases in men and women, and in cases of infective ophthalmia. The ontological implications of Neisser’s claim were clear; he broke with the sexual specificity of gonorrhoea and with its local, largely venereal character.

A small number of British surgeons, most notably William Watson Cheyne, Joseph Lister’s House Surgeon at King’s College, London, seized on the claim that gonorrhoea was a germ disease to change their treatments. Unsurprisingly, Cheyne was most attracted by the new potential for antiseptic treatments, although, interestingly, he was sceptical that Neisser’s micrococci were the causal agents.<sup>33</sup> Cheyne proposed a new treatment which had two aims: to maintain the vitality and resisting power of the mucus membrane of the urethra, and to kill or inhibit the growth of the organisms.<sup>34</sup> His dual strategy of attention to ‘seed and soil’ was typical of Listerian practice at this time, which combined anti-germ measures with preserving the vital resistance of healthy tissues. Thus, Cheyne avoided carbolic acid because of its known irritating power, and instead used iodoform, eucalyptus oil, and, on the recommendation of Robert Koch, bichloride of mercury. Lister’s surgical opponents were sceptical of anti-germ measures and dismissed Cheyne’s new treatment as a return to discredited abortive methods.<sup>35</sup>

<sup>30</sup> B. Ryan, ‘On the Communicability of the Gonorrhoeal Virus’, *Medical Times*, 2 (1851), 462; D. Campbell Black, ‘On Certain Points in the Pathology and Treatment of Gonorrhoea’, *BMJ*, 1 (1870), 405.

<sup>31</sup> C. Gradmann, ‘Geschichte als Naturwissenschaft: Ernst Hallier und Emil du Bois-Reymond als Kulturhistoriker’, *Medizinhistorisches Journal*, 35 (2000), 31–54.

<sup>32</sup> J. H. Salisbury, ‘Descriptions of Two New Algold Vegetations, One of which Appears to be the Specific Cause of Syphilis and the Other of Gonorrhoea’, *American Journal of Medical Science*, 55 (1868), 17–25.

<sup>33</sup> In the early 1880s, Cheyne and Lister were in dispute with Alexander Ogston over the role of micrococci in wound infections and septic diseases. Cheyne maintained that only bacteria caused disease and that micrococci were harmless. See M. Worboys, *Spreading Germs: Disease Theories and Medical Practice in Britain, 1865–1900* (Cambridge, 2000), pp. 156–64.

<sup>34</sup> W. W. Cheyne, ‘On the Abortive Treatment of Gonorrhoea’, *BMJ*, 2 (1882), 175–7, 213–5.

<sup>35</sup> C. B. Keetley, ‘The Treatment of Gonorrhoea and Greet’, *BMJ*, 2 (1880), p. 349. See also C. B. Keetley, *Index of Surgery* (London, 1881), p. 136.

It is possible to construct a history of gonorrhoea and the gonococcus in the 1880s in which Koch's four postulates for the establishment of a bacterial aetiology were successively confirmed. This version of events was first told to a British audience by William Japp Sinclair, a Manchester gynaecologist and obstetrician, in a series of articles in the *Medical Chronicle* in 1887 on gonorrhoea in women.<sup>36</sup> According to Sinclair, Continental gynaecologists and pathologists made the crucial demonstrations, beginning in 1880 when Bokai cultured the organisms and produced the disease by inoculating the urethras of six medical students. In 1883, Bockhart reported the first demonstration of the newly-announced postulates. He had inoculated pure culture specimens into a man suffering from dementia, who died ten days later, thus allowing specimens to be taken at post-mortem and pure cultures re-established. However, the definitive modern view was set out in 1885 by Ernst Bumm, a leading German gynaecologist and obstetrician. Bumm detailed sophisticated methods of staining to differentiate the true gonococcus from other organisms, and reliable methods of pure cultivation on blood serum.<sup>37</sup>

There is an alternative story of the first decade of the gonococcus, which highlights observational uncertainties, experiments with ambiguous results, and a growing mismatch between laboratory and clinic. Thus, rather than Bumm's work bringing closure in 1885, the aetiology and pathology of gonorrhoea was said to have remained open. George Bantock presented such a version to the Section of Obstetric Medicine and Gynaecology at the Annual Meeting of the British Medical Association in July 1890.<sup>38</sup> Although he practised as a gynaecologist, Bantock's views were typical of general surgeons' continuing scepticism towards bacterial accounts of disease and Listerian antisepsis.<sup>39</sup> He maintained that the most significant feature of Bumm's work was the identification of five distinct types of cocci, including a possible pseudo-gonococcus. To distinguish these types, Bumm had developed very complex staining methods, involving the use of Gram's stain. Sinclair had regarded this as a triumph of bacterial technique with potential for accurate diagnosis, but Bantock concluded that these methods were now 'so delicate and complicated' that surgeons 'must fall back on rigid clinical observation'. Bantock also noted that Sanger had found that the gonococcus was not present in every clinically diagnosed case of the disease, raising important questions about the reliability of bacteriological diagnoses and the meaning of negative results. Also, there had been no further reports of 'human experiments' and no animal model for inoculation experiments had been found.

Thus, the aetiological standing of the gonococcus did not rest on the new Gold Standard of Koch's postulates, but on one-off demonstrations and complex microscopy. By the late 1880s, Bumm himself was speculating on compound

<sup>36</sup> W. J. Sinclair, 'Gonorrhoea in Women', *Medical Chronicle*, 6 (1887), 110–28, 177–92, 266–81, 353–71, 441–54; and *ibid.*, 7 (1887–8), 1–18.

<sup>37</sup> E. Bumm, *Der Mikro-Organismus der gonorrhoeischen Schleimhaut-Erkrankungen 'Gonococcus-Neisser': nach Untersuchungen beim Weibe und an der Conjunctiva der Neugeborenen* (Wiesbaden, 1885).

<sup>38</sup> G. Bantock, 'On the Importance of Gonorrhoea as a cause of Inflammation of the Pelvis Organs', *BMJ*, 1 (1891), 749–51, p. 750. George Grenville Bantock was a surgeon at the Samaritan Free Hospital, who claimed to have better results with his hygienic, soap and water methods than his Listerian colleague, Thomas Spencer Wells. Moscucci, *Science of Woman*, pp. 154, 175.

<sup>39</sup> *Ibid.*, 750.



infections, suggesting that gonococci often acted in tandem with other organisms; for example, providing the conditions for septic germs to enter tissues.<sup>40</sup> Bantock typified a pattern established from the late 1870s, where those who opposed germ theories of disease regularly used the new bacteriology to support their case. They were aided by the fact that the initial expectation of germ theorists was that there would be a single germ for every disease, and that germicidal agents would be found to destroy them all, did not materialize. Instead, bacteriologists showed germs to be ever more complex, with many strains of individual pathogens and the same strain showing variable virulence. At the same time, doctors found it extremely difficult to remove or kill disease-germs on or in the body, even with a local, surgical condition such as gonorrhoea.

Bacteriology provided new resources for speculation on the question of the curability of the gonorrhoea and its latency.<sup>41</sup> Bantock maintained that relying on laboratory tests for diagnosis was dangerous and irresponsible. How could a surgeon be confident that micrococci, or their possible ultra-microscopical spores or co-pathogens, were not lurking in a man's bladder, Cowper's gland, seminal vesicles, or in a woman's glands of Bartholin, uterus, or Fallopian tubes? Gonococci might not be picked up in the specimen taken or examined by microscopy. An additional problem was that, to distinguish gonococci from other organisms, investigators had first to stain them, then treat them with Gram's solution, causing them to lose colour. Thus, their Gram-negative property meant, paradoxically, that their presence was confirmed by their absence from final observations. Also problematic was the fact that the organism did not grow on standard culture media, and had to be grown in human blood serum. The aetiological point being made was that the gonococcus was one factor amongst many in the production of gonorrhoea, not a single sufficient cause.

Yet, in all of the early bacteriological manuals published in Britain, the gonococcus was presented as the specific cause of gonorrhoea. The accounts were brief, as the absence of standard solid-plate culturing methods and inoculation findings meant that there were only the results of microscopy to show. Nonetheless, pathologists and bacteriologists welcomed the gonococcus and often placed Neisser second only to Koch in the timeline of germ discoverers. The first extended account of the Neisser gonococcus and the properties written specifically for a surgical audience in Britain was by the American surgeon, Nicholas Senn, in his *Surgical Bacteriology* in 1889.<sup>42</sup> Senn presented the gonococcus as having fully met Koch's postulates, developing an ontological account of gonorrhoea, which included all the consequences of the venereal form in both sexes and in ophthalmia neonatorum. On the latter, he stated that ophthalmologists were using bacterial diagnosis and that antiseptic methods of treatment were effective in countering the condition. Senn, seemingly reflecting divided opinion, included a section on those

<sup>40</sup> C. R. Drysdale, 'The Contagium of Gonorrhoea', *Medical Press*, 2 (1882), 391–2; idem, 'Compound Gonorrhoeal Infection', *BMJ*, 2 (1888), 1299.

<sup>41</sup> Editorial, 'Latent Gonorrhoea in Women', *BMJ*, 2 (1888), 190. See also *London Medical Recorder*, 1 (1888), 4–6.

<sup>42</sup> N. Senn, *Surgical Bacteriology* (Edinburgh, 1889), pp. 235–46.

who doubted the role of the gonococcus and the value of bacterial diagnosis, listing the reservations of Sanger, Fraenkel, Sternberg, and Leiskitiow.<sup>43</sup> The second edition of Senn's book, published two years later, had a longer list of objectors and doubters. The issue was not the role of the gonococcus as such, but its possible variability, its role in pathogenesis, the body's reactions to its presence, and the value of laboratory methods to clinicians. This illustrates the important point that bacteriological 'discoveries' did not bring rapid closure to the aetiology and pathology of communicable diseases.

Throughout the 1890s, surgical opinion, as reflected in the major textbooks and in published reports, remained divided on the gonococcus. In the 1892 edition of Frederick Treves' *Manual of Surgery*, A. J. Pepper set out the main claims for the gonococcus: (i) all gonorrhoeal discharges contain the organism; (ii) pure cultivations of the organisms when inoculated excite the disease locally; and (iii) constitutional symptoms derive from the internal spread of the gonococci.<sup>44</sup> However, Pepper qualified this 'with evidence in the other direction', principally around the role of other causes of inflammation and the failure of antiseptic methods, still apparently an acid test for germ theories of disease in surgery. Charles Stonham's revision of Berkeley Hill's essay on gonorrhoea in the second edition of Quain's *Dictionary of Medicine* (1894) also expressed doubts. Stonham wrote that: 'It is not at present proved incontestably that the [Neisser] diplococcus . . . is really the specific poison of gonorrhoea', pointing to problems with microscopy, cultivation, and differentiation from similar organisms.<sup>45</sup>

An important change began in the late 1890s, being evident mainly in the contributions made by surgeons with specialist practices in venereal diseases, many of whom were based in Lock Hospitals. Surgical textbooks, reflecting the manner in which practice was developing, became edited compilations written by specialists, including venereologists and gynaecologists. Gynaecologists' and obstetricians' emphasis on the long-term internal complications of gonorrhoea in women exemplified the shift in the surgical gaze from external, local diseases, towards internal conditions that required specialist experience to identify and manage. A new anatomical view of the disease was established, where the vagina, cervix, uterus, and Fallopian tubes were seen together as a conduit for germs to travel deep into the female body, where their effects could only be dealt with by abdominal operations. Specialization in this area, as in others, both followed and produced an increase in the number and complexity of procedures. Such elaborations were also seen in the prevention, control, and treatment of surgical diseases, and were reflected in ever more voluminous publications. In 1913, George Luys needed three volumes for his textbook on gonorrhoea, and in the following year, D'Arcy Power and Murphy needed five volumes for their *System of Syphilis*.<sup>46</sup>

In surgical practice, bacterial diagnosis made little headway in the 1890s, and not only because of technical difficulties. A review of the 'Latest Continental Views

<sup>43</sup> On Sternberg's work on gonococci, see *London Medical Record*, 13 (1885), 110.

<sup>44</sup> A. J. Pepper, 'Gonorrhoea', in F. Treves, *A Manual of Surgery* (London, 1892), pp. 280–1.

<sup>45</sup> R. Quain (ed.), *A Dictionary of Medicine* (London, 1894), p. 787.

<sup>46</sup> G. Luys, *A Textbook of Gonorrhoea and its Complications*, trans. by A. Forrester (London, 1913); D'A Power and J. Keogh Murphy, *A System of Syphilis* (London, 1914).

Concerning the Gonococcus and Allied Organisms', published by two Dublin-based doctors in 1890, was typically lukewarm about bacterial diagnoses.

A given diagnosis can be regarded as entirely free from suspicion only when the purely clinical tests and the bacterial tests are quite coincident and quite absolute. An undue weight and value should not be attached to bacteriological investigations, because after all is said and done, it is essential that a firm clinical substratum should underlie the whole.<sup>47</sup>

This statement was typical of the perceived place of bacteriological diagnosis at this time; namely, to reinforce clinical judgements. Even enthusiasts for bacteriology, such as William Japp Sinclair, argued that 'there was no need in the consulting room to call in the aid of bacteriology'.<sup>48</sup> He maintained that since laboratory investigations had confirmed the 'true' character of gonorrhoea, doctors could now rely with renewed confidence on their clinical methods, reserving bacteriology for difficult cases. Jonathan Hutchinson, by then the grand old man of British venereology, contributed the chapter on gonorrhoea to Treves' new *System of Surgery* in 1895; he too queried the value of microscopy due to the number of similar organisms to the gonococcus and the questionable value of negative results.<sup>49</sup>

Surgeons' published views on the gonococcus began to change in the late 1890s. In 1898, in their new textbook, Rose and Carless were unequivocal that the gonococcus was the essential cause of gonorrhoea and that bacterial diagnosis, by microscopy rather than culturing, was invaluable.<sup>50</sup> Cheyne's and Burghard's *Manual of Surgical Treatment*, published in 1903, regarded bacterial diagnosis as essential, but warned that many negatives were needed before a surgeon could confirm the absence of infection.<sup>51</sup> These were two examples of a new generation of surgical manuals which, in order to celebrate surgery's modernity and its debt to Joseph Lister, began with detailed accounts of the bacteriology of surgical and non-surgical diseases. Thus, doubts were put to one side as surgery was presented as based on a scientific understanding of septic and other surgical infections. The extent to which this enthusiasm for bacteriology in surgical textbooks and education actually led to surgeons using bacterial diagnoses is a moot point. One problem they faced was the dearth of service laboratories in hospitals, and of public and private laboratories for general practitioners and medical officers of health. Also, the asymmetry in the value of positive and negative results remained a major obstacle, as too did the cost of bacteriological tests for the gonococcus, which were amongst the most expensive.<sup>52</sup> Besides, surgeons were already confident of their ability to diagnose gonorrhoea in men clinically, and this confidence grew amongst the new specialists in venereology. Ironically, where bacteriological diagnosis was most needed was in chronic disease in women, yet this is where it was least reliable and least likely to be used.

<sup>47</sup> E. Blake and E. B. Shuldham, 'Latest Continental Views Concerning the Gonococcus and Allied Organisms', *Medical Press*, 1 (1890), 655–7; *ibid.*, 2 (1890), 3–6.

<sup>48</sup> W. J. Sinclair, 'Diagnosis of Gonorrhoeal Infection in Women', *Lancet*, 1 (1890), 1244.

<sup>49</sup> J. Hutchinson, 'Gonorrhoea', in F. Treves (ed.), *A System of Surgery* (London, 1895), 433.

<sup>50</sup> W. Rose and A. Carless, *A Manual of Surgery for Students and Practitioners* (London, 1898), p. 561.

<sup>51</sup> W. W. Cheyne and F. F. Burghard, *A Manual of Surgical Treatment* (London, 1903), p. 373.

<sup>52</sup> In 1901, the Clinical Research Association charged 5s. 0d. for a report on gonococci in a specimen, double that for Tubercle bacilli sputum test. *The Clinical Research Association Handbook* (London, 1901), p. 22.

*Women and Babies*

Allan Brandt has shown that in the United States there was a continuing interest in gonorrhoea in women from Noeggerath in the 1870s through to the 1900s, with it being a prominent issue for social purity campaigners after 1900, especially Prince Albert Morrow.<sup>53</sup> There was nowhere near the same interest in Britain and the only person to take up Noeggerath's banner was William Japp Sinclair. He attempted to raise medical and public awareness in his 1887 lectures in Manchester, which were published in a book entitled *Gonorrhoea in Women*.<sup>54</sup> Unsurprisingly, he opened with an attack on surgeons, complaining not only of their neglect of the condition, but of their insularity and ignorance of North American and Continental work. Sinclair cited Noeggerath and Neisser as his inspiration, endorsing the former's now moderated claims about the incidence of the disease.<sup>55</sup> His main source of pathological information was Ernst Bumm's *Gonococcal Disease in Women and the New Born*. A recurrent theme was that of innocent wives being infected by husbands who, encouraged by their surgeons, had taken gonorrhoea too lightly. This meant that gonorrhoea often went unrecognized until presented to gynaecologists as a serious uterine or pelvic condition that required surgical intervention.

Sinclair had a mixed reception to his attempts to alert colleagues to the seriousness of gonorrhoea in women.<sup>56</sup> General surgeons reported that they simply did not see the same numbers of cases of simple gonorrhoea or complications as reported in North America or Germany.<sup>57</sup> Sinclair's most strident critic was George Bantock, who complained about 'the language of exaggeration, which seems to be fatally connected with this subject' and stated that he had never seen disease of the Fallopian tubes or ovaries of gonorrhoeal origin.<sup>58</sup> Other gynaecologists and obstetricians also expressed doubts about Sinclair's claims.<sup>59</sup> In 1896, F. J. McCann warned that the origin of most tubal and ovarian disorders was quite uncertain and that gonorrhoea was being used as 'a useful cloak of ignorance' by campaigners with wider agendas.<sup>60</sup> Judged by the writings in their journals and textbooks, the view of gynaecologists was that gonorrhoea was one among many causes of diseases of the cervix, uterus, Fallopian tubes, ovaries, and abdomen. Indeed, what caused the condition was not of much interest to surgeons as they were dealing with diseases that had developed over many years and where such knowledge did not influence treatment. Obstetricians were more concerned about

<sup>53</sup> A. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States Since 1880* (New York, 1985).

<sup>54</sup> W. J. Sinclair, *Gonorrhoea in Women, On Gonorrhoeal Infection in Women* (London, 1888).

<sup>55</sup> Anon., 'Latent Gonorrhoea', p. 190.

<sup>56</sup> *British Gynaecological Journal*, 4 (1888–9), p. 121.

<sup>57</sup> Hill and Cooper, *Student's Manual*, pp. 90–3.

<sup>58</sup> Bantock, 'On the Importance', 749–51.

<sup>59</sup> Sinclair replied to Bantock indirectly, speculating on why 'the bias produced by emotion' was more powerful in gynaecology than other areas of medicine. W. J. Sinclair, 'The Influence of Prejudice and Criticism in the Progress of Gynaecology', *Transactions of the North of England Obstetrical and Gynaecological Society* (1893), 126–45.

<sup>60</sup> F. J. McCann, 'The Aetiology of Gonorrhoea', *Transactions of the Obstetrical Society of London*, 38 (1896), 251–2.

gonorrhoeal eye infections in babies, but the high incidence of this condition suggested that mothers with gonorrhoea were fertile.<sup>61</sup>

After Haab's claims on the gonorrhoeal origin of ophthalmia neonatorum in 1881, British ophthalmologists immediately took to discussing 'micrococci' and using microscopy to investigate purulent inflammations. At the same time, another German obstetrician, Carl Credé, was recommending Listerian measures to combat the problem.<sup>62</sup> He tried to make the cervix and vagina of parturient women germ-free by irrigation with carbolic acid and then treated the eyes of babies with silver nitrate. The latter, simple and inexpensive, procedure was rapidly taken up in Britain; for example, in 1881, Emrys Jones published details of successful cases at the Royal Eye Hospital Manchester.<sup>63</sup> Jones also collected information on the inmates of Henshaw's Blind Asylum that showed that nearly half of recent entrants had preventable blindness (32 out of 72 new cases) and that three-quarters of this group had suffered from ophthalmia neonatorum. This showed that one-third of all blindness was due to gonorrhoeal infection and was now preventable. Only a small percentage of babies suffered from ophthalmia neonatorum, but the disease was the single largest cause of blindness. This fact grew in medical and public importance through the 1880s, in the wider concern over blindness and other disabilities, which culminated in a Royal Commission on the Blind, Deaf and Mute in 1889. The main issues before the Commission were how to educate blind, deaf, and mute children, and fears about a rising incidence of blindness due to overpressure in education, industrial injuries, and disease. Although ophthalmia neonatorum did not loom large in the Commission's deliberations, its Final Report recommended the routine cleansing of babies' eyes immediately after birth. Obstetricians were already adopting such procedures as part of their goal of reducing infective puerperal problems and also used it in their struggle to control childbirth. Their complaints about midwives' ignorance of modern ideas on infection and their inability to use antiseptics, were further ammunition in their calls for tighter controls on midwives and for more births to be referred to obstetricians.

### *Marriage and Social Hygiene*

In the 1890s, the wider public and medical interest in venereal diseases broadened from prostitution to marriage, and to their effects on women, children, and the future of the race.<sup>64</sup> As Bland has shown, the most important factor in the changed character of concerns about venereal diseases was the activities of women's rights campaigners around equality in marriage.<sup>65</sup> The specific issues they focused upon

<sup>61</sup> D. McKeown, 'The Prevention of Ophthalmia Neonatorum and of its Ravages', *Transactions of the Obstetrical Society of London* (hereafter *TOSL*), 27 (1885), 2749–57. See also *TOSL*, 35 (1893), 71–92; 43 (1903), 337–63.

<sup>62</sup> 'Readings in the History of Gonorrhoea, II', *Medical Life*, 39 (1932), 525–88.

<sup>63</sup> E. Jones, 'Ophthalmia Neonatorum', *BMJ*, 1 (1881), 345.

<sup>64</sup> L. Bland, 'Cleansing the Portals of Life: The Venereal Disease Campaign in the Early Twentieth Century', in M. Langan and B. Schwartz (eds), *Crises in the British State, 1880–1930* (London, 1985), 192–208.

<sup>65</sup> L. Bland, 'The Married Woman, the New Woman and the Feminist: Sexual Politics in the 1890s', in J. Rendall (ed.), *Equal or Different: Women's Politics, 1800–1914* (London, 1987), 141–64.

were divorce law reform, the definition of the 'ideal marriage', and the health hazards of marriage, especially male violence, childbirth, and venereal diseases. In this context, gonorrhoea took on new importance, especially to anyone who thought there was anything in Noeggerath's views.

In the United States, discussions of marriage and venereal diseases were dominated by Prince Albert Morrow, a former pupil of Albert Fournier, who had translated his mentor's *Syphilis and Marriage* in 1880. He continued to campaign on similar issues for the next 30 years, becoming an influential doctor and lobbyist in New York City, and the author of a major textbook on genito-urinary diseases. In 1904, Morrow published *Social Diseases and Marriage*, a book that became the defining statement of the early twentieth-century American campaign against venereal diseases.<sup>66</sup> Reviews of the book in the British medical press were mixed.<sup>67</sup> Yet again it was claimed that British doctors simply did not see the number of cases of gonorrhoea, or anything like the serious complications that Morrow's 'shrill and repetitious' tract identified. A central theme of Morrow's work was the need to protect 'innocent wives' from being infected by diseased husbands, though he now added fears about the future of the race. In Britain, due to the influence of the eugenic ideas after 1904, the venereal disease that seemed most dangerous was syphilis, through its role in producing defective and degenerate children.

British feminists, amongst them many women doctors, pursued the issues raised by Morrow about the impact of venereal diseases on women's health and they continued to link this to moral reform. The nearest British equivalent to Morrow's tract was a booklet published in 1908 by the National Union of Women's Suffrage Societies (NUWSS), entitled *Under the Surface*.<sup>68</sup> Its author was Louisa Martindale, a recent graduate of the Women's Medical School and member of the NUWSS Executive Committee. In her autobiography, Martindale wrote that her pamphlet had two aims: to educate women and to show that women's suffrage was a moral as well as a political movement.<sup>69</sup> Her main argument was that prostitution had always been associated with venereal diseases, and that the only effective means of control was to end prostitution. This was best achieved by giving women political rights, which would in turn give them full moral and economic rights. Martindale's pamphlet was sold through suffrage organizations and went through six editions between 1908 and 1912, becoming the subject of parliamentary and press controversy in 1912, when it was cited by opponents of suffrage as an immoral publication that should be banned. Martindale wrote of three venereal diseases: syphilis, gonorrhoea, and venereal sores. She gave a conventional account of syphilis, making no distinctions between the disease in men and women, although stating that in women it could induce abortions, miscarriages, and produce weak children. With gonorrhoea, she emphasized sexual differences and the greater dangers to women through its effects on the uterus, Fallopian tubes, ovaries, and abdomens of women.

<sup>66</sup> P. A. Morrow, *Social Diseases and Marriage* (New York, 1904).

<sup>67</sup> *BMJ*, 1 (1904), 1488; *Lancet*, 2 (1904), 380.

<sup>68</sup> L. Martindale, *Under the Surface* (Brighton, 1910). The publication of the first edition coincided with a new American book on the disease in women; P. Findley, *Gonorrhoea in Women* (St Louis, 1908).

<sup>69</sup> L. Martindale, *A Woman Surgeon* (London, 1951).

She offered a medical case against the reintroduction of regulation; namely, that diagnosis of both diseases was difficult and that hospitalization would serve no purpose as there were no cures. Prevention was the only answer, a point she linked to consequences for innocent, newly-wed women infected by husbands who were supposedly cured. Indeed, the longstanding assertion about the latency of the gonorrhoea in men took on new significance in the 1900s as it was linked to the notion of health carriers of disease.<sup>70</sup> Women doctors also presented new evidence on the incidence of the disease. For example, in 1909, Frances Ivens, a medical officer for the diseases of women at the Liverpool Stanley Hospital, published figures which showed one in seven of women out-patients, and one in four of in-patients had gonorrhoea.<sup>71</sup>

A distinct turn of opinion on gonorrhoea within medicine and surgery became apparent around 1910. This was most evident in the number of new books on the disease, including a translation of George Luys's French textbook, and studies by Norris on the disease in women, Pollock and Harrison on gonococci, and Watson on complications in men and women.<sup>72</sup> One reason was the new medical and public interest in venereal diseases which had been prompted by important changes with syphilis; specifically, the rapid acceptance of the *Trepanoma* as its bacterial cause in 1905, the development of the Wassermann Reaction to diagnosis, and the introduction of the Salvarsan treatment.<sup>73</sup> These developments produced new policy initiatives, new opportunities for specialist venereologists, and a new impetus for the provision of bacteriological laboratories. The management of gonorrhoea benefited from the opportunities for laboratory diagnosis and there were hopes too that vaccine therapy would be effective with chronic cases.<sup>74</sup> The textbooks that resulted from these shifts set out a consistent new view that gonorrhoea was as serious in women as men. For example, in his *Gonorrhoea in Women*, published in 1908, Findley, while distancing himself from Noeggerath, emphasized the gravity of the disease in women.<sup>75</sup> He suggested that the individual risks to women were more serious than with syphilis because of the potential for infertility and abdominal complications. He cast men as the sources and spreaders of infection, and hoped that every effort would be made to secure total cures in men, not only for their benefit and for their wives, but also for the future of the race. R. W. Johnstone's report on venereal diseases for the Local Government Board in 1913 accepted that gonorrhoea was the reason for one quarter to a half of all gynaecological operations, and a third of all childless marriages.<sup>76</sup>

<sup>70</sup> C.-E. A. Winslow, *The Conquest of Epidemic Disease* (Madison, 1943), pp. 337–46; J. W. Leavitt, *Typhoid Mary: Captive to the Public Health* (Boston, 1996).

<sup>71</sup> F. Ivens, 'The Incidence of Gonorrhoea on Gynaecological Hospital Practice', *BMJ*, 1 (1909), 1476–8.

<sup>72</sup> Luys, *Textbook of Gonorrhoea*; C. C. Norris, *Gonorrhoea in Women* (London, 1913); D. Watson, *Gonorrhoea and its Complications in the Male and the Female* (London, 1914); C. E. Pollock and L. W. Harrison, *Gonococcal Infections* (London, 1913).

<sup>73</sup> J. E. Ross and S. M. Tomkins, 'The British Reception of Salvarsan', *Journal of the History of Medicine*, 52 (1997), 398–423.

<sup>74</sup> Pollock and Harrison, *Gonococcal Infections*; M. Worboys, 'Vaccine Therapy and Laboratory Medicine in Edwardian Britain', in J. V. Pickstone (ed.), *Medical Innovation in Historical Perspective* (Houndmills, 1992), 84–103.

<sup>75</sup> Findley, *Gonorrhoea in Women*. See review in *BMJ*, 1 (1909), 1305–6.

<sup>76</sup> R. W. Johnstone, *Report on Venereal Diseases*, P.P., 1913 (Cd. 7029), XXXII, p. 423.

Women campaigners increasingly recast gonorrhoea as a major factor in the degeneration of individuals and in 'race suicide', arguing that while syphilis was a threat to the *quality* of future generations, gonorrhoea was a threat to *quantity*.<sup>77</sup> Christabel Pankhurst warned of 'race suicide' in her famous tract, *The Great Scourge and How to End It*, published in 1913, which is now best known for its invitation for suffragists to start a 'Sex War'.<sup>78</sup> Her polemic was primarily a response to concerns about the Royal Commission, appointed in 1913 to make new recommendations for the control of venereal diseases. Pankhurst complained first about the small number of women on the Commission and its medical as opposed to moral orientation. She argued that its formation was due to the hope of utilizing the Wassermann Reaction and Salvarsan to revive legislative measures as diagnosis was more accurate and treatment more effective.<sup>79</sup> The Local Government Board had already explored the availability of laboratories to undertake Wassermann Reactions and the value of Salvarsan as a specific treatment was a hot topic in medical circles.<sup>80</sup> Pankhurst feared that doctors were trying to make immorality safe by removing the great deterrent for men against going with prostitutes; namely, the fear of catching an incurable disease. She maintained that venereal diseases could either never be cured, or a cure could never be proved. She suggested that it was no accident that venereal diseases were unique to humans (evident in the great difficulty that laboratory scientists had in finding animal models for syphilis as well as gonorrhoea) and impossible to cure; Providence had made them so to ensure fidelity. Pankhurst's main message was that venereal diseases could only be controlled by full equality for women and the reform of male morality.<sup>81</sup>

Pankhurst also warned that the Commission would concentrate on syphilis and ignore gonorrhoea, the more serious threat to women. The account of venereal diseases in *The Great Scourge* devoted more space to gonorrhoea than syphilis, with special attention in a chapter on 'The Dangers of Marriage'. Amongst her most important arguments was that male doctors had concentrated on syphilis, the disease that most affected their sex, neglecting the most serious venereal disease for women. Pankhurst repeated familiar views: that infection in men was widespread, that it could lurk symptomless in the body for years, that it was impossible to cure, that it was the major cause of sterility, and that it was the main source of blindness in babies. She went on to articulate a women's perspective that stressed that men escaped lightly from gonorrhoea with a short-lived, local infection, while women suffered long-term systemic complications, their children were threatened by blindness, and the race was weakened by a declining birth-rate. She stated that gonorrhoea was 'the great curse of women and the cause of most of the special ailments

<sup>77</sup> L. A. Dock, *Hygiene and Morality: A Manual for Nurses and Others, Giving an Outline of the Medical, Social and Legal Aspects of Venereal Diseases* (New York, 1910).

<sup>78</sup> E. S. Pankhurst, *The Suffragette Movement* (London, 1931), p. 521.

<sup>79</sup> C. Pankhurst, *The Great Scourge and How to End It* (London, 1913), pp. v–vi. Pankhurst commented on the Royal Commission that, 'men are trifling with a great peril and are pretending that immorality can be made safe'. See *ibid.*, p. 26.

<sup>80</sup> D. Evans, 'Tackling the "Hidden Scourge": The Creation of Venereal Disease Treatment Centres in Early Twentieth-century Britain', *Social History of Medicine*, 5 (1992), 413–33, pp. 414–6.

<sup>81</sup> Pankhurst, *Great Scourge*, pp. 17, 26, 71, 105–6.



from which they suffer', linking this to gynaecological conditions and highlighting the prevalence and severity of what would now be termed pelvic inflammatory disease.<sup>82</sup> She also argued that, as well as specific complications, gonorrhoea was a major factor in chronic ill-health amongst women, and deployed this against the male opponents of suffrage, observing: 'What a cruel mockery it is that men have alleged the very weakness of which their behaviour is the cause as a reason why women should be condemned to political inferiority.'<sup>83</sup>

Pankhurst's volume was reviewed in the *British Medical Journal* in April 1914. The anonymous reviewer complained about exaggerations, but accepted that 'the serious nature of the *sequelae* . . . is not exaggerated, and it is probably true that they are, on the whole, more serious in women than in men'.<sup>84</sup> The author objected to Pankhurst's emphasis on prostitution, arguing that gonorrhoea was usually due to 'unchastity' by men and women, hence its control required co-operation between the sexes. Women critics, (for example, Louise Creighton who was a Christian anti-vice campaigner and member of the Royal Commission), disliked Pankhurst's 'antagonism against men' and explicit detail of the horrors of venereal diseases, although she too accepted the severity of gonorrhoea in women.<sup>85</sup> So too did all of the doctors who gave evidence to the Royal Commission in the spring and summer of 1914. The leading surgeons called to give evidence all stated that gonorrhoea was a very serious condition in women and that it was a major cause of genito-urinary and pelvic disease.<sup>86</sup> They all repeated the same figures, that gonorrhoea was the main cause of pelvic inflammatory disease in women and responsible for up to half of all sterility. Mary Scharlieb, the only female doctor on the Commission, raised the question of gonorrhoea in women with most witnesses, inviting them to talk about its seriousness. For example, early in the proceedings, J. E. Lane, a Surgeon at St Mary's and the London Lock Hospital, made supportive comments when asked about the views on gonorrhoea expressed in *The Great Scourge*.<sup>87</sup> Later, Victor Horsley stated that he welcomed Pankhurst's frankness and thought she had done 'an immense amount of good', not least in persuading people that gonorrhoea was as important in physical deterioration as syphilis.<sup>88</sup>

*The Final Report of the Royal Commission on Venereal Diseases* in 1916 is known for its pragmatic, non-regulationist recommendations, which sought to establish voluntary treatment centres for all sufferers, backed up by educational programmes.<sup>89</sup> The Report advocated a system that did not differentiate between 'guilty' and 'innocent', that treated men and women in the same way, and in which syphilis

<sup>82</sup> *Ibid.*, pp. 83–4.

<sup>83</sup> *Ibid.*, p. 95.

<sup>84</sup> 'Venereal Disease', *BMJ*, 1 (1914), 768.

<sup>85</sup> L. Creighton, *The Social Disease and How to Fight it: A Rejoinder* (London, 1914), pp. 25–6.

<sup>86</sup> *Evidence of the Royal Commission on Venereal Diseases*, P.P., 1914 (Cd. 7475), XLIX, p. 109, paras. 4594–5, 6731–3, 7370–7, 8307; *Evidence of the Final Report of the Royal Commission on Venereal Diseases*, P.P., 1916 (Cd. 8190), XVI, p. 215, paras. 13,611, 14,023–7, 17,791–6.

<sup>87</sup> M. Scharlieb, *The Hidden Scourge* (London, 1916).

<sup>88</sup> Royal Commission, *Evidence*, paras. 1120–4. The same sentiment was expressed in A. Corbett-Smith, *The Problem of Nations: A Study in the Causes, Symptoms and Effects of Sexual Diseases and the Education of the Individual therein* (London, 1914), pp. 16–17.

<sup>89</sup> *Final Report of the Royal Commission on Venereal Diseases*, P.P., 1916 (Cd. 8189), XVI, p. 1.

and gonorrhoea were equal dangers. The authors saw themselves as making an important correction on the latter point, stating that ‘a far more serious view of gonorrhoea than has hitherto been adopted should be taken by the medical profession and the public’.<sup>90</sup> In part, they remade gonorrhoea in the image of syphilis, as a condition with grave long-term consequences for individuals, families, society, and the race. Although described in ontological terms, as ‘an inflammation of the mucous or serous membranes’ due to the gonococcus, the Report stated that the micro-organism was a particular threat to women because it was ‘peculiarly tenacious, and when . . . lodged in the deeper structures, its dislodgement is extremely difficult, if not impossible’.<sup>91</sup> The Commission was set up and deliberated in a period of national crisis, hence its Final Report, published two years into the war in 1916, unsurprisingly reflected the importance of civilian health and morale, particularly for women as both workers and future mothers.<sup>92</sup>

Malcolm Morris, a venereologist and leading figure on the Royal Commission, published a popular version of the Final Report as *The Nation's Health* in 1917. He stated that gonorrhoea was only marginally behind syphilis in seriousness, qualifying this by adding that ‘it seems misleading to speak of it as “less serious” than syphilis, and *is* misleading unless the reader has been brought to a due sense of the gravity of the “more serious” disease’.<sup>93</sup> The future quality of the British people was under threat from syphilis and its quantity from gonorrhoea. The new status of gonorrhoea was evident in E. R. T. Clarkson’s edited collection, *The Venereal Clinic*, published in 1922. Both Clarkson and Sir Squire Sprigge, who introduced the section on gonorrhoea, cited approvingly the following quote from Norris’s *Gonorrhoea in Women*.

There is probably no other disease known to medical science that has caused as much suffering and sorrow throughout the civilised world as has gonorrhoea. Neisser states that, with the exception of measles, gonorrhoea is the most widespread of all diseases. It is the most potent factor in the production of involuntary ‘race suicide’, and by sterilization and abortion does more to depopulate the country than does any other one cause.<sup>94</sup>

The National Council for Combating Venereal Diseases, which led the propaganda campaign against venereal diseases, gave special prominence to gonorrhoea in its work, not least to counter popular opinion that it was still ‘no worse than a cold in the head’.<sup>95</sup>

### Conclusion

Between 1860 and 1920 the pathology of gonorrhoea was unsexed, being changed from a near exclusively male disease to one that affected both sexes and then to one

<sup>90</sup> *Ibid.*, para. 83.

<sup>91</sup> *Ibid.*, p. 27.

<sup>92</sup> Evans, ‘Tackling the “Hidden Scourge”’, pp. 418–19.

<sup>93</sup> M. Morris, *The Nation's Health: The Stamping Out of Venereal Disease* (London, 1917), pp. 52–3.

<sup>94</sup> E. R. T. Clarkson (ed.), *The Venereal Clinic: The Diagnosis, Treatment and Prevention of Syphilis and Gonorrhoea* (London, 1922), pp. xi, 75.

<sup>95</sup> National Campaign for Combating Venereal Diseases, *Venereal Disease—Pamphlet* (London 1920). The special warnings on gonorrhoea were that it was serious in women, could last a lifetime, and was more prevalent than syphilis.

that was more serious in women. I have argued that this shift was not principally the result of the rapid establishment of an ontological conception of the disease following bacteriological discoveries and the acceptance of the gonococcus as the essential cause. Instead, I have emphasized a long process of debate, in which specialization in medicine and wider developments in sexual politics in altering medical and public perceptions were more important factors. The key developments in medical specialization were the separation of gynaecology and obstetrics from general surgery, and the emergence of venereology from roots in dermatology, military medicine, and surgery. Also significant were struggles between obstetricians and midwives for the control of childbirth, where hygiene and infection control became key issues. Bacteriology has been shown to have been at best a background factor throughout, most telling by the fact that the development of service laboratories to undertake routine bacteriological testing was an outcome of the Final Report of the Royal Commission in 1916, some 30 years after the alleged ‘bacteriological revolution’ and a decade on from the realization of the potential of laboratory methods with syphilis.

The main change in sexual politics of venereal diseases was the switch from a primary concern with prostitution in the 1860s, to an interest in families, children, and the race from the 1890s. Certain feminists, including influential women doctors, tried to keep prostitution to the fore, largely to highlight the consequences of sexual inequalities and the double standards, but the women’s movement overall widened the debate. The Edwardian campaigns on ‘motherhood’ were largely cast in terms of infant deaths and degeneration, rather than maternal morbidity; for example, child blindness had a higher profile than pelvic disease and infertility in mothers. However, gonorrhoea in women was highlighted by women doctors such as Louisa Martindale, Frances Ivens, Mary Scharlieb, and Helen Wilson as a widespread and serious condition. The pivotal moment in changing public health policy and the medical profile of the problem was Christabel Pankhurst’s intervention in 1913. Her consciousness-raising writing fed directly into the deliberations of the Royal Commission on Venereal Diseases. When it reported in 1916, in the changed sexual politics of total war, both main venereal diseases were constituted as equivalent problems, given equal weight in both sexes, portrayed as having very similar pathologies, and with gonorrhoea more serious in women than in men.

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